



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

*Part 1: Literature Review*

*Part 2: Stakeholder Insights*

*Part 3: Policy Options*

*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**

**June 25, 2025**

**John Desfor, MPH; Keilyn Kawakami, PhD, MPH; Monica Ho;  
Diana M V Shaw, PhD, MPH, MBA; Amy Ma; Tetine Sentell, PhD;  
Aimee Malia Grace, MD, MPH**



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*This project has been funded in part through each of the following: grant No. GE1HS47344 from the U.S. Health Resources and Services Administration (HRSA); the Hawai‘i State Department of Health (HI DOH) Office of Primary Care and Rural Health; and HMSA Foundation.*

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

## ***Part 1: Literature Review***

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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 (HI 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.<sup>1</sup> Upstream policy decisions in this area significantly impact downstream health outcomes.<sup>2</sup> 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 like 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.

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<sup>1</sup> 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>.

<sup>2</sup> Ibid.

## Executive Summary

Hawai‘i is comprised of six publicly inhabited islands with the most rural islands being Moloka‘i (population = 7,404) and Lāna‘i (population = 3,193).<sup>3</sup> Many neighbor island residents travel to the most populated island of O‘ahu to seek any type of healthcare service, especially specialty care.<sup>4</sup> While there are healthcare services offered on neighbor islands, the capabilities and capacity may be insufficient due in part to the provider workforce shortage, small number of facilities, and limited technology. Given these challenges, rural communities tend to have higher rates of morbidity and mortality.<sup>5</sup>

While it is typical for neighbor island residents to fly to O‘ahu for emergency and non-emergency healthcare services, many people face issues when it comes to transportation. Transportation issues are exacerbated for the islands of Moloka‘i and Lāna‘i who only have 1-2 commercial airlines servicing the islands; one airline which has frequent delays and cancellations. When flights are delayed or canceled, neighbor island residents are not able to receive their highly needed care and must reschedule with their O‘ahu-based provider, which can take up to several months, and can cause additional health issues.

Over the course of this project, four topic areas were defined as key categories when discussing transportation and healthcare access which included Emergency Medical Services (EMS), Non-Emergency Transportation (NEMT), insurance coverage, and maternal fetal (MF) health.

O‘ahu is the only Hawaiian island with a Level 1 Trauma Center.<sup>6</sup> As such, many patients must be transported via air ambulance to O‘ahu in emergent cases. In addition to air ambulance transportation issues, ground ambulances must often traverse extended distances to reach patients in more rural and remote areas and then return back to medical centers, potentially compromising the timeliness and effectiveness of emergency medical care delivery and related patient outcomes. The limited number of ambulances across the state may be due to funding limitations, which further underscores the vulnerability of these communities to prolonged response times during critical incidents.

Patients who need to travel for routine appointments from the neighbor islands of Hawai‘i to O‘ahu most often need to fly as there is no inter-island ferry system (except limited services between Maui and Lāna‘i). Flights are expensive (approximately \$120 to \$320) and are often unreliable, particularly on Moloka‘i and Lāna‘i, leading to decreased transportation access. To minimize patient travel, healthcare providers have been flown to neighbor islands to provide care, however, this solution is expensive and unsustainable as costs almost always fall onto the receiving facility. In addition, the traveling providers typically fly commercially and deal with

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<sup>3</sup> Hawaii Visitors and Convention Bureau. “Eight Major Islands.” Hawaii Visitors and Convention Bureau. <https://www.hvcb.org/school-report/eight-major-islands/>.

<sup>4</sup> Health Resources and Services Administration, Maternal and Child Health Bureau. “Hawaii – 2024 – III.B. Overview of the State.” Title V Information System. <https://mchb.tvisdata.hrsa.gov/Narratives/Overview/55b1857c-5786-45c3-901c-ee0fca78c901>.

<sup>5</sup> Rural Health Information Hub. 2024. “Rural Health Disparities.” <https://www.ruralhealthinfo.org/topics/rural-health-disparities>.

<sup>6</sup> Queen’s Medical Center. “Emergency Services.” <https://www.queens.org/locations/hospitals/qmc/services/emergency/>.

frequent cancellations and delays, therefore resulting in cancelled appointments with their back-to-back scheduled patients and unnecessary time at the airport.

Typically, Hawai'i residents do not have NEMT benefits through their insurance, or are significantly undercovered. Medicaid is one of the only insurers that fully covers NEMT; those without Medicaid are often left to pay for all transportation-related costs. These costs are often burdensome for those whose income is too high to qualify for Medicaid but too little to be able to afford direct transportation costs and related costs. In addition to expensive flight costs for neighbor island residents, patients also have incurred costs for ground transportation, food, and lodging while on O'ahu. While these incurred costs may be covered by Medicaid plans generally, other insurance plans have yet to cover these types of transportation-related costs.

MF routine care services and delivery is highly limited in rural areas of Hawai'i (Lāna'i mothers are unable to give birth in a medical setting on island except for rare emergency situations), with many specialists only residing on the island of O'ahu and some on the island of Maui. High-risk pregnancies are highly encouraged to relocate to O'ahu or Maui, otherwise they might have to be medevacked during labor. In addition, given the limited prenatal services, many pregnant women forgo early and adequate prenatal care when pregnant or receive care from a PCP as opposed to an OB specialist. In Hawai'i, pregnant women are covered under Medicaid plans for up to 12 months after birth or pregnancy termination. However, for those that are forced to relocate to another island to complete their pregnancy, lodging and other costs are not covered by all insurances, with the expenses falling on the patient.

It is clear that rural residents in Hawai'i face unique transportation challenges including long EMS response times, limited trauma and maternity care facilities, unreliable NEMT, and inadequate insurance coverage for travel-related expenses. Addressing these transportation barriers will require multi-faceted policy options that improve EMS and air transport infrastructure, improve NEMT processes and increase airline reliability, expand insurance coverage for NEMT, enhance MF care access, and invest in telehealth services to reduce the need for travel.

## Introduction

Access to transportation is a critical social determinant of health, particularly in rural communities where distance and infrastructure challenges often limit healthcare access. In Hawai‘i, where many residents live on remote islands, transportation barriers significantly impact health outcomes by affecting many areas, including emergency medical services (EMS), non-emergency medical transportation (NEMT), and insurance coverage for travel-related healthcare costs. Rural residents frequently face long travel times, high financial burdens, and unreliable airline services when seeking essential and specialized care, particularly for maternal-fetal (MF) health needs.

This literature review examines the intersection of transportation and travel access on rural health in Hawai‘i, highlighting the ways in which these challenges contribute to disparities in healthcare access.

## Literature Review

Hawai‘i is composed of eight separate islands, some of which are quite small (i.e., the populations of Moloka‘i and Lāna‘i are 7,404 and 3,193, respectively<sup>7</sup>). Certain critical healthcare services are primarily located only on the most populous island of O‘ahu. In Hawai‘i, when compared to urban areas, rural areas have worse overall health outcomes,<sup>8</sup> higher rates of mortality,<sup>9</sup> and higher shortages of primary and specialty healthcare providers.<sup>10</sup>

Anecdotally, residents in Hawai‘i often hear reports of patients and health providers facing challenging situations with regard to transportation and travel access and health care, particularly in rural areas. News articles abound with heartbreaking stories of the impacts that limited transportation and travel access have had on patients and providers. For example, some recent news articles have been titled as follows: “*Hawaii’s Struggle To Provide Health Care For Rural Islands Nearly Turned Tragic For This Expectant Mom*” (Honolulu Civil Beat),<sup>11</sup> “*Unreliable Transportation Decreases Dental Services*” (The Molokai Dispatch),<sup>12</sup> “*Transportation Tribulation*” (Ka Wai Ola),<sup>13</sup> and “*[Airline] Flight Disruptions Highlight Service Vulnerabilities.*” (Honolulu Star Advertiser).<sup>14</sup>

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<sup>7</sup> Hawaii Visitors and Convention Bureau. “Eight Major Islands.” *Hawaii Visitors and Convention Bureau*. <https://www.hvcb.org/school-report/eight-major-islands/>.

<sup>8</sup> University of Hawai‘i Economic Research Organization. Rural Health Disparities in Hawai‘i. Honolulu: University of Hawai‘i, August 2024. <https://uhero.hawaii.edu/wp-content/uploads/2024/08/RuralHealthDisparitiesInHawaii.pdf>

<sup>9</sup> Ibid.

<sup>10</sup> Hawai‘i/Pacific Basin Area Health Education Center. 2024. *Hawai‘i Physician Workforce Assessment 2024 Annual Report*. John A. Burns School of Medicine, University of Hawai‘i at Mānoa. [https://ahec.hawaii.edu/\\_docs/2024-physician-workforce-report.pdf](https://ahec.hawaii.edu/_docs/2024-physician-workforce-report.pdf).

<sup>11</sup> Lyte, Brittany. “Hawaii’s Struggle To Provide Health Care For Rural Islands Nearly Turned Tragic For This Expectant Mom.” Honolulu Civil Beat, June 18, 2023.

<https://www.civilbeat.org/2023/06/hawaiis-struggle-to-provide-health-care-for-rural-islands-nearly-turned-tragic-for-this-expectant-mom/>.

<sup>12</sup> Chung, Boki. “Unreliable Transportation Decreases Dental Services.” The Molokai Dispatch, August 2, 2023. <https://themolokaidispatch.com/unreliable-transportation-decreases-dental-services/>.

<sup>13</sup> Fernandez-Akamine, Puanani. “Transportation Tribulation.” Ka Wai Ola, July 1, 2023. <https://kawaiola.news/cover/transportation-tribulation/>.

<sup>14</sup> Schaefer, Allison. 2025. “Mokulele Flight Disruptions Highlight Service Vulnerabilities.” Honolulu Star-Advertiser, January 16, 2025. <https://www.staradvertiser.com/2025/01/16/hawaii-news/mokulele-flight-disruptions-highlight-service-vulnerabilities/>.

Over the course of this project, four topic areas emerged as key categories in the conversations and research: EMS, NEMT, insurance coverage, and MF health, in addition to other topics woven through these areas, such as telehealth and workforce shortages. These four main themes were created deductively and were informed by site visits and community meetings, field observations, and in-depth research of existing literature and data.

The following sections provide context for the challenges faced by rural communities with regard to transportation and travel access within the categories outlined above—EMS, NEMT, and insurance coverage—with a focus on MF health woven through each category. A further literature review of telehealth can be found in Part 4 of this report series. Each category gives an overview of the challenges at a national level, then delves into issues specific to Hawai‘i.

We incorporated further details on MF care throughout this project as it is a critically important service with regard to rural health across the nation. There were over 37.9 pregnancy-related deaths per 100,000 in U.S. rural areas in 2020, compared to 31.2 deaths per 100,000 in micropolitan areas.<sup>15</sup> Rural women have higher rates of maternal morbidities such as acute renal failure, pulmonary edema, and sepsis compared to urban areas, and the gap continues to grow over time.<sup>16</sup> These health outcomes are due in part to lack of access to MF care in rural areas, requiring increased travel for access to care, which can be dangerous to both mother and fetus, as well as being costly and overwhelming for the mother. When transportation access is limited, appointments might be skipped, delayed, or eliminated entirely, which can lead to negative and costly outcomes such as postpartum depression, premature births, and increased maternal morbidity and mortality. At this time, about half of rural counties in the U.S. do not have access to local hospital obstetric (OB) services, as rural hospitals with OB services continue to close their doors across the country.<sup>17</sup>

In Hawai‘i, MF healthcare access is an important issue, as 23.4% of women in the state have no birthing hospital within 30 minutes of where they live, compared to less than 10% nationally.<sup>18</sup> Additionally, over 22% of those in need of such services have either inadequate or no access at all to prenatal care, compared to less than 15% nationally.<sup>19</sup> The small neighbor island of Lāna‘i has no birthing facility, and almost all complex cases across other neighbor islands must be transported via airlines or emergency air evacuation to O‘ahu or Maui,<sup>20</sup> or, if necessary, transferred to a hospital in the continental United States.

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<sup>15</sup> Centers for Disease Control and Prevention (CDC). “Pregnancy Mortality Surveillance System.” [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](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).

Katy Backes Kozhimannil, Julia D. Interrante, Carrie Henning-Smith, and Lindsay K. Admon

<sup>16</sup> Admon, Lindsay K., Henning-Smith, Carrie, Interrante, Julia D., Kozhimannil, Katy Backes. “Rural-Urban Differences In Severe Maternal Morbidity And Mortality In The US, 2007–15.” *Health Affairs* 38, no. 12 (December 2019): 798–805. <https://doi.org/10.1377/hlthaff.2019.00805>.

<sup>17</sup> Rural Health Information Hub. “Maternal Health.” <https://www.ruralhealthinfo.org/topics/maternal-health>

<sup>18</sup> March of Dimes. “Where You Live Matters: Maternity Care in Hawaii.” 2023.

<https://www.marchofdimes.org/peristats/assets/s3/reports/mcd/Maternity-Care-Report-Hawaii.pdf>.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

## Emergency Medical Services (EMS)

In the United States, access to EMS (including ground and air ambulances) depends greatly on where someone lives. Those in rural areas of the country often experience higher delays in transportation and care for emergency medical situations.<sup>21</sup> A 2017 study evaluating emergency services in rural areas of the United States found that in the first 24 hours after an injury requiring emergency transportation, rural patients experienced higher mortality rates compared to their urban counterparts.<sup>22</sup> This disparity in time required for EMS units to reach the scene of the emergency has a significant impact on the rates of survival.<sup>23</sup> In general, data shows that shorter travel times to care are associated with improved outcomes for patients that required emergency care.<sup>24</sup>

Access to and distance from major trauma centers is another significant divide in emergency services between rural and urban areas. Less than 30% of rural patients needing life-saving medical treatment are initially transported to major trauma centers, compared to almost 90% of urban patients, as indicated by 911 calls.<sup>25</sup> On average in the United States, the time from a 911 call to the arrival of EMS to the scene is seven minutes; however, for rural areas, this time jumps to 14 minutes, and one in every 10 calls takes 30 minutes.<sup>26</sup> These data illustrate that for rural patients, EMS is not as adequate when compared to urban areas, and change is needed to provide more timely healthcare access.

### *EMS in Hawai‘i*

The geographic context in which emergency services operate in the state of Hawai‘i is critical to understanding the needs of the population. There are seven Hawaiian islands inhabited by people. Of those, only one island (O‘ahu) has a Level 1 Trauma Center (The Queen’s Medical Center), indicated by the red dot in Figure 1. Patients on neighbor islands who require care at a Level 1 Trauma Center must be medically evacuated by air to O‘ahu. Currently, most inter-facility aeromedical emergency transports are conducted by Hawai‘i Life Flight (HLF), a private for-profit air ambulance organization.

The State of Hawai‘i hosts one of the only 911 EMS and Trauma Systems in the country that does not have a state-funded Emergency/Trauma Transfer Center that ensures patients receive emergency transport between facilities. This type of centralized emergency medical operations communication center is a vital part of any EMS system. Instead, in Hawai‘i,

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<sup>21</sup> Newgard, Craig D., Robert Fu, Edward Bulger, Brian Johnson, James Smith, and Laura Adams. “Evaluation of Rural vs. Urban Trauma Patients Served by 9-1-1 Emergency Medical Services.” *JAMA Surgery* 152, no. 1 (2017): 11–18. <https://doi.org/10.1001/jamasurg.2016.3329>.

<sup>22</sup> Ibid.

<sup>23</sup> He, Zhi, Xueqin Qin, Yufeng Xie, and Jian Guo. “Service Location Optimization Model for Improving Rural Emergency Medical Services.” *Transportation Research Record* 2672, no. 32 (2018): 83–93. <https://doi.org/10.1177/0361198118794431>.

<sup>24</sup> Clark NM, Hernandez AH, Bertalan MS, et al. Travel time as an indicator of poor access to care in surgical emergencies. *JAMA Netw Open*. 2025;8(1):e2455258. doi:10.1001/jamanetworkopen.2024.55258

<sup>25</sup> Newgard, Craig D., Robert Fu, Edward Bulger, Brian Johnson, James Smith, and Laura Adams. “Evaluation of Rural vs. Urban Trauma Patients Served by 9-1-1 Emergency Medical Services.” *JAMA Surgery* 152, no. 1 (2017): 11–18. <https://doi.org/10.1001/jamasurg.2016.3329>.

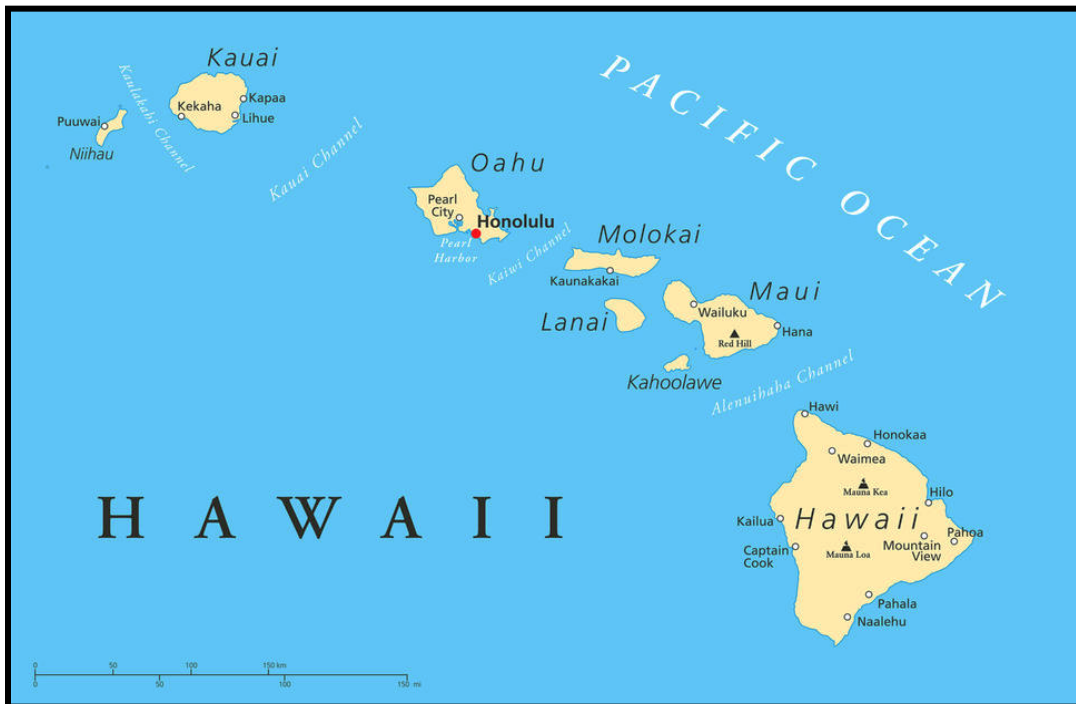
<sup>26</sup> Johnson, Arianna. “Rural EMS Patients Face Worse Health Care – And Too Many Sirens, Study Finds.” *Forbes Innovation*, February 13, 2024. <https://www.forbes.com/sites/ariannajohnson/2024/02/13/rural-ems-patients-face-worse-health-care-and-too-many-sirens-study-finds/>.

hospitals and private air medical companies coordinate transfers, which ultimately results in less streamlined communication.

Currently, each county operates 911 systems differently. For Maui County, there is a cost-sharing agreement between HI DOH and the county to contract with REACH Air Medical Services, a private air ambulance company, to provide emergency helicopter aeromedical ambulance transport services for Maui County. Honolulu County is serviced by HLF but does not have a specified 911 helicopter response. This means ground ambulances are first to the scene for 911 calls. This often results in delays transporting critical injured patients from the scene of injury or acute illness to the final trauma level hospital. Hawai'i County Fire Department operates one 911 helicopter, but this is often not in service due to crew and staff shortages. Hawai'i County is also serviced by HLF, but only for inter-facility transfers. Kauai County does not have an aeromedical 911 provider, so almost all 911 calls are responded to by ground ambulances and then subject to inter-facility transfer if a higher level of care is needed.

The Hawai'i State Department of Transportation (HI DOT) also interacts with Hawai'i's EMS systems. While HI DOT is not a direct provider of emergency medical services, its Airports Division plays a key enabling role in supporting inter-island air ambulance operations such as through: facilitating emergency landing access and prioritization at rural airports, coordinating with HI DOH and HLF for logistical needs and airport operations, and investing in infrastructure to accommodate additional or future EMS providers.

Figure 1: Level 1 Trauma Center Location in Hawai'i<sup>27</sup>



*Red dot in Honolulu represents the location of Level 1 Trauma Center*

<sup>27</sup> National Institute of Standards and Technology (NIST). "Hawaiian Islands." 2025. <https://www.nist.gov/image/hawaiian-islands>.

## Inter-island Emergency Transport and Air Ambulance Providers

HLF operates both fixed wing and rotor wing ambulances, and has vehicles stationed on all islands except for Lāna‘i. However, only Hawai‘i Island and O‘ahu have multiple vehicles stationed on-island.<sup>28</sup> This leads to issues experienced with surge capacity, for if two critical injuries happen on the same island, the second patient must wait for the first to return, which can take hours and delay critical care. There have been multiple attempts in recent years to contract with additional air ambulance providers, but none have come to fruition at this time.

The reliance on a single provider of air ambulances for inter-facility transports limited capacity of air vehicles in Hawai‘i. This limited capacity may translate to a lack of available air ambulances when higher needs occur.<sup>29</sup> Such limited capacity was amplified after a tragic accident in December 2022, when a HLF air ambulance crashed on a flight from Maui to Hawai‘i Island, killing the pilot and two healthcare providers. After the crash, HLF grounded all planes and temporarily stopped services. The Army National Guard and Coast Guard were called in to provide emergency medical air transportation in the meantime.<sup>30</sup> Currently, the National Guard can still be activated as a stopgap measure in case of dire emergencies, although this is an expensive and inefficient system to implement.

Additional strain on inter-facility transports is due to the State of Hawai‘i being a Certification of Need (CON) state for EMS inter-facility transports, meaning that formal state approval is needed for organizations to operate EMS inter-facility transport services, ensuring that such services are deemed necessary before being established or expanded. This has also caused issues with bringing in competitors into the market to assist with non emergency transports and inter-facility transports.

Section §11-72-17 of the Hawai‘i Revised Statute (HRS) states that adequate EMS service would constitute the average response time for an air or ground ambulance in Hawai‘i being: urban (10 minutes); urban/rural (15 minutes); and rural (20 minutes).<sup>31</sup> In 2024, Senator Ronald Kouchi of the Hawai‘i State Legislature introduced SB3126, a bill that would create a partnership between HI DOH and the counties of Hawai‘i, Kaua‘i, and Maui to share the costs of purchasing and operating helicopters capable of inter-island emergency medical transportation.<sup>32</sup> While the bill did not pass, proponents have shared the need for such a program given the challenges that come from just one air ambulance provider and limited capacity.<sup>33</sup>

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<sup>28</sup> Hawaii Life Flight. *Hawaii Life Flight*. <https://www.hawaiilifeflight.com/locations>

<sup>29</sup> Lyte, Brittany. "Hawaii's Struggle to Provide Health Care for Rural Islands Nearly Turned Tragic for This Expectant Mom." *Honolulu Civil Beat*, June 18, 2023.

<https://www.civilbeat.org/2023/06/hawaiis-struggle-to-provide-health-care-for-rural-islands-nearly-turned-tragic-for-this-expectant-mom/>.

<sup>30</sup> Star-Advertiser Staff. 2022. "U.S. Coast Guard Responding to Report of Downed Aircraft in Maui Channel." *Honolulu Star-Advertiser*, December 15, 2022.

<https://www.staradvertiser.com/2022/12/15/breaking-news/u-s-coast-guard-responding-to-report-of-downed-aircraft-in-maui-channel/>.

<sup>31</sup> Hawai‘i State Department of Health. "Emergency Medical Ambulance Services." *Emergency Medical Services & Injury Prevention System Branch*, 1985.

<https://health.hawaii.gov/ems/home/chapter-72-state-comprehensive-ems-systems-rules-and-regulations/subchapter-3-system-component-standards/emergency-medical-ambulance-services/>.

<sup>32</sup> Hawaii State Legislature. "SB 3126 (2024)." *Hawaii State Legislature Archives*.

[https://www.capitol.hawaii.gov/session/archives/measure\\_indiv\\_Archives.aspx?billtype=SB&billnumber=3126&year=2024](https://www.capitol.hawaii.gov/session/archives/measure_indiv_Archives.aspx?billtype=SB&billnumber=3126&year=2024).

<sup>33</sup> DeMasters, Tiffany. "State Legislature Discusses Funding Air Ambulance Program." *Kaua‘i Now*, March 17, 2024.

<https://kauainownews.com/2024/03/17/state-legislature-discusses-funding-air-ambulance-program/#:~:text=The%20new%20>.

## EMS and Primary Care

The need for adequate air ambulance services is amplified by the lack of adequate primary care in rural areas. Currently, there is a shortage of over 160 full-time equivalent primary care providers in the state of Hawai‘i,<sup>34</sup> with those in rural areas facing the most severe consequences of those shortages. When rural areas lack sufficient access to clinical care, public health services, and primary care physicians (PCPs), the role and importance of emergency services becomes significantly amplified. PCPs are crucial for providing routine and preventive healthcare, managing chronic conditions, and addressing non-life-threatening medical issues promptly. The scarcity of PCPs in rural areas exacerbates several healthcare challenges for patients, but also puts a large burden on the few available local PCPs as they must care for a larger number of patients and also provide non-primary care services. Emergency services in rural areas must often fill the gap left by the inadequate primary care infrastructure. Residents may experience delays in receiving essential medical attention for conditions that, if left untreated, could escalate into emergencies. Conditions such as diabetes or hypertension require ongoing management and monitoring, which PCPs and other primary care providers typically provide through regular check-ups and consultations. Without access to these services, individuals may neglect their health until symptoms worsen, potentially leading to emergency situations that require prompt intervention by EMS, further emphasizing the need for a robust EMS system for these underserved areas.

## Intra-island Emergency Services

In 1978, the Hawai‘i State Legislature enacted legislation mandating the HI DOH to establish and oversee EMS across the state.<sup>35</sup> Licensing of EMS personnel operating ambulances is managed by the Hawai‘i Department of Commerce and Consumer Affairs (DCCA), while the Hawai‘i Medical Board defines practice scopes, levels, and required supervision.<sup>36</sup> HI DOH’s EMS and Injury Prevention Systems Branch is required by statute to provide EMS education curricula for licensure and continuing medical education (CME), designate and certify trauma and specialty centers, license ambulances, oversee communications, coordinate 911 emergency transportation contracts, and facilitate emergency medical and critical care services.<sup>37</sup> They are also required to maintain the EMS Electronic Patient Care Record (ePCR) / Electronic Health Record system for all 911 EMS providers.

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<sup>34</sup> University of Hawaii. *Physician Workforce Annual Report 2023*.

[https://www.hawaii.edu/govrel/docs/reports/2023/act18-sslh2009\\_2023\\_physician-workforce\\_annual-report\\_508.pdf](https://www.hawaii.edu/govrel/docs/reports/2023/act18-sslh2009_2023_physician-workforce_annual-report_508.pdf).

<sup>35</sup> Hawaii Department of Health, Emergency Medical Services Division. “§11-71-8 Development Criteria and Plans.” *State Comprehensive EMS Systems Rules and Regulations*.

<https://health.hawaii.gov/ems/home/chapter-72-state-comprehensive-ems-systems-rules-and-regulations/subchapter-2-system-development-criteria-administration-and-components/%C2%A711-71-8-development-criteria-and-plans/>.

<sup>36</sup> “State of Hawaii: A Reassessment of Emergency Medical Services.” October 18, 2024. National Highway Traffic Safety Administration.

<https://health.hawaii.gov/opppd/files/2021/02/NHTSA-Report-with-letter.pdf>

<sup>37</sup> *Ibid*.

Under statutory authority (321-223, HRS), HI DOH is empowered to administer and maintain the state's comprehensive EMS system.<sup>38</sup> Statewide ambulance services are contracted for 911 Advanced Life Support Services, with single providers designated per county:

1. City and County of Honolulu: City and County of Honolulu EMS
2. County of Hawai‘i: Hawai‘i County Fire Department
3. County of Kaua‘i: International Life Support Inc. (American Medical Response)
4. County of Maui (serving Maui, Lāna‘i and Moloka‘i): International Life Support Inc. (American Medical Response)<sup>39</sup>

These contracts ensure full cost recovery for the contracted providers, with Hawai‘i employing a billing and collection system for all emergency ambulance transports based on a state-mandated fee schedule. The state also mandates a unified pre-hospital electronic patient care reporting system to streamline medical data management across EMS providers.<sup>40</sup>

In rural areas of Hawai‘i, the distribution of ambulances often aligns with the geographical spread of population centers. Distribution of ambulances are ultimately approved by the Hawai‘i State Legislature, although the counties collaborate with HI DOH and others to request ambulances in certain areas. The current geographic distribution of ambulances in Hawai‘i presents significant challenges due to the absence of proximate emergency transportation services in certain remote areas. Consequently, ambulances must often traverse extended distances to reach patients in more rural and remote areas and then return back to medical centers, potentially compromising the timeliness and effectiveness of emergency medical care delivery and related patient outcomes.

For instance, in certain expansive regions on O‘ahu such as Wai‘anae, Nānākuli, and Kahuku (spanning Sunset Beach to Kāne‘ohe Town), each area is served by only one ambulance. This limited coverage extends along entire coastlines, exacerbating delays in emergency response when ambulances are engaged in active calls. Moloka‘i and Lāna‘i each only have a single EMS resource covering 911 and inter-facility transports on-island.<sup>41</sup> The absence of additional ambulances stationed nearby as backup, which may be due to funding limitations, further underscores the vulnerability of these communities to prolonged response times during critical incidents.

## **EMS and Maternal-Fetal (MF) Health**

MF care delivery is highly limited in rural areas of Hawai‘i, with many specialists only residing on the island of O‘ahu and some on the island of Maui. For pregnancies that are deemed high-risk, relocation from neighboring islands to O‘ahu or Maui for a period of time is often

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<sup>38</sup> Hawaii State Legislature. “§ 321-223. Definitions.” *Hawaii Revised Statutes*.  
[https://www.capitol.hawaii.gov/hrscurrent/Vol106\\_Ch0321-0344/HRS0321/HRS\\_0321-0223.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol106_Ch0321-0344/HRS0321/HRS_0321-0223.htm).

<sup>39</sup> “State of Hawaii: A Reassessment of Emergency Medical Services.” October 18, 2024. National Highway Traffic Safety Administration.  
<https://health.hawaii.gov/opppd/files/2021/02/NHTSA-Report-with-letter.pdf>

<sup>40</sup> *Ibid.*

<sup>41</sup> *Ibid.*

necessary to receive adequate care. For those that do not relocate, or for births that have unexpected complications, emergency air evacuation to O‘ahu or Maui must often take place during labor to ensure proper care can be taken for the pregnant woman and her baby.

If the nearest hospital for a patient does not provide labor and delivery services, a pregnant woman will often need to travel to a different area to give birth. In urban areas, the travel time to a hospital offering these services is typically under 20 minutes. However, in rural areas, it is often at least 30 minutes, and can frequently exceed 50 minutes.<sup>42</sup> Communities lacking local maternity care services face increased risks of complications and mortality for both mothers and babies.<sup>43</sup> Additionally, when maternity care is not available locally, women are less likely to receive adequate prenatal and postpartum care.<sup>44</sup>

On the islands of Moloka‘i and Lāna‘i in particular, MF care is characterized by limited local resources and OB infrastructure. With only one hospital serving each island (with the hospital on Lāna‘i being designated a Critical Access Hospital [CAH] and not providing any OB services), the range of maternity services available on these islands is constrained. On Moloka‘i, the one primary hospital, Moloka‘i General Hospital, can accommodate uncomplicated vaginal deliveries but does not offer advanced procedures such as cesarean sections (C-sections) and is limited in its capacity to handle high-risk or complicated deliveries. Expectant mothers with medical complications or those requiring specialized care must relocate to a larger medical center on O‘ahu or Maui, which involves navigating unreliable air transport, limited lodging options,<sup>45</sup> and being away from family, children, and work.

On Lāna‘i, any pregnant woman wanting to deliver in a medical setting must travel off-island. This requirement can create a precarious situation for pregnant women, particularly in emergencies or when early intervention is critical. It is important to compare these challenges on the neighbor islands of Hawai‘i for pregnant women with similar challenges in rural areas of the United States. For pregnant women in the continental United States, staying at home in rural areas, while having its own risks, means that any complications require getting in the car and driving to the nearest medical facility; however, for those on the neighbor islands of Hawai‘i, the situation becomes more complex as air travel is usually necessary. Such challenges are compounded by the issues of capacity for air ambulances in Hawai‘i, as discussed above. Often, when multiple cases require medevac concurrently on a neighbor island, triage usually puts trauma patients and other high-risk medical emergencies ahead of those in labor requiring transport to O‘ahu or Maui. Additionally, the receiving hospital must have a bed available for the patient, which is not always the case immediately. This means that often pregnant women must wait for medical evacuation to O‘ahu or Maui,<sup>46</sup> sometimes waiting over two hours.

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<sup>42</sup> Center for Healthcare Quality and Payment Reform. “Addressing the Crisis in Rural Maternity Care.” April 2024. [https://ruralhospitals.chqpr.org/downloads/Rural\\_Maternity\\_Care\\_Crisis.pdf](https://ruralhospitals.chqpr.org/downloads/Rural_Maternity_Care_Crisis.pdf).

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> Lyte, Brittany. “Hawaii’s Struggle to Provide Health Care for Rural Islands Nearly Turned Tragic for This Expectant Mom.” *Honolulu Civil Beat*, June 18, 2023.

<https://www.civilbeat.org/2023/06/hawaiis-struggle-to-provide-health-care-for-rural-islands-nearly-turned-tragic-for-this-expectant-mom/>.

<sup>46</sup> Ibid.

Figure 2: Table Reflecting RHRPC Analysis of The Current State of OB Services on Hawaiian Islands

	Island	Vaginal Delivery	Assisted Vaginal Delivery	Cesarean Birth	Vaginal Birth After Cesarean (VBAC)
Service Available					
	Kaua'i	✓	✓	✓	
	O'ahu	✓	✓	✓	✓
	Maui	✓	✓	✓	
	Moloka'i	✓			
	Lāna'i				
	Hawai'i	✓	✓	✓	

### Non-Emergency Medical Transportation (NEMT)

NEMT is a term utilized to define services that transport patients for medically necessary healthcare in a non-emergent setting. These services could include situations such as travel from a patient's home to a clinic for an annual checkup, patient transfers from hospital to hospital, air travel for specialist appointments, and more.

In the United States in 2017, 5.8 million people (1.8% of the U.S. population) delayed receiving medical care due to a lack of transportation.<sup>47</sup> Transportation challenges in the rural contiguous United States can resemble those found in urban areas, yet they present unique difficulties due to the reliance on limited infrastructure such as rural roads and highways. Unlike urban residents who often have access to a variety of transportation options, including rideshare services and public transit, rural residents predominantly rely on personal vehicles of their own or those owned by friends or family, or on limited public transportation services that may not adequately serve their needs. This heavy reliance on personal vehicles can be particularly challenging for individuals who do not own a car, or for those who do not have access to friends or family who can help with transport.<sup>48</sup> That reliance is also challenging for those that cannot access reliable, affordable public transportation, such as elderly residents, those with disabilities, or those living in remote areas.<sup>49</sup>

<sup>47</sup> Wolfe, Mary, Noreen McDonald, and Gregory Holmes. "Transportation Barriers to Health Care in the United States: Findings From the National Health Interview Survey, 1997–2017." *American Journal of Public Health* 110 (2020): e1–e8. <https://doi.org/10.2105/AJPH.2020.305579>.

<sup>48</sup> National Transportation Research Nonprofit. "Rural Connections: Challenges and Opportunities in America's Heartland." Washington, DC: National Transportation Research Nonprofit, May 22, 2019. [https://tripnet.org/wp-content/uploads/2019/08/Rural\\_Roads\\_TRIP\\_Report\\_May\\_2019.pdf](https://tripnet.org/wp-content/uploads/2019/08/Rural_Roads_TRIP_Report_May_2019.pdf).

<sup>49</sup> National Transportation Research Nonprofit. "Rural Connections: Challenges and Opportunities in America's Heartland." Washington, DC: National Transportation Research Nonprofit, May 22, 2019. [https://tripnet.org/wp-content/uploads/2019/08/Rural\\_Roads\\_TRIP\\_Report\\_May\\_2019.pdf](https://tripnet.org/wp-content/uploads/2019/08/Rural_Roads_TRIP_Report_May_2019.pdf).

Individuals with developmental and intellectual disabilities (DD/ID) often face significant barriers to accessing medical care due to transportation challenges, including the need for inter-island travel to reach specialized services, the lack of accessible transportation for those with physical disabilities, and the difficulties that individuals with intellectual disabilities may experience in navigating complex transit systems, all of which place substantial logistical and financial burdens on individuals and their caregivers. Similarly, elderly individuals, particularly those in rural areas, face transportation-related obstacles due to mobility limitations, a lack of specialized transit services, and the complexities of coordinating long-distance travel for medical care, further exacerbating healthcare access disparities.

Lower population density in rural areas often results in decreased ridership for fixed public transit routes and a smaller tax base to support the maintenance and repair of transportation systems. Additionally, the lack of investment in rural infrastructure, combined with the increasing use of rural roads over time, has had a detrimental impact on transportation safety.<sup>50</sup> According to the U.S. Department of Transportation's Federal Highway Administration, in 2017, approximately 40% of rural roads were deemed “inadequate for current travel,” and nearly 50% of rural bridges over 20 feet long were classified as “structurally deficient.”<sup>51</sup>

The absence or unavailability of transportation in rural areas can lead to reduced use of healthcare services, irregular medical care, and missed appointments, especially among individuals from lower socioeconomic backgrounds.<sup>52</sup>

Across the nation, telehealth has rapidly expanded across a variety of sectors. Telehealth can include 1) video conferencing and consultations, 2) remote patient monitoring, and 3) tele-imaging. Real-time telehealth involves phone or video calls, which can replace many face-to-face interactions. 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 interact with specialized physicians who may not be available locally and allows clinics to prioritize in-person access for those with acute needs.<sup>53</sup> Additionally, hybrid approaches with in-person and telehealth visits can be equally effective to in-person visits without compromising the quality of care.<sup>54</sup> Part 4 of this report series will delve into how telehealth, specifically related to MF care, can have specific impacts on improving access to care regarding transportation barriers.

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<sup>50</sup> Rural Health Information Hub. “Transportation Barriers to Health Care.” *Rural Health Information Hub*. <https://www.ruralhealthinfo.org/toolkits/transportation/1/barriers>.

<sup>51</sup> Federal Highway Administration. “Planning for Rural Areas: Page 3.” *Federal Highway Administration*. [https://www.fhwa.dot.gov/planning/publications/rural\\_areas\\_planning/page03.cfm](https://www.fhwa.dot.gov/planning/publications/rural_areas_planning/page03.cfm).

<sup>52</sup> Syed, Sarah T., Brian S. Gerber, and Laurie K. Sharp. “Traveling Towards Disease: Transportation Barriers to Health Care Access.” *Journal of Community Health* 38, no. 5 (October 2013): 976–93. <https://doi.org/10.1007/s10900-013-9681-1>.

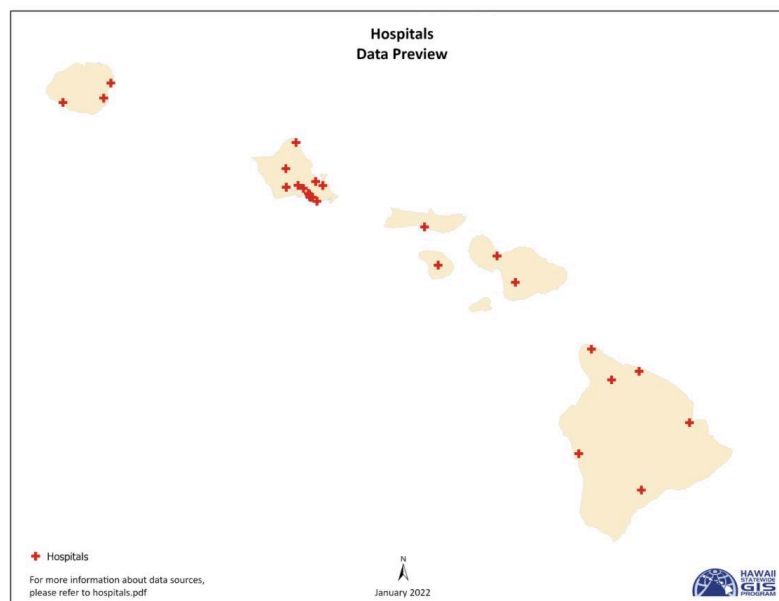
<sup>53</sup> Udegbe, Beverly C., Mark A Clapp, Allison S. Bryant “Disparities from bedside to “websites”: barriers to achieving equity in telemedicine in obstetrics.” *AJOG Global Reports* 3, no. 1 (Jan 2023): 100159. <https://doi.org/10.1016/j.xagr.2022.100159>

<sup>54</sup> 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>

## *NEMT in Hawai‘i*

There are a limited number of medical facilities in the state of Hawai‘i. Figure 3 shows the geographic distribution of hospitals across the islands. In most rural and remote areas of the state, patients must travel long distances to access care. For example, some residents on Hawai‘i Island travel over 60 miles, equating to over a 175-minute drive on winding mountain roads, to receive routine dialysis treatment, oftentimes multiple times per week. If those patients travel via public transportation, the route can take over three hours, and travelers must leave home by 6:30am and do not return home until 6:00pm. This can have a large impact on their work and/or personal life.

Figure 3: Hospitals in Hawai‘i<sup>55</sup>



Many services that would often be considered routine or expected at an urban hospital or clinic are not present in some of the more remote islands in Hawai‘i or may take months to access. For example, on Moloka‘i, such services as a variety of higher-end dental services and MRI screenings are not available on-island, and patients must travel to O‘ahu or Maui via the only commercial air service available, Mokulele Airlines. If Mokulele Airlines cancels or delays a flight, patients must often reschedule their appointments with their healthcare provider, which may take weeks or even months. On other islands, appointments for certain providers—such as specialists in cardiology, neurology, and dermatology—can take several months due to the state’s significant health workforce shortages.<sup>56,57</sup> This shortage is particularly severe in rural and

<sup>55</sup> Hawaii State Government. Hospitals in Hawaii [Map]. 2025. <https://files.hawaii.gov/dbedt/op/gis/maps/hospitals.jpg>.

<sup>56</sup> Hawai‘i/Pacific Basin Area Health Education Center. 2024. Hawai‘i Physician Workforce Assessment 2024 Annual Report. John A. Burns School of Medicine, University of Hawai‘i at Mānoa. [https://ahec.hawaii.edu/\\_docs/2024-physician-workforce-report.pdf](https://ahec.hawaii.edu/_docs/2024-physician-workforce-report.pdf).

<sup>57</sup> Healthcare Association of Hawaii. “Hawaii Healthcare Workforce Initiative 2024 Report.” 2024. <https://www.hah.org/hwi>.

neighbor island communities, where recruiting and retaining healthcare professionals is challenging due to high living costs, geographic isolation, and limited professional development opportunities. As a result, patients often experience long delays for essential diagnostic tests, follow-up care, and treatment, which can lead to worsened health outcomes and increased reliance on emergency services.

### **Air Travel from Rural Neighbor Islands**

Patients who need to travel for routine appointments from the neighbor islands of Hawai‘i to O‘ahu most often need to fly as there is no inter-island ferry system. Flights are expensive (approximately \$120 to \$300) and often unreliable, particularly on Moloka‘i and Lāna‘i, leading to decreased transportation access. There is a limited ferry system from Lāna‘i to Maui, but these ferries are time-consuming. Additionally, there are also limited specialists on Maui compared to O‘ahu. In addition to flight costs and the stresses of airline reliability, patients often have to account for the costs of missed work, child care, elder care, other transportation costs (such as to and from the hospital), any lodging, and travel with a companion.

### ***The Essential Air Service (EAS) Subsidy Program***

The EAS subsidy program is a federal initiative intended to maintain vital air links to small and remote communities across the country, such as the neighbor islands of Hawai‘i. Enacted as part of the Airline Deregulation Act of 1978, which significantly liberalized the airline industry, the EAS program was designed to ensure that communities with a lack of sufficient commercial air service due to this deregulation could remain connected to the national transportation network.<sup>58</sup> Eligibility criteria for EAS subsidies include distance from larger hub airports and minimum passenger traffic requirements, as outlined in the Code of Federal Regulations (CFR) Title 14, Section 271.100 et seq.

The EAS program is operated by the U.S. DOT’s Office of Aviation Analysis, which administers the selection of air carriers through a competitive bidding process. Airlines bid to provide scheduled air service to eligible communities, detailing the service they propose to offer and the subsidy amount required to offset operational costs not covered by passenger fares. Airlines can only bid if they can prove that service to the airport is not financially sustainable without help from the subsidy program. The DOT evaluates these proposals based on factors such as service reliability, frequency of flights, and community benefits.<sup>59</sup> Once selected, airlines receive federal subsidies to bridge the gap between operating expenses and revenue from passenger fares. These subsidies cover essential costs like fuel, maintenance, and crew wages, ensuring that airlines can feasibly provide regular service to these underserved areas. Federal

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<sup>58</sup> Scarano, R. Michael et al. “Federal Preemption of State Regulation Over Air Ambulances.” *Air Medical Journal*, Volume 28, Issue 2, 77 - 83. [https://www.airmedicaljournal.com/article/S1067-991X\(08\)00272-1/fulltext](https://www.airmedicaljournal.com/article/S1067-991X(08)00272-1/fulltext).

<sup>59</sup> U.S. Department of Transportation. 2024. “Essential Air Service.” <https://www.transportation.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service>.

statute requires participating EAS airlines to fulfill contractual obligations, including maintaining minimum service levels, meeting performance metrics, and regulating profits to continue receiving subsidies.<sup>60</sup>

Currently, EAS subsidies are in place for three airports in Hawai‘i: Kamuela (Hawai‘i Island), Hāna (Maui), and Kalaupapa (Moloka‘i).<sup>61</sup> For patients on Moloka‘i, Kalaupapa is a restricted airport that serves only the Hansen’s Disease community of Kalaupapa. As such, the subsidy on Moloka‘i does not address medical care transportation needs for the majority of the Moloka‘i population.

Mokulele Airlines is the sole airline provider on Moloka‘i (save for Pacific Air Charters offering chartered flights), and, until the recent expansion of Lāna‘i Air,<sup>62</sup> was the only public air transport provider on Lāna‘i as well. This situation has been the case since 2020, when Hawaiian Airlines shut down its ‘Ohana by Hawaiian service to those islands due in part to the COVID-19 pandemic. Mokulele Airlines has faced numerous criticisms and challenges over the years, the most severe and common being service reliability.<sup>63</sup> The airline’s reliability, in terms of fleet readiness, flight schedules, and cancellations, has been called into question by local residents repeatedly over the years. Unreliability of airlines can disrupt travel plans for passengers relying on consistent service, as well as disrupt the schedule of providers who are waiting for patients to arrive for their appointments.<sup>64</sup>

The frequent cancellation and delay of flights by Mokulele Airlines has resulted in significant challenges for patients needing to attend medical appointments. Patients often schedule these appointments months in advance, and when flights are canceled or delayed with only a day's notice or shorter, it severely disrupts the patient's ability to make their appointments and access timely healthcare services, as specialists on O‘ahu and Maui are often fully booked out for weeks or months.

The provision of airline services to the Moloka‘i and Lāna‘i communities faces two primary constraints. The first is airport infrastructure limitations and runway capacity, necessitating the use of smaller aircraft. While the existing aircraft are adequate in size, their operations are significantly affected by weather conditions, busy travel seasons, and mechanical issues (including timeliness of receiving and installing replacement parts). For example, Mokulele Airlines recently grounded all of its flights for several days due to “maintenance,” leaving residents who needed to travel off-island to take boats to other islands where more flights were available.<sup>65</sup> The proposition of expanding infrastructure or improving runways to

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<sup>60</sup> U.S. Department of Transportation. 2024. “Essential Air Service.” <https://www.transportation.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service>.

<sup>61</sup> LNY airport on Lāna‘i qualified for EAS in 1983, and there were active conversations in March 2024 about seeking EAS, but to date (May 2025) no proposals have been submitted to DOT.

<sup>62</sup> Lāna‘i Air was established in 2018, and is self-titled a “Luxury Air Service” that also provides public charter flights. These flights are often double the cost of competing airlines, and are widely inaccessible for the majority of residents.

<sup>63</sup> Cluett Pactol, Catherine. “Mokulele Airlines Grounds Flights, Leaving Moloka‘i Residents Scrambling for Boat Rides.” Hawai‘i Public Radio, January 17, 2025. <https://www.hawaiipublicradio.org/local-news/2025-01-17/mokulele-airlines-grounds-flights>.

<sup>64</sup> Huff, Daryl. “Airline Struggling to Fulfill Its Role as Molokai’s Lifeline for Health Care.” *Hawai‘i News Now*, May 16, 2024. <https://www.hawaiinewsnow.com/2024/05/16/airline-struggling-fulfill-its-role-molokais-lifeline-health-care/>.

<sup>65</sup> Cluett Pactol, Catherine. “Mokulele Airlines Grounds Flights, Leaving Moloka‘i Residents Scrambling for Boat Rides.” Hawai‘i Public Radio, January 17, 2025. <https://www.hawaiipublicradio.org/local-news/2025-01-17/mokulele-airlines-grounds-flights>.

accommodate larger aircraft might entice larger air service providers such as Hawaiian Airlines to return to providing services, as their fleet does not include those smaller planes.

The second constraint is the market size on Moloka‘i and Lāna‘i. The market is constrained by limited demand, primarily driven by small populations. While tourism boosts demand for air transport on these islands (Lāna‘i, in particular), there are still challenges in sustaining regular and economically viable air service to these communities at a larger and more consistent scale.

In general, the larger neighbor islands such as Maui, Kaua‘i, and Hawai‘i Island have more airline options, such as through Hawaiian Airlines and Southwest Airlines.

### **Provider Travel to Rural Areas**

On all neighbor islands, and especially Moloka‘i and Lāna‘i, hospitals and/or clinics contract with specialists on O‘ahu and Maui to fly to their islands to provide care. These travel costs are almost always borne by the receiving facility, and costs can be in the hundreds of thousands of dollars annually for hospitals and clinics operating on thin margins. On Lāna‘i, the majority of clinical providers are not based on-island and travel to the island on a rotating basis to provide care. For patients, this may mean that they do not have to travel off-island for certain care. However, this also means that transportation (and often housing) for the health providers themselves is an important determinant of health for those communities – and a high cost to the contracting hospitals and clinics.

Providers almost always travel commercial airlines for these rotations, and for those going to Moloka‘i or Lāna‘i, they must also deal with frequent cancellations and delays. If a provider is scheduled to see patients back-to-back for an entire day, and the flight is delayed three hours, those patients often do not receive care, the traveling provider has wasted valuable time sitting at an airport, and offices/hospitals must spend extra time ensuring all patients are rescheduled, whether that be waiting until the next time a provider comes or scheduling transportation to O‘ahu. Local providers on Moloka‘i or Lāna‘i often have to find ways to accommodate those patients, such as fitting them into their already-filled schedules to provide care until the off-island provider/specialist is able to rearrange their schedule for travel.

### **NEMT and MF Care**

Transportation for MF care is a documented issue across the country, and can oftentimes significantly impact access to care for this population. Increasing transportation access to perinatal and postpartum care for mothers is linked to improving health outcomes, and has been well established as a method for increasing access to specialized care.<sup>66</sup> A recent study in Ohio

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<sup>66</sup> DeSisto, Carla L., Reena Oza-Frank, David Goodman, Elizabeth Conrey, and Cynthia Shellhaas. “Maternal Transport: An Opportunity to Improve the System of Risk-Appropriate Care.” *Journal of Perinatology* 41, no. 9 (2021): 2141–46. <https://pubmed.ncbi.nlm.nih.gov/33547406/>.

found that 13.9% of all pregnancy-related deaths in the state from 2010-2016 would have been preventable with improved maternal transportation.<sup>67</sup>

Maternal transport issues include significant geographic disparities in access to MF care, which have been worsened by the increasing closures of maternity units in rural hospitals. Less than seven percent of all OBs in the United States practice in a rural area, and the majority of U.S. counties do not have access to inpatient obstetric services, which further exacerbates the need for transportation for services.<sup>68,69,70</sup> This trend has created considerable barriers for women throughout their pregnancy, childbirth, and postpartum periods. In rural areas, the challenge is compounded by the long distances and extended travel times required to reach available healthcare facilities. These factors can make it exceptionally difficult for those living in remote locations to receive timely and adequate maternity care, further exacerbating healthcare challenges.<sup>71</sup>

The burden of traveling to maternity care facilities for women in rural areas is linked to lower rates of prenatal care, as well as higher incidences of preterm births, low birth weights, and neonatal mortality.<sup>72</sup> A study conducted in rural Kansas found that greater travel distances to access maternity care were associated with decreased prenatal care uptake.<sup>73</sup> This effect was especially noticeable among women with lower incomes, who encounter additional challenges such as difficulties with transportation and childcare.<sup>74</sup> Additionally, a recent Canadian study showed that rural women about to give birth and needing to travel to access maternity services had higher rates of poor perinatal outcomes and adverse health outcomes for newborns.<sup>75</sup> Rural residents in the United States have an almost 10 percent higher probability of severe maternal morbidities and mortality when compared to urban residents.<sup>76</sup>

In Hawai‘i, NEMT for MF care remains a pressing issue. Overall, over 87% of pregnant women in the United States received early and adequate primary care.<sup>77</sup> That number goes down to 63.2% in Hawai‘i, and as low as 57% for those in more rural counties such as Hawai‘i County.<sup>78</sup> Additionally, on some rural islands, the prenatal care that is delivered is often done so by a PCP, as opposed to an OB specialist.

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<sup>67</sup> Ibid.

<sup>68</sup> Changing rural demographics, July 29, 2013. National Conference of State Legislatures. [http://www.ncsl.org/documents/agri/Rural\\_Demographics07-13.pdf](http://www.ncsl.org/documents/agri/Rural_Demographics07-13.pdf). Accessed October 24, 2019

<sup>69</sup> ACOG Committee Opinion No. 586: “health disparities in rural women.” *Obstet Gynecol.* 2014; 123(2 Pt 1): 384-388.

<sup>70</sup> Hung P, Henning-Smith CE, Casey MM, Kozhimannil KB. “Access to obstetric services in rural counties still declining, with 9 percent losing services, 2004–14.” *Health Aff (Millwood)*. 2017; 36(9): 1663-1671.

<sup>71</sup> Hung, Peiyin, Marion Grangerm, Nansi Bonghossian, Jiani Yu, Sayward Harrison, Jihong Lio, Berry A. Campbell, Bo Cai, Chen Liang, and Xiaoming Li. “Dual Barriers: Examining Digital Access and Travel Burdens to Hospital Maternity Care Access in the United States, 2020.” *The Milbank Quarterly* 101, no. 4 (2023): 1327–47. <https://doi.org/10.1111/1468-0009.13024>.

<sup>72</sup> Grzybowski, Stephen, Kathryn Stoll, and Jennifer Kornelsen. “Distance Matters: A Population-Based Study Examining Access to Maternity Services for Rural Women.” *BMC Health Services Research* 11 (2011): 147. <https://doi.org/10.1186/1472-6963-11-147>.

<sup>73</sup> Kennedy, Mary, Kelly Kelly, and Christine Lemke. “The Adequacy of Prenatal Care in Rural Kansas Related to Distance Traveled.” *Kansas Journal of Medicine* 15, no. 3 (2022): 437–40. <https://doi.org/10.17161/KJM.VOL15.18523>.

<sup>74</sup> Ibid.

<sup>75</sup> Grzybowski S, Stoll K, Kornelsen J. “Distance Matters: a Population Based Study Examining Access to Maternity Services for Rural Women.” *BMC Health Serv Res.* 2011 Jun 10;11:147. doi: 10.1186/1472-6963-11-147. PMID: 21663676; PMCID: PMC3126704.

<sup>76</sup> Kozhimannil, Katy Backes, Julia D. Interrante, Carrie Henning-Smith, and Lindsay K. Admon. “Rural-Urban Differences in Severe Maternal Morbidity and Mortality in the US, 2007–15.” *Health Affairs* 38, no. 12 (2019): 2077–85. <https://doi.org/10.1377/hlthaff.2019.00805>.

<sup>77</sup> Health and Human Development Workgroup. “Birth and Maternity.” *Health and Human Development Workgroup*. <https://go.hawaii.edu/3a8>.

<sup>78</sup> Health and Human Development Workgroup. “Birth and Maternity.” *Health and Human Development Workgroup*. <https://go.hawaii.edu/3a8>.

As previously mentioned, the islands of Moloka‘i and Lāna‘i face particularly challenging obstacles to receiving NEMT MF care. While perinatal care is an option on both islands, it is limited, and for patients that would like to establish care with the same doctor they plan to deliver with, they must travel to a different island in most scenarios. In some rural parts of the island of Maui, patients must drive over three hours to receive prenatal care, which often means appointments go unattended. On Moloka‘i and particularly on Lāna‘i, patients with high-risk pregnancies must relocate to either O‘ahu or Maui, forced to be away from their family, other children, support systems, jobs, community, and their ways of life.

On Hawai‘i Island, all obstetric services are provided in the two major cities (Kona and Hilo), and those residents in between are often faced with difficult choices, such as whether to go to work or make a perinatal appointment, or whether to risk their car breaking down on a two-hour drive there and back to the appointment. As noted previously, a journey on public transportation in rural communities, when available, can be long and difficult. Some non-profit organizations have begun offering mobile clinic services for such services, filling gaps in service across the island.

## Insurance Coverage

Insurance coverage for medically-related transportation is an important contributor to whether health services are accessible for patients or not. Health insurance coverage for NEMT in the United States varies drastically based on payer, state of residence, employment status, income, age, and more. Nationwide, in 2022, 92.1% of people had health insurance coverage, with 65.6% of people being insured by a private plan, versus having public coverage.<sup>79</sup> Specifically, 54.5% of the population had insurance through their employer, while 18.8% were covered under Medicaid, 18.7% by Medicare, 9.9% through “direct-purchase”<sup>80</sup> coverage, 2.4% through TRICARE, and one percent through the U.S. Department of Veterans Affairs (VA).<sup>81</sup>

While the vast majority of Americans have health insurance coverage, NEMT coverage is low. Currently, state Medicaid programs are the only insurers required by law to provide NEMT benefits to their beneficiaries.<sup>82</sup> Each state provides these Medicaid NEMT benefits differently, but they generally include transportation services for medically necessary healthcare needs, provided through taxis, buses, rideshare services and more.<sup>83</sup> It should be noted that even Medicaid NEMT benefits often do not provide coverage for travel companions, extra nights of

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<sup>79</sup> U.S. Census Bureau. “Income and Poverty in the United States: 2022.” *U.S. Census Bureau*. <https://www.census.gov/library/publications/2023/demo/p60-281.html#:~:text=In%202022%2C%2092.1%20percent%20of,91.7%20percent%20or%20300.9%20million>.

<sup>80</sup> “Direct Purchase” coverage includes insurance that you buy directly from an insurance company or through a state or federal marketplace.

<sup>81</sup> U.S. Census Bureau. “Income and Poverty in the United States: 2022.” *U.S. Census Bureau*.

<https://www.census.gov/library/publications/2023/demo/p60-281.html#:~:text=In%202022%2C%2092.1%20percent%20of,91.7%20percent%20or%20300.9%20million>.

<sup>82</sup> U.S. Government. *Code of Federal Regulations, Title 42, Section 431.53: Assurance of Transportation*. Washington, DC: Government Publishing Office, 2023. <https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-C/part-431/subpart-B/section-431.53>

<sup>83</sup> Medicaid and CHIP Payment and Access Commission (MACPAC). “June 2021 Report to Congress on Medicaid and CHIP.” *Medicaid and CHIP Payment and Access Commission*. June 2021.

<https://www.macpac.gov/wp-content/uploads/2021/06/June-2021-Report-to-Congress-on-Medicaid-and-CHIP.pdf>.

lodging, and other related expenses such as childcare, missed work, and other costs associated with travel.

The VA does provide many similar NEMT services based on eligibility requirements, and some Medicare Advantage (MA) plans are increasingly covering NEMT benefits for beneficiaries; however, the majority of private insurers and Medicare payers (including traditional Medicare) do not cover NEMT in any capacity.<sup>84</sup>

The importance of this NEMT benefit is found in the utilization data found in a 2021 report to Congress from the Medicaid and CHIP Payment and Access Commission (MACPAC).<sup>85</sup> MACPAC found that between three and four million Medicaid enrollees utilized their NEMT benefits annually from 2018-2021, which equates to roughly five percent of all Medicaid beneficiaries utilizing NEMT benefits each year.<sup>86</sup> However, it should be noted that this number is likely a significant underestimate of the total number, as not all NEMT services were reported in their data collection, and not all states were included in the estimate. The MACPAC report also found that specific demographic groups utilized NEMT services more, specifically including groups with higher health needs. Those with physical and mental health conditions such as chronic kidney disease (CKD) and end-stage renal disease (ESRD), as well as those with opioid and substance use disorder and those with DD/ID, all utilized NEMT at higher rates than average.<sup>87</sup>

### ***In Hawai‘i - Health Insurance Coverage for NEMT***

In Hawai‘i, 50% of individuals have insurance through employer-based plans, while 21% are covered under Medicaid and 17% are covered under Medicare (Figure 4).<sup>88</sup> The majority of state residents do not have coverage, or are significantly undercovered, for NEMT as Medicaid is one of the only insurers that fully covers NEMT. While some MA plans and private insurers cover limited NEMT, those without Medicaid are often left to pay for all transportation related to medical care. These costs are often burdensome for those whose income is too high to qualify for Medicaid but too little to be able to afford direct transportation costs and related costs, such as child care and missed work.

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<sup>84</sup> Centers for Medicare & Medicaid Services. "Non-Emergency Medical Transportation (NEMT) Report to Congress: 2018-2021." *Centers for Medicare & Medicaid Services*, 2018. <https://www.medicaid.gov/medicaid/benefits/downloads/nemt-rtc-2018-2021.pdf>.

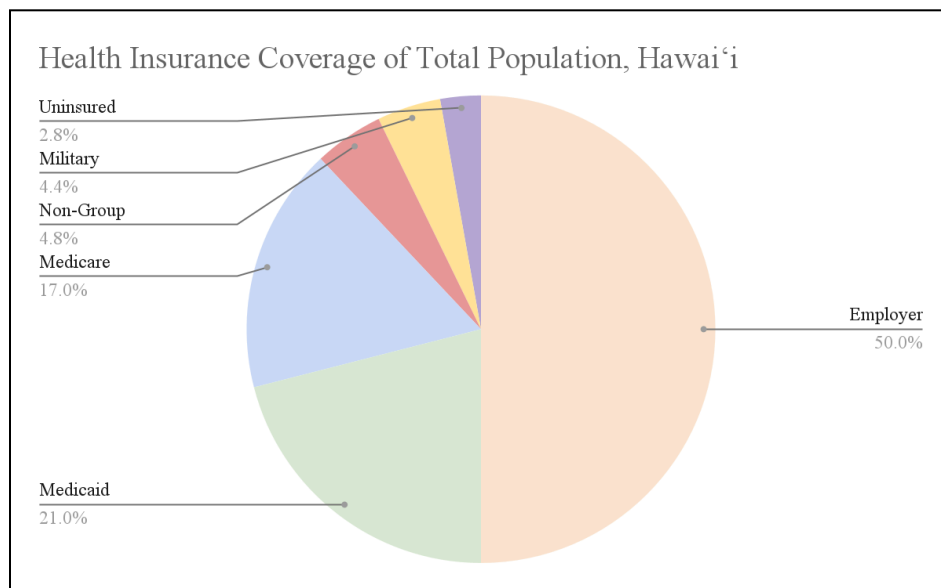
<sup>85</sup> Ibid.

<sup>86</sup> Ibid.

<sup>87</sup> Ibid.

<sup>88</sup> Kaiser Family Foundation. "Election 2024: State Health Care Snapshots." KFF, September 30, 2024. <https://www.kff.org/statedata/election-state-fact-sheets/hawaii/>.

Figure 4: Health Insurance Coverage of Total Population, Hawai‘i as of June 2024<sup>89</sup>



Limited insurance coverage for transportation has an even greater effect when travel to another island is necessary. The cost of round-trip flights from the neighbor islands to O‘ahu or Maui range from \$120 to \$300, and this is only one of many costs associated with inter-island NEMT.<sup>90</sup> Other incurred costs also include the cost of transportation to and from the departing airport and transportation to and from the medical test, appointment, or operation back to the airport, as well as the opportunity costs of child care and missed work.

Generally, Medicaid plans in Hawai‘i provide comprehensive coverage for NEMT; however, coverage of caretakers traveling with patients and lodging for overnight stays is a frequent concern for beneficiaries in the state, as coverage for these additional benefits is often on a case-by-case basis. If the medical appointment requires an overnight stay, lodging is an additional cost, as well as travel to and from the lodging. Oftentimes, those traveling have higher health needs, meaning a caretaker must travel with them, doubling many of the associated costs. Medicaid determines coverage of lodging and caretaker travel on a case-by-case basis.

Medicaid in Hawai‘i is provided through five different managed care organizations (MCOs): AlohaCare, HMSA, ‘Ohana Health Plan, Kaiser Permanente, and United Healthcare.<sup>91</sup> These MCOs all operate their own Medicaid plans, each with separate contracts with transportation providers. However, all five are required to cover flights for medically necessary events, public transportation, taxis, handivans, handicabs, wheelchairs, and stretcher vehicles. The health plans have the option to reimburse family and friends who are able to provide ground transportation for Medicaid beneficiaries.

<sup>89</sup> Kaiser Family Foundation. “Election 2024: State Health Care Snapshots.” KFF, September 30, 2024. <https://www.kff.org/statedata/election-state-fact-sheets/hawaii/>.

<sup>90</sup> Laferriere, Nicole R., Malia Saruwatari, Xander L. Doan, Kevin B. Ishihara, David P. Puapong, Sarah M. Johnson, et al. “Telehealth Delivery of Outpatient Pediatric Surgical Care in Hawai‘i: An Opportunity Analysis.” *Hawai‘i Journal of Health & Social Welfare* 79, no. 5 Suppl 1 (2020): 19–23.

<sup>91</sup> Hawai‘i Med-QUEST Division. “Health Plans.” Med-QUEST Division. <https://medquest.hawaii.gov/content/medquest/en/members-applicants/already-covered/health-plans.html>.

As noted, Medicaid plans often contract with third parties for transportation services, meaning that timeliness of securing services is another concern that routinely affects beneficiaries. Medicaid plans often require days or weeks of advanced notice to book transportation services depending on the type of transportation needed. This notice is required as the plans must authorize, schedule, and book with the third-party providers to secure services. However, despite the advanced notice, there are often delays in providing patients with knowledge of their forthcoming transportation plans. These delays often leave patients without information or knowledge of their transportation plans until right before their appointments, leading to confusion and frustration for travelers, as well as the need to cancel or reschedule health appointments at times. Adding to that confusion is that oftentimes insurers ask the provider to communicate with the patient, rather than directly communicating with the patient, leading to delays in information sharing related to travel plans. There are also additional costs to rural provider offices who often have hired staff to manage this complex process. Additionally, when securing insurance reimbursement for NEMT, the staff of the patient's provider has to prove there is not a (participating) provider to take care of the patient on the neighbor island, therefore necessitating the travel. This increases the time burden on rural providers, rather than the insurance company having that information on available providers on-hand.

The reliability of third-party transportation providers is also often called into question. For neighbor islands, and particularly in rural and remote areas of those islands, transportation service networks are limited. Patients with booked medical taxis through Medicaid in these areas oftentimes wait hours to receive transportation from the healthcare facility back to their home.

Overall, Medicaid in Hawai'i provides a much-needed safety net service for rural patients. Innovative and unique solutions to address barriers to access care are at the forefront of Medicaid policy in Hawai'i, and coverage of NEMT by Medicaid is generally more expansive than other insurers.

### **Health Insurance Coverage for NEMT and MF Care**

In the United States, all Medicaid plans in every state are required to cover pregnancy and childbirth-related health issues, even if the pregnancy starts before the coverage starts.<sup>92</sup> Health insurance plans purchased on the Health Insurance Marketplace must also cover pregnancy and childbirth-related health issues, as MF care services are considered essential health benefits, meaning all marketplace and Medicaid health plans in the country must cover them.<sup>93</sup> However, whether all aspects of transportation for accessing those services are covered is a separate issue, and one that is not consistent across plans.

In Hawai'i, pregnant women can be covered under Medicaid plans for up to 12 months after birth or pregnancy termination. However, for those that are forced to relocate to another

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<sup>92</sup> Centers for Medicare & Medicaid Services (CMS), "*Pregnancy and Newborn Coverage in the Marketplace and Medicaid*", available at: <https://www.cms.gov/marketplace/technical-assistance-resources/pregnancy-newborn-coverage.pdf>

<sup>93</sup> HealthCare.gov. "What if I'm Pregnant or Plan to Get Pregnant?" *HealthCare.gov*.

<https://www.healthcare.gov/what-if-im-pregnant-or-plan-to-get-pregnant/#:~:text=Health%20coverage%20if%20you're,plans%20cover%20pregnancy%20and%20childbirth.>

island to complete their pregnancy, lodging and other expenses are not covered by all MCOs, meaning costs are often borne by the patient, family, and friends. These added expenses, not covered by insurance, can lead to care being delayed for longer periods of time, which leads to the decreased rate of pregnant women in Hawai‘i receiving early and adequate prenatal care (30% lower rate of prenatal care utilization in Hawai‘i compared to the national rate<sup>94</sup>).

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<sup>94</sup> Health and Human Development Week (HHDW). “Birth & Maternity.” *Health and Human Development Week*. <https://go.hawaii.edu/3a8>.

## Conclusion

The findings of this literature review highlight the critical role that transportation plays in healthcare access and health outcomes in rural Hawai‘i. The challenges faced by rural communities—including long EMS response times, unreliable NEMT, inadequate insurance coverage for travel-related expenses, and limited trauma and maternity care facilities—create significant barriers to timely and equitable healthcare. For many rural residents, particularly those living on neighbor islands, access to essential and specialized care requires long-distance travel, which can be costly, time-consuming, and unreliable. These transportation challenges contribute to missed appointments, delayed treatments, poor health outcomes, and increased reliance on emergency services. MF health is particularly affected, as pregnant women in rural areas struggle to access prenatal, labor, and delivery services, often requiring relocation or emergency transport.

Addressing these transportation barriers will require multi-faceted policy solutions that improve EMS and air transport infrastructure, improve NEMT processes and increase airline reliability, expand insurance coverage for NEMT, enhance MF care access, and invest in telehealth services to reduce the need for travel. Future research and stakeholder input (see Part 2 of the report series) will be critical in shaping policies that bridge the gap between healthcare and transportation access, ensuring that rural communities in Hawai‘i receive the care they need when they need it. Telehealth is also a critical component of addressing transportation challenges. Parts 1, 2, and 3 of this report series focus on specific transportation solutions, while Part 4 delves into the impact of telehealth on these issues, specifically regarding MF health.



**The Impacts of Transportation and Travel Access  
on Rural Health in Hawai‘i**  
*Part 2: Stakeholder Insights*

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

**June 25, 2025**

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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 (HI 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.<sup>1</sup> Upstream policy decisions in this area significantly impact downstream health outcomes.<sup>2</sup> 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 like 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.

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<sup>1</sup> 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>.

<sup>2</sup> Ibid.

## Executive Summary

Transportation plays a critical role in whether a person is able to obtain necessary healthcare services.<sup>3</sup> Lack of transportation can lead to delayed medical care, financial burdens, and poor health outcomes.<sup>4</sup> The purpose of this qualitative project was to identify the specific transportation-related barriers to accessing healthcare services in Hawai‘i, with an emphasis on rural communities and maternal health, and identify potential policy solutions to address these challenges.

Forty key informants were identified through purposive sampling,<sup>5</sup> which was dependent on their occupation, experiences with healthcare and/or transportation, and their relationship to RHRPC. Additional key informants were recruited to participate in interviews using a snowball sampling technique.<sup>6</sup> These interviewees included healthcare providers, transportation service providers, insurance providers, government representatives, and community-based organizations.

Key informants were asked to participate in semi-structured individual interviews to better understand barriers to care and identify potential policy solutions to improve transportation and travel access in rural areas. RHRPC developed a series of interview questions that were utilized to identify transportation effects on health/healthcare access, barriers to achieving adequate transportation solutions, and the different needs between urban and rural areas. The interviews were conducted between January and July 2024. Following completion of the interviews, interview notes taken by RHRPC team members were condensed and used to conduct a rapid qualitative analysis.<sup>7</sup> This methodology was utilized as it ensures quick, efficient, and accurate interpretations of the data, therefore not delaying actionable results, potential policy solutions, and stakeholder buy-in.

Results were categorized into four themes which were informed by site visits and community meetings, field observations, and in-depth research of existing literature and data. The four themes included EMS, NEMT, insurance coverage, and maternal fetal health. Additional topics that were discussed that did not fit into the four themes included telehealth, provider burden, and workforce shortages.

Interviewees noted the scarcity of emergency vehicles and helicopters/airplanes leading to unavailable and untimely EMS/transport, inadequate emergency care during transport, EMS overutilization and emergency room (ER) capacity, staffing issues (pilots, EMS crew, and ER), insurance reimbursement issues, problems with having a singular helicopter EMS company

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<sup>3</sup> Syed, Samina T., Ben S. Gerber, and Lisa K. Sharp. "Traveling Towards Disease: Transportation Barriers to Health Care Access." *Journal of Community Health* 39, no. 1 (December 13, 2014): 976–993. <https://doi.org/10.1007/s10900-013-9681-1>.

<sup>4</sup> Wolfe, Mary K., Noreen C. McDonald, and G. Mark Holmes. "Transportation Barriers to Health Care in the United States: Findings From the National Health Interview Survey, 1997–2017." *American Journal of Public Health* 110, no. 6 (June 2020): 815–822. <https://doi.org/10.2105/AJPH.2020.305579>.

<sup>5</sup> Palinkas, Lawrence A., Sarah M. Horwitz, Carla A. Green, Jennifer P. Wisdom, Naihua Duan, and Kimberly Hoagwood. "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research." *Administration and Policy in Mental Health and Mental Health Services Research* 42, no. 5 (September 2015): 533–544. <https://doi.org/10.1007/s10488-013-0528-y>.

<sup>6</sup> Oregon State University, Division of Research and Innovation. "Snowball Sampling." <https://research.oregonstate.edu/ori/irb/policies-and-guidance-investigators/guidance/snowball-sampling>.

<sup>7</sup> Prevention Research Center at UMass Chan Medical School, "Rapid Qualitative Analysis." <https://www.umassmed.edu/prc/resources/rapid-qualitative-analysis/>.

(Hawai'i Life Flight), and expenses to fly patients inter-island or across the U.S.-Affiliated Pacific Islands.

Interviewees also discussed the reliability and consistency issues with Mokulele Airlines (flight delays/cancellations make it difficult to reschedule healthcare appointments/surgeries and can put a strain on healthcare providers and patients alike), additional transportation challenges facing people in poverty and experiencing homelessness, public transportation unreliability or inaccessibility for rural communities, limited on-ground transportation options for neighbor islands residents who visit O'ahu or Maui for healthcare services, and air and on-ground transportation scheduling issues.

Interviewees shared information about complex insurance protocols and untimely prior authorization requirements leading to difficulty in booking transportation, communication challenges when transportation coordination is outsourced to third parties by insurance companies, and insufficient non-governmental insurance to cover/reimburse transportation costs.

Others discussed the limited access to prenatal services and the challenge of having to fly to O'ahu or Maui for care and delivery, high-risk pregnancies requiring relocation to O'ahu or Maui via EMS/helicopter, women in poverty and mothers experiencing homelessness facing additional transportation challenges, and overall limited OB care access across the state.

Throughout the interviews, it was found that without access to reliable transportation, rural residents across the state will continue to face delayed diagnoses, inconsistent treatment, and higher rates of preventable health complications, therefore leading to increased health disparities. Interviewees determined that public health strategies and innovative policy options must address these disparities through interventions that integrate healthcare access with transportation infrastructure planning.

## **Introduction**

Transportation access plays a critical role in healthcare delivery, particularly in rural areas of Hawai‘i, where geographic isolation and infrastructure limitations create significant barriers to medical services.

Part 1 of this series presented a literature review that examined the impact of transportation challenges on emergency medical services (EMS), non-emergency medical transportation (NEMT), and insurance coverage, with a particular focus on maternal-fetal (MF) health. Delays in EMS response times, limited trauma centers, and a single emergency air ambulance provider exacerbate disparities in emergency care, while unreliable airline services and high costs make routine medical travel burdensome for rural residents. Many patients, including pregnant women with high-risk conditions, must relocate to O‘ahu or Maui for specialized care, often facing financial hardship and emotional strain. While Medicaid provides some NEMT coverage, private insurance policies frequently do not, leaving many to bear the full cost of inter-island travel, lodging, and caregiving responsibilities. The findings highlight the urgent need for policy solutions to address these challenges.

To better understand specific challenges for rural communities in Hawai‘i related to transportation and travel access, as well as to glean ideas for policy solutions to address these issues, RHRPC met with stakeholders across the state to hear directly about challenges and opportunities.

## **Methodology**

Key informants were asked to participate in semi-structured individual interviews to better understand barriers to care and identify potential policy solutions to improve transportation and travel access in rural areas. RHRPC developed a series of interview questions that were utilized to identify transportation effects on health/healthcare access, barriers to achieving adequate transportation solutions, and the different needs between urban and rural areas.

These questions (see Appendix A) were modified slightly based on the category of the interviewee (i.e., healthcare provider, MF medicine provider, physician, neighbor island organization, transportation provider, public sector organization, and/or insurance organization), and were also refined as interviews were conducted as needs arose, utilizing feedback from our partners and interview experience. The interviews were conducted between January and July 2024.

The interviewees were identified through purposive sampling depending on the interviewee’s occupation, salient experiences with transportation and rural health, and their existing relationship with RHRPC (such as through previous or existing partnerships, or individual connections). The snowball sampling recruitment technique was used in addition to

purposive sampling as many interviewees had several ideas for other stakeholders that should be included.<sup>8,9</sup>

During each interview, thorough field notes were taken in a bullet point format. One RHRPC team member (JD) conducted each interview and asked questions while the other team member(s) (when available) would solely take notes. Direct transcriptions were not created for this research project.

After completing the interview portion of the project, condensing team members' field notes, and discussing the main themes, the RHRPC team began the analysis. A rapid qualitative analysis was the chosen methodology for analysis. A rapid qualitative analysis is a specific research method that facilitates quick and efficient results utilizing the existing data,<sup>10</sup> which were stakeholder interview notes. Rapid qualitative analyses are designed to avoid excessive time consumption, which would delay actionable results.<sup>11</sup>

Through a random number generator, the interviews were split evenly into three sections (A, B, and C). Sections were then assigned to each of the three team members who did the coding analysis (JD, MH, KK). Each coder thoroughly read through all the field notes taken from each semi-structured interview in their section.

Four main themes were identified in the early interview stages: EMS, NEMT, Insurance Coverage, and MF Health. These themes were informed by site visits and community meetings, field observations, and in-depth research of existing literature and data. During each reviewer's read-through, the coder highlighted findings that fit into one of the four main themes.

In addition, if there were other relevant findings that did not fit into one of the four main themes, the coder would flag the excerpt to identify the subcategory during a full team meeting after coding was completed. Several new subcategories were thereby identified, including: telehealth, public transportation, mobile care, homelessness/poverty, primary and preventive care, provider travel, provider burden/burnout, workforce shortages, caregiver(s), airlines, prenatal care, patient barriers, data collection, and weather. Subcategories did not explicitly fit into one of the four main themes, but were important and could potentially play a role when discussing possible cross-cutting solutions.

After completing the full analysis with color coding, each coder would then identify one quote or main idea for each of the four themes (if applicable) that was derived from the interview. The coder would then insert the quote/main idea from the interview into the coding matrix (Figure 5: Rapid Qualitative Analysis Matrix (Transportation and Healthcare) - RHRPC Example). After all the coders had completed their sections, the team met to compare matrices and come to concordance on any discrepancies. After the meeting, a final matrix was created to demonstrate all the main quotes, ideas, and sub-themes. The final matrix was also broken down by stakeholder type (e.g., healthcare providers, neighbor island organizations, transportation

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<sup>8</sup> Oregon State University. 2010. "Snowball Sampling."

<https://research.oregonstate.edu/ori/irb/policies-and-guidance-investigators/guidance/snowball-sampling>.

<sup>9</sup> Stratton, SJ. "Purposeful Sampling: Advantages and Pitfalls." *Prehospital and Disaster Medicine*. 2024;39(2):121-122. doi:10.1017/S1049023X24000281

<sup>10</sup> Prevention Research Center at UMass Chan Medical School, "Rapid Qualitative Analysis."

<https://www.umassmed.edu/prc/resources/rapid-qualitative-analysis/>.

<sup>11</sup> Ibid.

providers, public sector organizations, and insurance providers) to compare and contrast findings among the interviewees.

Figure 5: Rapid Qualitative Analysis Matrix (Transportation and Healthcare) - RHRPC Example

Interviewee	EMS	NEMT	Insurance	MF	Sub-themes
Healthcare Provider (Maternal and Fetal Health Provider)	"There is delayed timing in getting things moving from the planning side, and not enough availability of emergency airplanes and helicopters."	"Personal transportation can be unreliable, and public transportation is not adequate across the entire island."	"Insurance is the biggest issue regarding transportation."  Timely insurance optimization is a problem, they do not authorize and/or book transportation fast enough	Remote monitoring and other telehealth options are the best way to address limited access to MF Care due to transportation issues	Telehealth, Prenatal Care, Workforce Shortage, Public Transportation

### Findings

Forty interviewees participated in this project and were classified under seven different categories as described above. Several interviewees were part of multiple categories and were labeled under each category. The interviewees included 26 healthcare providers, eight MF medicine providers, 10 physicians, six transportation providers, and representatives from 15 neighbor island organizations, six public sector representatives (including governmental representatives), and three insurance organizations. Findings are shared below, by key topic areas of EMS, NEMT, insurance coverage, and MF health.

#### Emergency Medical Services (EMS)

Thirty out of the 40 interviewees discussed EMS. There were several common findings in regard to EMS, including scarcity of emergency vehicles and helicopters/airplanes leading to unavailable and untimely EMS/transport, inadequate emergency care during transport, EMS overutilization and limited emergency room (ER) capacity, staffing issues (pilots, EMS crew, and ER), insurance reimbursement issues, problems with having a singular helicopter EMS company (Hawai'i Life Flight), and expenses to fly patients inter-island or across the U.S.-Affiliated Pacific Islands.

Many participants found issues with the current state of EMS provision in Hawai'i, ranging from county contracts to inter-island transfer systems to private air ambulance companies. Overall, the consensus in these interviews was that there are too many delays in EMS operations, leading to poorer health outcomes.

One respondent said:

*"There is delayed timing in getting things moving from the planning side and not enough availability of emergency airplanes and helicopters."*

*-Maternal health physician*

A focus on air ambulances was a common thread among interviewees. Many participants discussed the critical shortage of air ambulance services, which impacts the timely transport of patients needing urgent care. Hawai'i Life Flight is the primary air ambulance provider, but there are issues with surge capacity, crew fatigue, and mandatory no-fly times due to pilot rest regulations. These factors were mentioned as a reason for delays in transporting patients, especially during surges. Interviewees discussed how those delays directly resulted in worsened health outcomes for those with emergent health issues.

A minority of participants, particularly those on O'ahu, mentioned the challenges that traffic presents for transporting patients via ground ambulance to Honolulu, while others on Hawai'i Island described limited ambulance fleet size, limited number of hospitals, and large travel distances as a barrier to quality care. However, the majority of participants focused on the need to improve inter-island emergency medical transportation.

Interviewees also highlighted significant gaps in public sector funding and infrastructure that affect EMS response times. One state governmental official noted that EMS operations are often underfunded by counties and state agencies, particularly in rural and underserved areas. Funding restrictions limit the number of EMS units and the scope of services available, which means that some regions have fewer ambulances and rely on neighboring areas during high-demand periods.

One interviewee described how these challenges affect residents in American Samoa, a U.S. territory in the Pacific that shares many linkages with Hawai'i. The challenges related to emergency healthcare access there are particularly severe, reflecting issues seen across the U.S.-Affiliated Pacific Islands. Emergency services are limited by the geographic isolation of these islands, where access to advanced care often requires transport to Hawai'i or the U.S. mainland. However, air transportation—essential for critically ill patients—remains costly, infrequent, and constrained by limited emergency air providers, leading to delays in emergency transfers. In cases of medical crises, the lack of nearby specialized facilities means that even non-life-threatening conditions can escalate due to delayed access to care. This interviewee also noted that emergency air services in American Samoa and other Pacific Islands suffer from the same funding and resource limitations seen in Hawai'i's rural islands, where state subsidies are sparse, and local EMS agencies lack the capacity to fully serve isolated communities. One interviewee noted that this highlights the need for federal support in building a coordinated emergency infrastructure that includes subsidized inter-island air transport in jurisdictions that need it, additional funding for EMS units, and workforce incentives to place emergency care providers in these underserved regions.

Some interviewees discussed the issues stemming from a lack of coordination between counties, given that each county operates its own EMS contracts and systems. Some are run by the county fire department, while others are operated by independent contractors or separate EMS departments. This can lead to a lack of synergy between systems and less efficient utilization of funding and resources. One respondent said that:

*“Those in rural areas in neighbor islands can sometimes wait up to two hours for EMS to arrive.”*

*-Rural health provider*

Interviewees also discussed how EMS in Hawai‘i is uniquely challenged by the state’s geographic separation of islands. In particular, transporting patients between islands is costly, often necessitating air travel for advanced care on O‘ahu or Maui. One interviewee pointed out that emergency air services are critical for serious cases but are often hampered by factors such as weather, limited availability of pilots, and high costs. This creates a vulnerability where response times to emergencies on isolated islands can be unpredictable, further exacerbating health risks.

### **Non-Emergency Medical Transportation (NEMT)**

Thirty-nine out of the 40 interviewees discussed NEMT. There were several common findings in regard to NEMT, including: Mokulele Airlines reliability and consistency issues (flight delays/cancellations make it difficult to reschedule healthcare appointments/surgeries and can put a strain on healthcare providers and patients alike), additional transportation challenges facing people in poverty and experiencing homelessness, public transportation unreliability or inaccessibility for rural communities, limited on-ground transportation options for neighbor islands residents who visit O‘ahu or Maui for healthcare services, and air and on-ground transportation scheduling issues.

Interviewees discussed how NEMT in Hawai‘i is essential for access to routine healthcare, preventive services, and continuity of care, especially for populations in rural and remote areas. However, many of the interviewees shared that NEMT in Hawai‘i is unreliable, under-resourced, and often inaccessible to residents of rural and neighbor island communities.

There were a variety of sub-categories found within this theme that were mentioned multiple times by participants, which are shared as follows:

#### ***Public Transportation***

Many interviewees emphasized that limited public transportation infrastructure in rural areas significantly affects residents’ ability to access healthcare, a recurring challenge that clearly

impacted many stakeholder groups. For example, one community organizer noted that on O‘ahu, communities outside of Honolulu such as Waipahu and ‘Ewa face pronounced difficulties with public transportation due to infrequent and unreliable public transit schedules. This challenge is compounded by the long travel times required for patients who depend on buses to reach urban centers like Honolulu for specialized care. For individuals without personal vehicles, this lack of accessible public transit means missed or delayed appointments, which multiple interviewees claimed leads to disruptions in healthcare continuity and worsening health outcomes. One healthcare provider said:

*“Personal transportation can be unreliable, and public transportation is not adequate across the entire island [of O‘ahu].”*

*–Healthcare provider on O‘ahu*

This issue is particularly acute on neighbor islands where public transportation services are sparse or nonexistent. Some Kaua‘i stakeholders, for instance, noted that while public transit serves main towns adequately, it does not extend into the most remote communities, leaving residents who do not own personal vehicles without any viable transportation option at all. Such limited access has a cascading effect, especially for elderly patients or those managing chronic illnesses, as they are unable to attend regular follow-ups or preventive care appointments. One hospital manager highlighted that for some patients, transportation delays are so severe that providers must find alternative solutions, such as organizing volunteer rides or deploying mobile health clinics to bridge the gap.

Interviewees mentioned that another significant barrier relates to the accessibility of public transportation for vulnerable populations, such as those with disabilities or the houseless community. Some interviewees mentioned that Medicaid transportation services for unsheltered patients often fail because many taxi companies refuse to serve individuals without stable addresses, leaving public transit as the only option. However, the physical demands of accessing bus stops—often located far from healthcare facilities—can deter patients who are elderly, disabled, or managing acute illnesses.

These gaps in public transportation not only hinder individual healthcare access but also place a greater strain on emergency services. As one EMS professional noted, when patients cannot rely on public transit for non-urgent care, they often resort to calling emergency services or visiting emergency rooms for issues that could have been managed with routine outpatient care. This misallocation of resources further exacerbates the systemic strain on Hawai‘i’s healthcare infrastructure.

## ***Airline Service***

Interviewees discussed how air travel plays a critical role in healthcare access across Hawai‘i’s islands, especially for patients living on neighbor islands who require specialized care which is often available only on O‘ahu, and sometimes on Maui. However, reliance on airlines as a primary mode of medical transportation introduces significant barriers, including cost, scheduling limitations, and accessibility issues. Many interviewees highlighted the difficulties patients face when depending on commercial airlines for routine and urgent healthcare needs.

One of the most pressing challenges interviewees discussed was the unreliability of inter-island flights. Some airline representatives acknowledged that delays and cancellations, more common with smaller carriers like Mokulele Airlines, have caused patients to miss critical appointments and surgeries. These issues are exacerbated during peak travel times, holidays, or inclement weather, leaving patients stranded or forcing them to reschedule care, sometimes for months. Some patients even resort to what can be dangerous sea travel in small privately-owned boats. Patients traveling for dialysis, prenatal care, or high-risk medical procedures are especially vulnerable to these disruptions.

Another major issue brought up by interviewees was the financial burden of airfare. Medicaid generally covers air transportation for eligible patients, but the booking process often involves third-party agencies, which, as noted by those on the island of Lāna‘i, can be slow, stressful, and inefficient. For patients with Medicare or private insurance, airfare is rarely covered, forcing many to pay out-of-pocket for travel to receive necessary care. Differences in insurance coverage create disparities, as those without the means to afford flights may delay or forego treatment altogether. Additionally, policies requiring advanced booking for insurance covered flights limit flexibility, making it difficult for patients to respond to short-notice appointments or rescheduled procedures.

Accessibility is also a concern. Many interviewees described how small planes used for inter-island travel can be physically challenging for patients with disabilities or mobility issues. Narrow doorways, steep or stepped ramps, and limited space onboard make it difficult for individuals requiring wheelchairs or medical equipment to travel safely. Some airlines offer limited accommodations, but these are not always sufficient or consistently available.

## ***Mobile Care Units***

Interviewees discussed how mobile care units have emerged as an innovative and targeted solution to address transportation barriers, particularly for residents in remote or underserved areas. These units provide healthcare services directly within communities, reducing the need for patients to travel long distances to access care. One care coordinator emphasized the effectiveness of mobile care units in reaching populations that face significant transportation challenges, such as those in rural areas or without reliable personal transportation. This interviewee noted that mobile units have been especially beneficial in delivering basic primary

care, medication delivery, and preventive services, addressing a critical gap in healthcare accessibility. One respondent said:

*“Bring[ing] care to people versus making them travel is more effective.”*

*-Community healthcare provider*

The implementation of mobile care units has also highlighted their potential for addressing healthcare disparities. For example, interviewees mentioned that on Kaua‘i, mobile units funded by federal grants have allowed healthcare providers to bring essential services to remote homesteads and underserved areas. These units not only provide clinical care but also facilitate community engagement and build trust with patients who may otherwise avoid traditional healthcare settings. However, these successes come with limitations. Many programs are constrained by temporary grant funding and logistical challenges, such as staffing shortages and vehicle maintenance.

Mobile care units have also been employed to address emergency needs, such as in the aftermath of the Lahaina wildfires on Maui. Some providers described how mobile clinics played a critical role in delivering urgent care and mental health support to displaced individuals when traditional healthcare facilities were inaccessible. This demonstrates the flexibility and adaptability of mobile units in responding to both routine and crisis healthcare needs.

However, interviewees consistently pointed out that while mobile care units offer a valuable stopgap solution, their long-term sustainability depends on consistent funding and operational support. For instance, participants noted that gas costs for operating these units can exceed \$1,500 weekly, and maintaining vehicles often requires specialized services available only in urban centers. These logistical hurdles have prevented many programs from expanding their reach or maintaining operations over time. Moreover, mobile units are often staffed by a limited number of providers (often the same individuals providing in-office services), which potentially reduces the amount of in-office services. Lastly, there is the potential for a restriction of the scope of services offered due to lack of equipment or licensure.

### ***Provider Burden***

Interviewees discussed how the responsibility of organizing NEMT often falls disproportionately on healthcare providers, creating a significant administrative burden that interferes with their ability to focus on clinical duties. Interviewees across the board highlighted how the inefficiencies and complexities of NEMT coordination consume valuable time and resources, ultimately affecting both providers and patients.

One hospital administrator described how coordinating transportation for patients involves navigating a fragmented system of insurers, third-party transport companies, and

patients themselves, many of whom lack the resources or knowledge to manage their own transportation needs. This process often requires extensive back-and-forth communication to confirm eligibility, schedule rides, and address logistical issues such as timing and accessibility. For example, Medicaid transportation services mandate prior authorization for rides, requiring providers to submit documentation verifying the medical necessity of appointments. This time-consuming process detracts from direct patient care and increases the risk of patients missing appointments due to delayed approvals or logistical mishaps.

In addition to dealing with insurers, providers often face challenges with transportation vendors. As described by an outpatient health care administrator, third-party agencies contracted to arrange transportation can be inefficient, failing to confirm bookings or provide timely updates to patients and providers alike. This unreliability forces providers to step in to resolve issues on short notice, adding to their workload and creating unnecessary stress. Furthermore, smaller, independent transport providers, which are critical in rural areas, may lack the administrative infrastructure to handle the volume of NEMT requests, exacerbating delays.

Several interviewees pointed out that the administrative burden disproportionately affects healthcare staff in rural and underserved areas, where provider resources are already stretched thin. In these settings, a single case manager or office staff member may be responsible for coordinating transportation for dozens of patients, leaving little time for other essential tasks such as care coordination or follow-up. This strain contributes to burnout and job dissatisfaction among healthcare workers, further jeopardizing the quality and availability of care.

## **Insurance Coverage**

Thirty-two out of the 40 interviewees discussed insurance coverage of medically-related transportation. There were several common findings in regard to insurance, including complex insurance protocols and untimely prior authorization requirements leading to difficulty in booking transportation, communication challenges when transportation coordination is outsourced to third parties by insurance companies, and insufficient non-governmental insurance to cover/reimburse transportation costs. Several interviewees suggested improving provider reimbursement in rural communities, the need for insurance companies to take more responsibility in assisting and covering transportation needs for members, and the need to streamline the process for accessing transportation services while improving the reimbursement process. One respondent stated that:

*“Insurance is the biggest issue regarding transportation.”*

*-Rural physician*

According to interviewees, the issues faced by providers and patients regarding insurance reimbursement and coverage for NEMT stemmed from different types of payers, leading to issues in accessing care across rural areas of Hawai‘i.

### *Medicaid/Medicare Coverage*

Interviewees said that while Medicaid provides statutorily-required NEMT benefits for qualifying patients, critical limitations within both Medicaid and Medicare reimbursement pathways create significant barriers to healthcare access, particularly for rural and isolated populations in Hawai‘i. Numerous interviewees highlighted these challenges, with one insurance provider specifically noting that Medicare coverage for NEMT is highly restrictive. Unlike Medicaid, which offers broader transportation benefits, Medicare only covers transportation in narrowly-defined circumstances, such as when deemed medically necessary for dialysis or specific treatments. This leaves many Medicare beneficiaries, often elderly or disabled individuals, without coverage for routine travel to primary care appointments, follow-ups, or specialist visits, forcing them to pay out of pocket or forgo care altogether.

Interviewees said that Medicaid patients, while benefiting from broader coverage of NEMT, still face substantial barriers due to administrative hurdles and geographic constraints. An outpatient health care administrator described how patients requiring flights for medical appointments often encounter delays caused by slow approval processes or third-party booking agencies contracted by Medicaid. These agencies are frequently inefficient, leading to late or incomplete arrangements that jeopardize patients' ability to receive care on time. One participant said:

*“Medicaid covers transportation but uses a third party travel agent, which causes stress and anxiety because patients have no control over their itinerary, and the travel is not booked in a timely manner.”*

*-Rural healthcare provider*

Interviewees shared that patients also face significant gaps in Medicaid coverage for related travel expenses. While Medicaid might cover the cost of a flight to O‘ahu or Maui for a specialist appointment, it can exclude costs for related ground transportation to and from the airport, accommodations for extended overnight stays, travel companions, childcare for parents needing to travel, and other related expenses. This creates a logistical and financial burden on patients who lack the resources to cover these additional costs. Providers reported that such limitations frequently lead to missed appointments and disrupted care continuity, particularly for patients managing chronic conditions that require frequent follow-ups.

Additionally, Medicaid’s prior authorization requirements add to the barriers patients face. One obstetric (OB) physician highlighted instances where pregnant patients with high-risk conditions requiring weekly prenatal visits encountered delays because of prolonged prior authorization processes. These delays not only place patients at risk but also create an additional

administrative burden for providers, who must frequently verify medical necessity and navigate a complex approval system for each transportation request.

Participants also shared that the lack of sufficient transportation providers willing to contract with Medicaid further exacerbates the problem. Many small transport providers are hesitant to participate due to low reimbursement rates and administrative challenges, reducing the availability of NEMT services in rural areas. A health care provider noted that this results in patients being forced to rely on informal arrangements, such as family members or community volunteers, which are not always reliable or sustainable.

### ***Private Insurance Coverage***

Many interviewees discussed how private insurance coverage for NEMT is often even more limited than Medicaid and Medicare, creating significant barriers for patients who rely on private plans to access healthcare services. Many interviewees noted that private insurers often exclude transportation benefits entirely or provide them under restrictive conditions that fail to meet the needs of patients living in rural or isolated areas. This creates disparities, as patients with private insurance are frequently left with fewer covered transportation options compared to those covered by public programs. A respondent stated:

*“Insurers should take more responsibility for transportation and advocating for people’s transportation.”*

*-Healthcare provider on Hawai‘i Island*

One physician highlighted that most private insurance plans in Hawai‘i do not cover transportation for routine or preventive care, leaving patients to bear the full cost of travel. This is particularly challenging for patients on neighbor islands who must travel inter-island for specialized care or diagnostic services. Even when private insurance plans offer limited NEMT benefits, they often require significant out-of-pocket expenses, such as copays or deductibles, which deter patients from using these services.

### **Maternal-Fetal (MF) Health**

Twenty-five out of the 40 interviewees discussed MF health. There were several common findings in regard to MF health, including high-risk pregnancies requiring transport to O‘ahu or Maui via EMS/helicopter, high-risk and rural pregnancies relocating to O‘ahu or Maui to give birth, limited access to prenatal care services leading to the need for EMS, women in poverty and mothers experiencing homelessness facing additional transportation challenges, and limited OB care access across the state. Several interviewees shared that MF health providers have been relying on telehealth to provide services due to the existing transportation issues and that there is

a need to increase doula/community-based programs in rural communities to mitigate EMS use and reliance.

MF health in Hawai‘i presents a unique challenge, particularly for patients requiring specialized prenatal and high-risk pregnancy care. Due to the limited availability of OB specialists on all neighbor islands, pregnant patients often need to travel to O‘ahu, imposing both financial and logistical burdens.

### ***Prenatal Care***

Multiple interviewees said that accessing prenatal and high-risk pregnancy care in Hawai‘i poses significant challenges for patients living on neighbor islands and rural areas. These services often require weekly appointments and frequent monitoring, particularly in late-term pregnancies or for individuals with complex medical conditions. Interviewees consistently emphasized that the geographic separation of specialized MF healthcare facilities (that exist only on O‘ahu) from outer islands creates substantial barriers for expectant mothers.

One OB physician highlighted cases where pregnant patients on islands like Moloka‘i and Lāna‘i were required to travel inter-island multiple times per month to access care from specialists or to undergo diagnostic tests unavailable locally. One respondent said:

*“There are unique mobility issues for low-income women and women living outside of transit-rich areas.”*

*-Community organization representative*

Participants described how frequent inter-island trips place an enormous financial and logistical burden on patients and their families, particularly as insurance coverage often fails to fully accommodate such travel needs. For example, public insurance may cover the cost of a flight but not reimburse for lodging, meals, or ground transportation between the airport and medical facilities. Patients with private insurance frequently face even greater gaps, as many plans exclude transportation benefits altogether. This leaves families to shoulder significant out-of-pocket costs, which can quickly become unaffordable.

Interviewees noted that the cost and inconvenience of these trips often lead patients to delay or avoid necessary appointments, posing serious risks to both maternal and fetal health. High-risk pregnancies, such as those involving gestational diabetes, preeclampsia, or fetal growth concerns, require consistent monitoring to prevent complications. Delayed or missed appointments can result in conditions going undetected or untreated, leading to preventable adverse outcomes.

In addition to financial strain, interviewees noted that logistical challenges exacerbate access issues. Interviewees noted that travel arrangements for prenatal appointments are often complicated by unreliable flight schedules, particularly for smaller airlines serving neighbor

islands. Weather-related delays, limited seating availability, and the need to book flights far in advance create additional stress for pregnant patients. For those with limited mobility or other health issues, navigating airports and ground transportation systems can further complicate the journey.

### ***Travel Burden and OB Physician Workforce Shortages***

Interviewees discussed how the lack of MF health specialists on islands such as Molokaʻi and Lānaʻi has created a substantial provider burden, leaving other healthcare professionals to manage growing patient loads with limited resources. This issue is particularly acute on Lānaʻi, where there are no birthing facilities, forcing all pregnant patients to travel to Maui or Oʻahu to give birth. For patients with high-risk pregnancies on other neighbor islands, relocating to Oʻahu or Maui weeks or even months before their due date is often necessary to ensure access to specialized care. This relocation requirement adds significant logistical and financial strain on patients and their families, including securing temporary housing, arranging transportation, and managing separation from loved ones. These challenges frequently result in delayed or inadequate care, further adding to the demands placed on already overburdened local providers.

One care coordinator noted that workforce shortages on these islands contribute to long wait times for prenatal appointments and other MF care services. OB providers are stretched thin, often managing a volume of patients that exceeds their capacity. This situation leads to professional burnout, as healthcare workers struggle to deliver high-quality care while grappling with limited resources and the need to coordinate complex travel arrangements for their patients.

Participants said the workforce shortages are also compounded by the lack of incentives to attract and retain MF health specialists in rural and neighbor island communities. Many healthcare professionals prefer to work in urban centers where resources, support systems, and professional opportunities are more abundant. These factors have left smaller islands dependent on visiting specialists or telehealth consultations, which, while helpful, cannot fully substitute for in-person care. For high-risk pregnancies requiring procedures like ultrasounds, non-stress tests, or emergency interventions, the absence of local specialists creates additional costs, delays and increased health risks.

Interviewees also noted that relocation to Oʻahu or Maui for high-risk pregnancies places additional strain on providers in urban centers. Hospitals and specialists in Honolulu must absorb the influx of patients from neighbor islands, further increasing their caseloads and contributing to systemic inefficiencies. These relocations also highlight the inequities faced by patients who lack the financial or logistical means to leave their home islands. Families that cannot afford extended stays on Oʻahu are at a higher risk of poor MF outcomes, as they may delay relocation or skip essential monitoring due to cost and accessibility barriers.

## **Additional Themes**

In addition to the four main themes, sub-themes were identified by the coders that were particularly relevant to the transportation challenges and were mentioned multiple times across interviews.

### ***Telehealth***

Interviewees discussed how telehealth has emerged as a critical tool for improving healthcare access across Hawai‘i, particularly for patients in rural and remote areas where transportation barriers often prevent timely access to care. The interviews highlighted the growing role of telehealth in bridging gaps in primary care, prenatal services, and chronic disease management. While telehealth was recognized as not a complete substitute for in-person visits, participants shared that its use has been transformative in delivering care to underserved communities, reducing the need for inter-island travel, and alleviating some provider burden.

One physician emphasized that telehealth is especially valuable for managing routine follow-ups and providing consultations for stable patients. For example, pregnant patients who need regular monitoring for conditions such as diabetes can use telehealth to discuss test results and adjust treatment plans without traveling long distances. Additionally, telehealth has allowed specialists on O‘ahu and Maui to reach patients on neighbor islands, offering guidance to local providers or directly consulting with patients through virtual appointments. This approach not only reduces logistical challenges but also expands access to specialized care that might otherwise be unavailable.

Despite these advantages, interviewees noted that challenges remain in fully realizing telehealth’s potential. Limited internet connectivity on neighbor islands and in rural areas poses a significant barrier, particularly for video-based consultations that require high-speed internet. Multiple interviewees highlighted that some patients lack access to reliable devices or the digital literacy needed to navigate telehealth platforms, further widening the gap for underserved populations. Providers also noted that telehealth is not suitable for all types of care, such as diagnostic imaging, physical examinations, or procedures that require in-person evaluation.

Another challenge interviewees noted is the reimbursement landscape for telehealth services. While Medicaid and some private insurers expanded telehealth coverage during the COVID-19 pandemic, several interviewees expressed concerns about the long-term sustainability of these policies. Physicians noted that in the past, reimbursement rates for telehealth consultations were often lower than for in-person visits, which disincentivizes providers from adopting telehealth as a primary mode of care. Recent telehealth parity laws have eliminated this concern in Hawai‘i, codified under Hawai‘i Revised Statute Act 226 (16) "Relating to Telehealth."<sup>12</sup>

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<sup>12</sup> Pacific Basin Telehealth Resource Center. n.d. "Hawai‘i Policies and Regulations." <https://www.pbtrc.org/policies-and-regulations/state-of-hawaii-policies-and-regulations/>.

More details about telehealth and MF health may be found in Part 4 of this series of reports.

### ***Provider Burden***

Interviewees described how healthcare providers in Hawai‘i are frequently tasked with arranging patient transportation, coordinating with insurers, and managing administrative responsibilities that detract from patient care. One interviewee emphasized that this burden disproportionately affects providers in rural settings, where fewer staff are available to share these duties. This added workload contributes to burnout and job dissatisfaction, and it hinders the quality of care provided to patients.

### ***Workforce Shortages***

Participants noted that the shortage of healthcare workers is a persistent barrier to effective healthcare delivery across the islands of Hawai‘i. One health provider noted that Hawai‘i struggles to attract healthcare workers to rural and isolated areas, largely due to the high cost of living, limited local training opportunities, and a lack of competitive financial incentives. This workforce gap results in overburdened providers, delayed patient care, and limited access for patients, especially for those in rural and remote areas of the state. As such, even when transportation is available, wait times for existing services can be long and access can be challenging.

## **Discussion**

The findings in this report highlight the significant challenges that transportation and travel barriers impose on healthcare access in rural Hawai‘i, particularly regarding EMS, NEMT, insurance coverage, and MF health. These barriers contribute to delayed medical care, increased financial burdens, and poorer health outcomes for residents of geographically isolated areas, in addition to significant stress, uncertainty, and tremendous logistical challenges. The findings of our stakeholder interviews demonstrate the multifaceted nature of transportation as a critical determinant of health.

One of the most pressing issues shared by our stakeholders was the lack of adequate emergency and non-emergency transportation services. In rural Hawai‘i, EMS response times are prolonged due to limited air and ground transport resources, which can lead to life-threatening delays in critical medical situations. Moreover, NEMT services remain unreliable and inefficient, particularly on neighbor islands where air travel is often the only means to access specialized care. The inconsistency of inter-island flights, exacerbated by limited airline providers and high costs, further widens the healthcare access gap. To summarize from the interviews, addressing these systemic issues requires a comprehensive approach that includes expanding air and ground

ambulance services, integrating rideshare and other programs for NEMT, and improving infrastructure for public transit in rural areas.

Health insurance policies also play a critical role in exacerbating transportation-related healthcare disparities. Medicaid is currently the only insurer mandated to cover NEMT services, yet administrative inefficiencies and complex approval processes often delay care and many associated costs are left uncovered. Meanwhile, Medicare and private insurers rarely provide coverage for medical travel, leaving many patients with significant out-of-pocket expenses. Expanding insurance coverage to include transportation benefits, particularly for rural residents requiring frequent medical travel, could significantly reduce financial burdens and improve overall healthcare access.

MF health outcomes are particularly affected by transportation barriers. Many high-risk pregnancies require frequent specialist visits and, in some cases, relocation to O‘ahu or Maui for delivery. The financial and logistical challenges of inter-island travel force many expectant mothers to either delay care or endure long, stressful journeys. Implementing policies to expand telehealth, provide subsidized patient housing and accommodations for families, and incentivize healthcare providers to travel to rural areas could improve MF health outcomes and alleviate strain on the existing medical transport system.

Public health was at the core of interview discussions, as transportation access is a fundamental determinant of access to health services. Without reliable transportation, residents of rural and underserved communities face delayed diagnoses, inconsistent treatment, and higher rates of preventable health complications. Public health strategies were discussed to address these disparities through policy interventions that integrate healthcare access with transportation infrastructure planning. This includes investing in mobile clinics, enhancing telehealth capabilities, and ensuring that transportation policies prioritize vulnerable populations, such as elderly residents, low-income families, and those with chronic conditions. Many discussed how adequate access to primary care is a significant public health intervention, given that adequate prevention can obviate the need for more acute or specialty services that may not be easily accessible.

It should be noted that there are research limitations of this project, which primarily stem from methodological constraints and contextual challenges. First, the reliance on field notes rather than direct transcriptions for a large portion of the interviews may have resulted in the omission of nuanced details or specific phrasing from interviews, potentially affecting the depth of the qualitative analysis. The rapid qualitative analysis framework, while efficient, emphasizes actionable results and may sacrifice the granularity and depth typical of more comprehensive qualitative methodologies. Additionally, the use of purposive and snowball sampling, while effective in targeting relevant stakeholders, might have introduced selection bias by favoring individuals already connected to the research network or those referred by initial interviewees. These limitations should be considered when interpreting the findings and applying them to broader contexts.

## **Conclusion**

The findings in this analysis of 40 stakeholder interviews underscore the significant role that transportation and travel access plays in accessing health care in rural Hawai‘i. Persistent barriers in EMS, NEMT, and insurance coverage create systemic challenges that disproportionately impact residents of geographically isolated communities. These transportation limitations contribute to delayed care, financial strain, and increased health risks, particularly for those requiring specialized services such as MF care. While innovative solutions such as telehealth and mobile care units have helped mitigate some challenges, they are not sufficient substitutes for a well-integrated, reliable medical transportation system. Across the interviews, it was clear that addressing these issues requires a coordinated approach that brings together healthcare providers, transportation authorities, insurers, and policymakers to develop sustainable, long-term solutions that prioritize access for all patients, regardless of geography.

## **APPENDIX A: Questions for Stakeholder Interviews**

### **Questions for Consideration: (GENERAL)**

- Do you think that transportation is a significant issue affecting health outcomes and health care access for your patient population? If so, why?
- Can you share more with us about how transportation is used for health care services in your area?
- What do you see as the greatest barriers to quality, accessible and affordable transportation for health needs in your area and in Hawai'i as a whole?
- What unique solutions have you come across that address transportation needs for healthcare?
- How do the transportation needs of rural residents / those on neighbor islands differ from those on O'ahu / urban areas?
- What potential solutions would you recommend for improving transportation for health needs? How could RHRPC work to implement those solutions? Who are the critical partners we would need to work with?
- Do you have others that you feel we should talk to? Patients, providers, staff who might be able to provide additional insight?

### **Questions for Consideration: (INSURANCE)**

- Do you think that transportation is a significant issue affecting health outcomes and health care access for your patient population? If so, why or why not?
- Do you think that transportation is a significant issue affecting providers traveling to neighbor islands to provide health care services? Why or why not?
- Can you share more with us about how transportation is used for health care services in your area of coverage?
- What do you see as the greatest barriers to quality, accessible and affordable transportation for health in Hawai'i as a whole?
- What unique solutions have you come across that address transportation needs for healthcare?
- Can you explain how your organization addresses reimbursement for travel and transportation related to health needs for patients who have to travel to other islands for care? For providers traveling to other islands to provide care? Do you feel it is adequate? What improvements, if any, would you like to see in the future?
- What potential solutions would you recommend for improving transportation for health needs? How could RHRPC work to implement those solutions? Who are the critical partners with whom we would need to work?
- How does maternal health fit into the issues we have discussed? Do you provide special/separate coverage for these instances?
- Can you think of any other individuals to whom we should talk who might be able to provide additional insight?

**Questions for Consideration: (TRANSPORTATION SERVICE PROVIDER)**

- Do you think that transportation is a significant issue affecting health outcomes and health care access for people in Hawai‘i? Patients seeking care and providers providing care? What programs does your company have to better serve the rural communities to ensure they have access to health care services on other islands? Do you offer special rates? What barriers do you face to provide better rates for health care providers and patients? Do you participate in the federal subsidy program? If not, why? Are there policies, laws, regulations that create barriers to providing better services?
- Can you share more with us about how your organization uses/provides transportation for health care services in your area?
- What do you see as the greatest barriers to quality, accessible and affordable transportation for health needs in your area and in Hawai‘i as a whole?
- What unique transportation solutions have you come across that address transportation needs for healthcare specifically for rural, remote areas?
- How do the transportation needs of rural residents / those on neighbor islands differ from those on O‘ahu / urban areas? How do your services or special programs address these transportation needs?
- What would be needed for you to provide service to remote areas such as Hāna, Lāna‘i, or Moloka‘i, if you are not doing so already or what changes can you make to better serve such areas? Are there policy or regulation changes that are needed? If so, what are they?
- What potential solutions would you recommend for improving transportation for health needs? How could RHRPC work to implement those solutions? Who are the critical partners with whom we would need to work?
- Have you heard of instances of pregnant people needing special accommodations for transportation? How have you handled those issues?
- Can you think of any other individuals to whom we should talk who might be able to provide additional insight?

**Questions for Consideration: (STATE OR FEDERAL AGENCY/DEPARTMENT/REPRESENTATIVE)**

- Do you think that transportation is a significant issue affecting health outcomes and health care access for those you serve? If so, why?
- Can you share more with us about how transportation is used for health care services?
- What do you see as the greatest barriers to quality, accessible and affordable transportation for health needs in your area and in Hawai‘i as a whole? Patients seeking care and providers providing care?
- What unique solutions have you come across that address transportation needs for healthcare?

- How do the transportation needs of rural residents / those on neighbor islands differ from those on O‘ahu / urban areas?
- What potential solutions would you recommend for improving transportation for health needs? How could RHRPC work to implement those solutions? Who are the critical partners with whom we would need to work?
- How does maternal health fit into these issues? Are there regulations or laws you have seen or advocated for that address maternal/fetal health transportation access in particular?
- Can you think of any other individuals to whom we should talk who might be able to provide additional insight? Patients, providers, staff?



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

## ***Part 3: Policy Options***

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

**June 25, 2025**

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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 (HI 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 designations and loan/scholarship awards, as well as the need for exemption of certain medical services from the state’s General Excise Tax.

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.<sup>1</sup> Upstream policy decisions in this area significantly impact downstream health outcomes.<sup>2</sup> 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.

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<sup>1</sup> 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>.

<sup>2</sup> Ibid.

## Executive Summary

Access to reliable, affordable transportation is a critical determinant of health in rural Hawai‘i, where residents often face geographic isolation, limited healthcare infrastructure, and costly inter-island travel requirements. These barriers create significant delays in receiving care. This report—Part 3 in a four-part series from RHRPC—presents policy options aimed at improving rural health by addressing transportation and travel access challenges. As previously discussed, the University of Hawai‘i’s (UH) Rural Health Research and Policy Center (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, existing precedents, 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. The policy options are organized, as in Parts 1 and 2 in this series, by Emergency Medical Services (EMS), Non-Emergency Medical Transportation (NEMT), insurance coverage, and Maternal Fetal (MF) health. Each policy goal has a background and policy options. Taken together, these potential policy options aim to bridge critical gaps and promote equitable access to healthcare services statewide.

Policy options related to EMS include improving both air and ground ambulance services, expanding rapid response vehicle deployment, and developing community paramedicine programs to address overuse and staffing challenges. Other options include integrating pharmacists and community health workers into primary care teams to improve chronic disease management and reducing emergency service reliance.

NEMT policy options include increasing the affordability and reliability of inter-island medical travel. Proposals include creating subsidized flight programs, expanding airline competition, offering grants for community-based travel coordination, improving accountability for federally subsidized air carriers, investing in airport infrastructure, and exploring alternative modes such as waterplanes. Additionally, it calls for expanded partnerships with rideshare services for ground transport and encourages enabling hospitals and clinics to directly provide and be reimbursed for patient transport services.

Policy options regarding Insurance Coverage focus on expanding transportation benefits across public and private insurance plans. Recommendations include mandating NEMT as a covered benefit under traditional Medicare and employer-based insurance, piloting transportation coverage through the Center for Medicare and Medicaid Innovation, and improving Medicaid NEMT processes by streamlining approval timelines and enhancing service delivery for rural beneficiaries.

Finally, MF Health policy options emphasize the need for transportation-sensitive solutions for pregnant individuals in rural and neighbor island communities. The report proposes

state-funded housing for patients needing to relocate for care, financial incentives for MF health specialists to travel to remote areas, and expansion of mobile maternal clinics to bring essential prenatal and postpartum services directly to underserved communities.

Together, these policy options offer multiple strategies to reduce transportation-related barriers and improve health equity in Hawai‘i’s rural regions. If implemented, they could support more timely access to care, reduce avoidable complications, and build a more resilient and inclusive healthcare system across the islands.

## **Introduction**

Transportation and travel access is a significant social determinant of health (SDOH), particularly in rural areas of Hawai‘i. Many policymakers have proposed and sought solutions to these issues from different angles, such as through insurance coverage, transportation accessibility, and pilot projects.

As previously discussed, the University of Hawai‘i’s (UH) Rural Health Research and Policy Center (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. The policy options are organized, as in Parts 1 and 2 in this series, by Emergency Medical Services (EMS), Non-Emergency Medical Transportation (NEMT), insurance coverage, and Maternal Fetal (MF) health. Each policy goal has a background and policy options. Taken together, these potential policy options aim to bridge critical gaps and promote equitable access to healthcare services statewide.

Additionally, Part 4 of this series will delve into policy options specific to MF telehealth issues, which are critical components to addressing transportation and travel access barriers in rural Hawai‘i.

## Policy Options

### EMERGENCY MEDICAL SERVICES

#### **Policy Goal #1: Improve Emergency Medical Care and Decrease Burdens on EMS Providers**

##### **Background**

EMS is a critical component in healthcare and public health as it provides timely care in acute medical situations, such as heart attacks, strokes, and other life-threatening injuries or trauma (e.g., motor vehicle crashes or collisions). The goal of EMS is to provide care to stabilize patients on the way to the hospital during emergent situations. Typically, EMS transports patients by ground ambulance or air medical services. Ground ambulance services are also heavily relied on due to high rates of elderly accidents or medical emergencies, and in replacement of NEMT when patients are not able to use regular transportation to access medical care for non-emergent situations. In addition, due to Hawai‘i’s unique geography, air EMS is frequently used. The community’s high reliance on EMS can lead to a large burden on EMS systems that may result in reduced response times, quality of care, and staff burnout, which may be difficult to address with existing high call volumes, understaffing, and long working hours/irregular shifts.

In Part 2 of this series, entitled Stakeholder Insights, there were several common threads regarding EMS from our interviews with 40 stakeholders, including scarcity of emergency vehicles and helicopters/airplanes leading to unavailable and untimely EMS/transport, EMS overutilization and limited emergency room (ER) capacity, staffing issues (pilots, EMS crew, and ER), insurance reimbursement issues, problems with having a singular air-medical private company (Hawai‘i Life Flight), and high costs to fly patients inter-island.

##### **Policy Option #1: Expand and Support Air Ambulance Services**

Due to Hawai‘i’s geographic isolation, air ambulances play a crucial role in providing emergency medical transport, particularly for residents of neighbor islands who require urgent care on O‘ahu or Maui. Expanding and improving air ambulance services can help reduce delays in emergency response by getting the right patient to the right place at the right time to ensure that critically ill patients receive timely medical interventions.

- **Policy Level:** State and Local, Legislative and Programmatic
- **Implementation Framework:**
  - **Expand Air Ambulance Services:**
    - The Hawai‘i State Legislature and county governments could invest in a dedicated public air ambulance program to ensure timely transport of critically ill patients between neighbor islands and higher-level treatment facilities on O‘ahu and Maui.

1. Legislative initiatives to consider include those such as HB 2437 (Hawai‘i State Legislature, 2024), which proposes an Emergency Aeromedical Services Partnership Program administered by HI DOH for counties with populations under 500,000, which would create additional air ambulance options, maintained by counties, to provide more options for rural EMS provision.
  2. Future legislative efforts could support and expand cost-sharing and revenue-sharing mechanisms between the State and counties (Hawai‘i, Kaua‘i, and Maui) for air ambulances.
- **Address Regulatory and Market Entry Barriers**
    - Re-evaluate the Certificate of Need (CON) requirement for EMS inter-facility transports to assess its impact on service availability. As Hawai‘i is a CON state, formal state approval is required to operate such services. While intended to prevent unnecessary duplication of services, this regulation has also contributed to bottlenecks in establishing or expanding inter-facility EMS transport capabilities.
    - Incentivize new market entrants by streamlining the approval process or creating limited exemptions for non-emergency and inter-facility transports. Easing these restrictions could reduce strain on the current EMS infrastructure and introduce more service providers to meet growing demand, especially in rural and neighbor island settings.

## **Policy Option #2: Establish a Centralized Emergency and Trauma Care Communications Center**

Creating a centralized Emergency and Trauma Care Communications Center would allow EMS and first responders to consult real-time experts for guidance on applying a uniform field triage scheme, determining the nearest appropriate facility, and when to initiate air medical transport directly to the scene. Other states such as Arkansas have implemented similar programs which have been estimated to save over \$100 million dollars annually in state medical costs.<sup>3</sup>

- **Policy Level:** State, Programmatic and Operational
- **Implementation Framework:**
  - **Establishment:** The Hawai‘i State Legislature could authorize and appropriate funds to The Hawai‘i Department of Health’s Emergency Medical Services and Injury Prevention System Branch (EMSIPSB), in coordination with the State Trauma System, to establish a 24/7 communications center staffed by trained personnel (e.g., trauma nurses, emergency physicians, dispatch coordinators).

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<sup>3</sup> Maxson, T., C. D. Mabry, M. J. Sutherland, R. D. Robertson, J. O. Booker, T. Collins, H. J. Spencer, C. F. Rinker, T. L. Sanddal, and N. D. Sanddal. “Does the Institution of a Statewide Trauma System Reduce Preventable Mortality and Yield a Positive Return on Investment for Taxpayers?” *Journal of the American College of Surgeons* 224, no. 4 (April 2017): 489–99.

- The center would provide live consultation for EMS personnel on trauma and maternal emergencies, using a standardized triage protocol to advise on destination decisions and support coordination across islands.
- Integration with hospital capacity dashboards and air medical transport systems (e.g., rotor and fixed-wing services) could enable faster response for high-risk maternal cases and trauma scenarios.

### **Policy Option #3: Support Ground Ambulance Expansion and Rapid Response Services**

Ground ambulance services are essential for timely emergency medical care, but rural areas and high-traffic regions face challenges due to an insufficient number of vehicles and personnel. Expanding ground ambulance fleets and implementing rapid response services can improve coverage, reduce wait times, and enhance emergency care for underserved communities.

- **Policy Level:** State and Local, Legislative and Programmatic
- **Implementation Framework:**
  - **Comprehensive Needs Assessment:**
    - EMSIPSB and the HI DOH Office of Public Health Preparedness could work in coordination with County governments, healthcare systems, and community stakeholders to undertake or procure a comprehensive needs assessment to determine whether the current distribution of ground EMS coverage best serves the communities, particularly in underserved rural and high-traffic areas, based on vehicle availability, personnel, and equipment.
  - **Vehicle Procurement and Allocation:**
    - After identifying high-needs areas through a comprehensive needs assessment, individual counties and/or the Hawai‘i State Legislature could invest in additional ground ambulances and rapid response vehicles (RRVs), with a focus on the identified high-needs areas.
    - RRVs require fewer resources (e.g., staffing) for cost-effective emergency coverage. RRVs have a more limited scope than ambulances, but can be mobilized more efficiently and arrive prior to EMS to provide initial medical care before more advanced life support arrives. RRVs have previously been implemented by the Honolulu Fire Department,<sup>4</sup> and are beginning to be implemented across the country.<sup>5</sup> RRVs could identify and collaborate with alternative, well-equipped locations (e.g., urgent care facilities, community health centers) where teams can deliver patients who might not need a higher level of care.

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<sup>4</sup> Honolulu Fire Department. "HFD to Roll Out Rapid Response Vehicles (RRVs)." Last modified January 27, 2021. <https://fire.honolulu.gov/2021/01/27/hfd-to-roll-out-rapid-response-vehicles-rrvs/>

<sup>5</sup> Davis Simpson, "Fire-EMS Adds Quick Response Vehicle to Support City of Clemson," *Clemson University Newsroom*, March 18, 2025, <https://news.clemson.edu/fire-ems-adds-quick-response-vehicle-to-support-city-of-clemson/>.

- **Funding and Grants:** Coordinators of the RRV programs could leverage federal grants such as the Federal Emergency Management Agency (FEMA) Assistance to Firefighters Grant<sup>6</sup> for vehicle procurement and allocation in rural areas.

#### **Policy Option #4: Expand Community Paramedicine Outreach Programs**

Many non-emergency medical situations could be better managed outside of traditional EMS and hospital settings, reducing reliance on emergency services. Community paramedicine programs began in the 1990s as a way to expand access to healthcare by leveraging paramedics to provide non-emergency services such as wellness checks, chronic disease management, and post-discharge follow-ups. These programs aim to reduce unnecessary emergency room visits and hospital readmissions by bringing care directly to patients in their homes or communities. Expanding community paramedicine programs would allow trained professionals to provide preventive as well as follow-up care in patients' homes or community settings, which could improve outcomes and reduce healthcare costs by allowing EMS resources to be used more efficiently.

- **Policy Level:** Local, Programmatic
- **Implementation Framework:**
  - **Program Design:** Community-Based Organizations (CBOs), county governments, HI DOH, hospital systems, and/or UH, could develop community paramedicine programs and mobile clinics that offer preventive and other upstream healthcare services (e.g., vaccines, mental health services, chronic disease management, health education, harm reduction, wellness checks, and primary care services).

#### **Policy Option #5: Integrate Clinical Pharmacists and Community Health Workers (CHWs) into Primary Care Teams to Improve Chronic Disease Care and Reduce EMS Reliance**

Many avoidable EMS calls are due to gaps in chronic disease management, medication issues, and limited access to preventive care in rural communities. Clinical pharmacists have extra training beyond a pharmacy doctorate degree that enables them to provide direct patient care and counseling as well as medication therapy management and interprofessional care. Community health workers (CHWs) are trusted frontline public health workers who connect individuals to health services and resources within their community. Integrating pharmacists and CHWs into primary care teams can strengthen community-based health support, manage conditions upstream, and reduce unnecessary emergency responses.

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

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<sup>6</sup> Federal Emergency Management Agency. "Firefighters Grant Program." Last modified March 21, 2025. <https://www.fema.gov/grants/preparedness/firefighters>.

- **Incentivize Workforce Expansion in Underserved Areas:** HI DOH could establish a grant or incentive program to support rural clinics and health centers in recruiting and employing pharmacists and certified CHWs. Incentives could include rural service bonuses or housing stipends for pharmacists and CHWs serving in high-need areas.
- **Support Team-Based Care Integration:** The grant could require participating hospitals and clinics to develop or strengthen collaborative practice agreements that allow pharmacists to co-manage chronic conditions (e.g., diabetes, hypertension) alongside physicians. It could also encourage integration of CHWs into care coordination teams to conduct home visits, wellness checks, and health education, particularly for high-utilizer patients.
- **Core state model:** HI DOH could work with UH to create a centralized hub for pharmacists and CHWs to serve practices in the state on a more part-time basis that are not able to hire them full-time.

## **NON-EMERGENCY MEDICAL TRANSPORTATION (NEMT)**

### **Policy Goal #1: Expand Affordable and Reliable Air Travel Options for Medical Transportation in Hawai‘i**

#### **Background**

Access to affordable and reliable air travel is crucial for healthcare in Hawai‘i, given the state’s unique non-contiguous geography and resultant transportation challenges. Residents of rural and remote areas, such as Moloka‘i and Lāna‘i, face significant barriers to accessing advanced medical care, which is concentrated in urban centers such as Honolulu. These barriers necessitate frequent inter-island travel for specialist appointments, surgeries, and advanced diagnostic procedures. The absence of specialized services on many neighbor islands makes air travel an essential link in the healthcare system for these populations, as no or limited ferry services exist between islands. Current challenges include high flight costs, limited flight availability, and limited reliability of air service. Frequent delays and cancellations disrupt patient schedules, complicating access to care and sometimes forcing rescheduling of critical treatments or surgeries, which can have serious consequences for health outcomes.

While the U.S. Department of Transportation (DOT) Essential Air Service (EAS) program does fill critical air transport service gaps for rural areas, as discussed in Part 1, there are few of these subsidies in Hawai‘i. Additionally, infrastructure constraints, such as the limited runway capacity of airports on islands such as Moloka‘i, restrict the types and sizes of aircraft that can serve these locations, further limiting service options and reliability. Recent efforts to address these concerns include SB1570, introduced to the Hawai‘i State Legislature in 2025 by

Rep. Lynn DeCoite and others, which would “require the Department of Transportation to plan and design an expansion of the runway at Molokai Airport to accommodate larger aircraft.”

### **Policy Option #1: Expand and/or Create Subsidized Inter-Island Flight Programs for Health Services**

Hawai‘i’s neighbor island residents frequently travel inter-island for specialized medical care, but high flight costs and limited availability pose significant challenges. Establishing a subsidized inter-island flight program could reduce financial burdens and improve access to essential healthcare services.

- **Policy Level:** Federal, State, Programmatic
- **Implementation Framework:**
  - **Public-private partnerships:** The State of Hawai‘i, through HI DOH or HI DOT, could negotiate with inter-island airlines to offer subsidized inter-island flights for medically necessary travel for kama‘āina, with the difference in costs covered by state funding. Certain airlines might offer such discounts in exchange for various benefits, such as the ability to solely operate such a program. The administering state agencies could facilitate airline engagement, airport coordination, and federal grant pursuit.
  - Funds could also be requested from the Hawai‘i State Legislature to reimburse airlines for the costs incurred, or federal grants could be sought, such as from the Federal Aviation Administration (FAA) Innovative Coordinated Access and Mobility (ICAM) program.<sup>7</sup>
    - A pilot project with a similar goal, championed by Hawai‘i State Senator Lynn DeCoite (District 7) and Hawai‘i State Representative Mahina Poepoe (District 13) and entitled “Essential Rural Medical Air Transport (ERMAT), will be tested by HI DOH from 2025-2026 to provide transport from Lāna‘i and Moloka‘i to O‘ahu or Maui for medically necessary appointments. Evaluation of this program could lead to expansion to improve health access in rural areas.
  - **Private leadership:** Certain airlines could choose to operate such a service for market share and public trust. For example, Hawaiian Airlines could expand on the Huaka‘i program<sup>8</sup> for kama‘āina needing medical services.

### **Policy Option #2: Expand Inter-Island Airline Participation and Competition**

Limited airline competition and inconsistent service reliability contribute to high costs and flight disruptions, impacting medical travel for neighbor island residents. Expanding airline

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<sup>7</sup>Federal Transit Administration. “Fact Sheet: Innovative Coordinated Access & Mobility Pilot Program.” *U.S. Department of Transportation*, 2025. <https://www.transit.dot.gov/funding/grants/fact-sheet-innovative-coordinated-access-mobility-pilot-program>.

<sup>8</sup> Hawaiian Airlines. “Huaka‘i Travel Program.” *Hawaiian Airlines*, 2025. <https://www.hawaiianairlines.com/huakai>.

participation and encouraging competition could improve affordability and access to consistent inter-island travel options.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Fostering Competition:**
    - i. HI DOT could issue contracts to smaller airlines (e.g., Lāna‘i Air) to service underserved routes. It could also provide grants or tax credits (through funding appropriated by the Hawai‘i State Legislature) to incentivize new market entrants that have aircraft suitable for short runways, given the constraints of Moloka‘i Airport and Lāna‘i Airport.

### **Policy Option #3: Establish a Grant Program for CBOs and/or Health Systems to Provide Affordable Air Travel for Medical Needs**

Many rural hospitals and clinics dedicate a large amount of staff time to help patients with travel logistics, taking time away from direct patient care. Some CBOs, such as Angel Flight West,<sup>9</sup> already assist patients with medical travel logistics between islands, but lack sufficient funding to expand their services.

- **Policy Level:** Federal, State, Programmatic
- **Implementation Framework:**
  - **Grant Program Details:**
    - A grant program could be created and funded by the Hawai‘i State Legislature, and administered by HI DOT or HI DOH, to support CBOs and/or health systems in coordinating affordable air travel for patients. Initial funding for this program could come from state appropriations, while also leveraging federal funding opportunities such as the Federal Transit Administration grants for rural transportation,<sup>10</sup> or the U.S. DOT ICAM program.<sup>11</sup> Program developers could also partner with private foundations or corporations to secure additional funding for ongoing program support.
    - The grantees’ responsibilities could include:
      - Negotiating preferred or bulk rate agreements with airlines for medical travel, including incentives such as credits or fuel subsidies for participating airlines;
      - Providing financial support for healthcare professionals traveling to rural and neighbor island areas to deliver critical services; and

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<sup>9</sup> Angel Flight West, “By the Numbers: Hawai‘i,” Angel Flight West, 2025, <https://angelflightwest.org/by-the-numbers/by-the-numbers-hawaii/>.

<sup>10</sup> Federal Transit Administration. “Public Transportation in Rural Areas.” U.S. Department of Transportation, 2025. <https://www.transit.dot.gov/rural>.

<sup>11</sup> Federal Transit Administration. “Fact Sheet: Innovative Coordinated Access & Mobility Pilot Program.” U.S. Department of Transportation, 2025. <https://www.transit.dot.gov/funding/grants/fact-sheet-innovative-coordinated-access-mobility-pilot-program>.

- Funding staffing, logistical management, and technology infrastructure to streamline travel coordination.
- Grant recipients could create a centralized platform to coordinate travel schedules, reimbursement, and patient-provider communication. The platform could integrate:
  - Real-time updates on flight availability/delays;
  - Automated reimbursement processing; and
  - Performance tracking to monitor grant utilization and program effectiveness.

#### **Policy Option #4: Improve Reporting Mechanisms and Public Engagement to Address EAS Airline Reliability Concerns**

The EAS program aims to maintain air travel options for rural areas by offering subsidies to air carriers to provide service to small, rural airports. Even with these subsidies in place, residents can often face service reliability issues that affect healthcare access. Strengthening public engagement and improving reporting mechanisms can help identify and address deficiencies in air travel services, which can then be shared directly with the U.S. DOT and FAA, who have accountability mechanisms for entities that receive EAS subsidies.

- **Policy Level:** Federal and State, Programmatic
- **Implementation Framework:**
  - **State Complaint Portal:**
    - HI DOT could establish an online portal for passengers to report air service issues across the state, including delays, cancellations, and reliability concerns.
    - The portal should allow passengers to file complaints directly, with data shared regularly with the U.S. DOT and FAA for review and enforcement. It should also categorize and analyze complaints by type (e.g., reliability, frequency, safety) to identify recurring service issues and prioritize interventions.
  - **Public Advocacy Campaign:**
    - CBOs, such as the Hawai‘i State Rural Health Association, or HI DOH, could launch a campaign to both educate residents about sharing their stories and concerns about the reliability of airlines providing EAS services, as well as collect feedback to submit to HI DOT or U.S. DOT. The campaign could provide user-friendly resources, such as guides, workshops, and community outreach, to simplify the submission process.

## **Policy Option #5: Enhance Accountability Measures for Airlines Receiving EAS Subsidies**

Airlines receiving EAS subsidies are expected to provide reliable service, but frequent delays and cancellations negatively impact patients who rely on these flights for medical care. While reporting mechanisms and public engagement are critical, going a step further to enhance federal accountability measures for airlines receiving EAS subsidies can help ensure consistent and dependable transportation for healthcare access.

- **Policy Level:** Federal, Regulatory and Legislative
- **Implementation Framework:**
  - **EAS Accountability Standards:**
    - Currently, the FAA states in their compensation procedures that: “...If the [EAS] carrier does not schedule or operate its flights in full conformance with the terms of the contract for a significant period, it may jeopardize its entire subsidy claim for the period in question.”<sup>12</sup> The FAA could consider instituting additional requirements for airlines with EAS subsidies to submit service improvement plans addressing recurring complaints or face penalties and establish reliability benchmarks, such as:
      1. Minimum on-time performance percentages.
      2. Maximum allowable cancellations over a set period.
      3. Passenger satisfaction ratings and complaint thresholds.
  - **FAA Oversight and Requests for Proposals (RFPs) Mechanisms:**
    - The FAA could introduce additional regulations that trigger either mitigating measures, such as warnings or monetary penalties, when breached.
    - If continued breach of regulations occurs, re-issuance of RFPs could be triggered for subsidized service, such as when reliability metrics fall below established thresholds or a designated number of complaints are received.
    - The triggered bidding could exclude the current airline (which failed to fit reliability metrics) from bidding on the subsidized service to encourage competition and incentivize better performance; however, if no other airlines bid on the subsidy, the original airline could retain the contract with renewed expectations. This bidding process could also include specific requirements in contracts with airlines regarding cancellations and delays, and enforcement actions requiring improvements.

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<sup>12</sup> U.S. Department of Transportation. “Essential Air Service.” *Office of Aviation Analysis*, accessed May 8, 2025. <https://www.transportation.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service>.

## **Policy Option #6: Invest in Airport Infrastructure Improvements**

Airport infrastructure limitations on islands such as Moloka‘i (such as runway size) restrict the types of aircraft that can operate, reducing air travel options for patients needing medical care. Investing in infrastructure improvements, such as runway expansions, can support increased flight availability and improve healthcare access for patients in rural and underserved areas.

- **Policy Level:** State, Legislative and Programmatic
- **Implementation Framework:**
  - **Runway Expansion:**
    - i. The Hawai‘i State Legislature could appropriate funds to extend Moloka‘i Airport’s runway to accommodate larger aircraft, enabling more airlines to operate and improving service reliability. Cultural and environmental impact assessments could be conducted, as well as securing approval from stakeholders, including the Department of Hawaiian Home Lands (DHHL), whose land is adjacent to the airport, and residents of Moloka‘i. Funding for these extensions could come from the FAA Airport Improvement Program grants,<sup>13</sup> and potentially be supplemented by state appropriations.

## **Policy Option #7: Establish and Expand Seaglider Services**

Seaglider services have the potential to provide alternative inter-island travel options, reducing dependency on expensive and unreliable air travel. Encouraging investment in these transportation methods could improve connectivity for rural residents needing medical care. Some private companies have already begun developing such technologies, such as Regent in partnership with Hawaiian Airlines,<sup>14</sup> as well as Surf Air Mobility, the new parent company of Mokulele Airlines.<sup>15</sup>

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Collaboration with Private Operators:**
    - HI DOT could partner with private companies, such as Regent and its seaglider technology partners, to develop waterplane and seaglider transport options between the Hawaiian islands. HI DOT could provide tax credits, subsidies, or operational grants to encourage private operators to service underserved routes, such as those connecting neighbor islands to O‘ahu and Maui. HI DOH and HI DOT could explore reduced harbor fees

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<sup>13</sup> Federal Aviation Administration. “Airport Improvement Program (AIP).” *Federal Aviation Administration*, 2025. <https://www.faa.gov/airports/aip>.

<sup>14</sup> Regent Craft. “Hawai‘i.” *Regent*, accessed May 8, 2025. <https://www.regentcraft.com/category/hawaii>.

<sup>15</sup> Madeleine List, “Electric Seagliders Could Come to Hawaii as Soon as 2026,” *Honolulu Civil Beat*, September 17, 2023, <https://www.civilbeat.org/2023/09/electric-seagliders-could-come-to-hawaii-as-soon-as-2026/>.

and expedited permitting processes as additional incentives to foster adoption and expansion of seaglider services if particularly used by residents for medical reasons. Program operators could also work with healthcare providers and community organizations to identify critical routes and ensure these services align with medical travel needs.

- **Pilot Programs and Expansion:**
  - HI DOH could alternatively launch a pilot program for waterplanes and/or seaglidors connecting rural islands, such as Moloka‘i and Lāna‘i, with major medical hubs on O‘ahu and Maui to assess feasibility and demand. HI DOH could utilize pilot program data to refine operations, scale services statewide, and secure additional funding from state and federal sources.

## **Policy Goal #2: Increase Partnerships with Ridesharing Services to Provide Ground NEMT**

### **Background**

NEMT consists of transportation provided to individuals to access medically necessary, non-urgent healthcare services. NEMT services in Hawai‘i, which are currently often provided by contracted providers or reimbursed to taxi services, often suffer from inefficiencies such as long wait times, high costs, and limited availability. Ridesharing platforms such as Uber and Lyft, along with independent providers/taxis, have the potential to address these issues by providing more flexible, cost-effective, and technology-driven transportation options.

### **Policy Option #1: Build State and Local Partnerships Between Medicaid and Ridesharing Agencies, Independent Providers, and/or Taxi Services**

Traditional NEMT services in Hawai‘i have a number of inefficiencies, including long wait times and limited availability, making it difficult for patients to reach their medical appointments. Partnering with rideshare services such as Uber and Lyft can provide a cost-effective, flexible transportation option to ensure patients have reliable access to care.

- **Policy Level:** State and Local, Programmatic
- **Implementation Framework:**
  - **Education and Technical Assistance for Medicaid Managed Care Organizations (MCOs), and other potential partners:**
    - The State of Hawai‘i Med-QUEST Division and other appropriate organizations could create an educational program to inform Medicaid MCOs about the benefits of contracting with ridesharing companies, independent providers/taxi services, and other eligible platforms that meet healthcare transportation standards. The program could highlight cost savings, improved service availability, and the potential to address

geographic challenges in Hawai‘i’s healthcare system, while providing technical assistance on establishing contracts that align with Medicaid requirements, including driver training and insurance standards. This program could be built from any previous or existing pilot programs.

- **Incentives for Ridesharing Drivers:**

- Medicaid MCOs, when contracting with ridesharing services, could provide incentives for drivers willing to operate NEMT services, particularly in rural and neighbor island areas. Examples of incentives may include:

1. Higher reimbursement rates for servicing underserved regions;
2. Subsidized vehicle modifications for wheelchair accessibility; and
3. Bonuses for meeting high service standards, such as timeliness and patient safety.

### **Policy Option #2: Incentivize Service Providers for Houseless Population Transportation**

Individuals experiencing houselessness often struggle to access transportation due to stigma and financial barriers, leading to missed medical appointments and poorer health outcomes. Creating incentives for transportation providers to serve this population can improve healthcare access and reduce the burden on emergency services.

- **Policy Level:** Local, Programmatic

- **Implementation Framework:**

- **Enhanced Compensation and Provision of Supplies:** County governments could create or contract out the creation of programs to provide monetary incentives for transportation providers, including taxis, rideshares, and shuttle services, to serve houseless patients. Incentives could be based on trip distance and service complexity to ensure adequate reimbursement. The program should include transportation after discharge from the Emergency Room. Counties could also offer materials/services, such as disposable seat covers and vehicle detailing, to further support and encourage providers to serve this population. A similar incentive framework could be used to prioritize wheelchair-accessible vans for physically disabled patients.

### **Policy Goal #3: Improve Utilization of Hospitals and Clinics as Medical Transport Providers**

#### **Background**

Hospitals and clinics, especially those serving rural or isolated populations, are uniquely positioned to provide transportation services directly to patients, as many already do. Current transportation systems, such as taxis or other third-party NEMT providers, are less suited to meet the specific needs of patients, such as coordinating ride schedules with appointment times. By

becoming reimbursable transportation providers, hospitals and clinics can align transportation services with patient care, ensuring reliability and efficiency. However, operationalizing such a model requires hospitals and clinics to navigate complex regulatory frameworks, secure funding for start-up and maintenance costs, and develop the capacity and staffing to manage transportation logistics. Establishing a state-supported program to assist hospitals and clinics in creating and maintaining transportation services could address these barriers and enhance access to care across Hawai‘i.

### **Policy Option #1: Enable Hospitals and Clinics to Serve as Reimbursable Transportation Providers**

Hospitals and clinics are well-positioned to provide medical transportation but often lack the resources and reimbursement structures to do so. Enabling them to serve as reimbursable transportation providers could create a more integrated and patient-centered system for accessing healthcare.

- **Policy Level:** State, Legislative and Programmatic
- **Implementation Framework:**
  - **State-Run Assistance Program:**
    - The Hawai‘i State Department of Human Services (DHS) or HI DOH could establish a program to provide technical assistance to hospitals and clinics aiming to become reimbursable NEMT providers. Areas of assistance could include navigating transportation regulations, developing operational and logistical plans for transportation services, and meeting insurance reimbursement requirements. Funding could be acquired through state appropriations from the Hawai‘i State Legislature or from federal grants such as the Rural and Tribal Assistance Pilot Program.<sup>16</sup> Grant funding could cover vehicle acquisition, driver training focused on patient safety and needs, and administrative system development for scheduling and compliance.
  - **Monitoring and Evaluation:**
    - HI DHS or HI DOH could require participating hospitals and clinics to report on key metrics, including utilization rates, patient outcomes, and financial performance of transportation services.

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<sup>16</sup> U.S. Department of Transportation. “Rural and Tribal Grants.” *Build America Bureau*, 2025. <https://www.transportation.gov/buildamerica/RuralandTribalGrants>.

## **Policy Goal #4: Improve Public Transportation Options for Rural Residents**

### **Background**

Hawai‘i’s unique geography and rural areas pose significant challenges for residents needing access to healthcare services. While inter-island flights are often the primary mode of transportation for inter-island travel, they are costly and unreliable, particularly for rural populations. Public transportation in these areas also suffers from limited frequency and coverage, further compounding access issues. Alternative transportation options, such as ferries, and enhancements to public bus services could provide cost-effective solutions, improving accessibility and affordability for healthcare-related travel.

### **Policy Option #1: Explore Cost-Effective Alternatives to Inter-Island Flights**

High inter-island flight costs make air travel a significant barrier for rural residents who need to reach healthcare facilities on O‘ahu or Maui. Exploring cost-effective alternatives, such as expanded ferry services or seaglidors/waterplanes, could provide an affordable and sustainable solution. Expanding marine transit for medically necessary travel provides several benefits, including increased resilience and redundancy in the inter-island transportation network, lower greenhouse gas emissions compared to conventional air travel, cost-effective options for communities frequently impacted by air service cancellations or limited airline competition, and a more inclusive, multimodal approach that reflects the unique geography and needs of rural residents.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Feasibility Studies:**
    - i. UH or other research organizations could conduct studies to assess the economic, environmental, and operational viability of increasing the number of inter-island ferries, and potentially intra-island ferries on Oahu, as an alternative to flights. Research could evaluate potential expanded routes connecting underserved islands (e.g., Moloka‘i and Lāna‘i) to larger hubs such as O‘ahu or Maui, including if used particularly for medical needs and visits. Researchers should also collaborate with HI DOT to explore funding opportunities for ferry services and address regulatory requirements.
    - ii. The Hawai‘i State Legislature could commission a Task Force designed to explore cost-effective alternatives to inter-island flights.
    - iii. If ferry service were found to be feasible, HI DOH or HI DOT could take steps to meet with potential ferry providers on considerations for proposals.

## **Policy Option #2: Develop a Pilot Program for Clean-Fuel Inter-Island Medical Ferry Services**

Expanding sustainable marine transportation for NEMT could include piloting clean-fuel ferry services specifically tailored for inter-island medical travel. Such services could operate on short-distance maritime routes (e.g., Maui–Moloka‘i, Maui–Lāna‘i) and prioritize zero- or low-emission propulsion systems such as electric, hybrid, or hydrogen power. Unlike private or speculative ventures, this option would create a public-private partnership model focused on scheduled, reliable service aligned with medical appointments. The pilot would assess operational feasibility, patient access improvements, and environmental benefits.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Pilot Design and Route Selection:**
    - HI DOH and HI DOT Harbors Division could jointly coordinate a medical ferry pilot program for routes with high unmet NEMT need and viable maritime distances.
    - The pilot program could include onboard accessibility accommodations, priority booking for medically necessary travel, and coordination with rural hospitals and clinics.
    - Schedules would be designed around peak medical travel times and could include telehealth-enabling infrastructure onboard.
  - **Clean Fuel Requirements and Vessel Procurement:**
    - The program would prioritize vessels powered by electric, hydrogen, or hybrid propulsion, consistent with the HI DOT Energy Security and Waste Reduction Plan.<sup>17</sup> This plan identifies opportunities for inter-island and commercial marine vessels to transition to clean energy technologies, including battery-electric propulsion, hydrogen fuel cell systems, and biofuel-compatible engines.
    - If zero-emission vessels are not immediately available, the pilot program could begin with lower-emission biofuel-compatible vessels as a transitional step.
  - **Partnerships and Funding:**
    - Key partners of the pilot program could include HI DOT, the Hawai‘i Department of Land and Natural Resources (DLNR), HI DOH, county transportation agencies, and private-sector marine operators.

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<sup>17</sup> Hawai‘i Department of Transportation. Carbon Reduction Strategy: Hawai‘i DOT Carbon Reduction Strategy (CRS) November 2023. Honolulu: Hawai‘i Department of Transportation, 2023. <https://hidot.hawaii.gov/wp-content/uploads/2024/03/nov-2023-carbon-reduction-strategy.pdf>.

- Funding could be sourced from the FTA Ferry Grant Program,<sup>18</sup> the Maritime Administration (MARAD) Marine Highway Program,<sup>19</sup> and Inflation Reduction Act clean port and maritime infrastructure funds.<sup>20</sup>
- Additional federal opportunities include U.S. Department of Energy maritime decarbonization initiatives and public-private innovation challenge grants.

### Policy Option #3: Enhance Public and Private Bus Services

Public transportation in rural Hawai‘i is limited, creating significant barriers to healthcare access for residents who lack personal vehicles. Expanding bus services and improving transit infrastructure could provide more reliable and affordable transportation options for medical appointments. One example of such expanded bus services exists in Maui County, where the Maui Economic Organization (MEO), a private organization, operates public transit routes as contracted by the Maui County Department of Transportation.<sup>21</sup>

- **Policy Level:** State and Local, Programmatic
- **Implementation Framework:**
  - **Increase Frequency and Reliability:**
    - i. Counties and private transportation providers could expand public bus schedules and routes in rural areas to ensure consistent and convenient access to healthcare facilities, such as by implementing free bus services, modeled after Hawai‘i County’s zero-fare program, or expanding the MEO model.
  - **Infrastructure and Operational Investments:**
    - i. Counties and private transportation providers could utilize state and federal grants to improve bus stop infrastructure, including shelters and real-time tracking systems, to enhance usability and accessibility for residents. Programs could prioritize underserved areas with limited public transportation options. HI DOT could partner with counties to play a larger role in public transportation funding and planning.
  - **Strategic Transit Planning:**
    - i. Counties with populations exceeding 200,000 are eligible for and could explore the creation of Metropolitan Planning Organizations (MPOs)<sup>22</sup> to

<sup>18</sup> Federal Transit Administration. Ferry Programs. U.S. Department of Transportation. 2025. <https://www.transit.dot.gov/grants/fta-ferry-programs>.

<sup>19</sup> U.S. Maritime Administration. *America’s Marine Highway Program*. U.S. Department of Transportation. Accessed June 2, 2025. <https://www.maritime.dot.gov/grants/marine-highways/marine-highway>.

<sup>20</sup> U.S. Environmental Protection Agency. About the Clean Ports Program. Accessed June 2, 2025.

<https://www.epa.gov/ports-initiative/cleanports#:~:text=Public%20Engagement-,About%20the%20Clean%20Ports%20Program,quality%20planning%20at%20U.S.%20ports>.

<sup>21</sup> Maui Economic Opportunity, Inc. “Transportation Services.” *Maui Economic Opportunity*, 2025.

<https://www.meoinc.org/programs-services/transportation-services/>.

<sup>22</sup> U.S. Department of Transportation. (n.d.). Metropolitan Planning Organization (MPO). Federal Transit Administration. <https://www.transit.dot.gov/regulations-and-guidance/transportation-planning/metropolitan-planning-organization-mpo>

improve public transit strategic planning and funding allocation. Such public transit improvements should align with healthcare access needs. Honolulu County already operates a MPO, and the next county approaching eligibility to create an MPO is Hawai‘i County.

### **Policy Goal #5: Establish Medical Housing Programs for Traveling Patients**

#### **Background**

Access to specialized medical care often requires patients and their families to travel long distances, particularly in rural and underserved areas. This is especially challenging for individuals who require extended stays near major hospitals for treatment, such as those undergoing intensive therapies, managing chronic illnesses, or facing high-risk pregnancies. The financial and logistical strain of finding temporary lodging adds to the already significant emotional and physical stress of medical care. Developing medical housing programs modeled after programs such as Ronald McDonald Houses (which provide much-needed relief but are not able to meet all needs) could provide a practical and compassionate solution to these challenges, ensuring that patients can focus on recovery rather than logistics and financial strain.

#### **Policy Option #1: Create State-Operated Housing Options for Patients with Medical Needs**

Patients traveling for specialized or long-term medical care often struggle to find affordable lodging, adding financial and logistical stress to an already difficult situation. Establishing state-supported medical housing programs for patients and their companions/family could help alleviate these burdens and improve access to necessary care.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **State-Operated Housing Facilities for Medical Needs:**
    - i. HI DOH, in partnership with hospital systems and CBOs, could develop or purchase housing facilities near major hospitals. Facilities could provide affordable lodging, essential amenities, and wraparound support services, such as transportation and meal assistance. These partnerships could utilize state appropriations, hospital contributions, grants from programs such as the U.S. Department of Housing and Urban Development (HUD), and/or philanthropic organizations to fund such efforts.

#### **Policy Option #2: Grant Program for CBOs to Provide Patient and Family Housing**

Many community organizations already provide temporary housing for traveling medical patients but face funding constraints that limit their reach. Creating a state-funded grant program to support these organizations could expand access to affordable lodging for patients in need.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Grant Program Creation:**
    - HI DOH or HI DOT could establish a competitive grant program to fund CBOs offering free or reduced-rate housing for patients requiring extended stays for medical care. The grant could support infrastructure upgrades for housing facilities, operational costs for running medical housing programs, as well as wraparound services, such as transportation and meal assistance. The grant programs could emphasize coordination between transportation providers, health systems, and rural airports. HI DOH or HI DOT could utilize state appropriations, federal funding such as HUD’s Continuum of Care grants,<sup>23</sup> and/or philanthropic contributions to fund the grant program.

## INSURANCE COVERAGE

### **Policy Goal #1: Add NEMT as a Benefit in Traditional Medicare**

#### **Background**

Transportation barriers are a significant issue for Medicare beneficiaries in Hawai‘i, particularly older adults and individuals with disabilities who rely on traditional Medicare, which does not currently cover NEMT (unlike the federal/state Medicaid program). Seventeen percent of Hawai‘i residents are enrolled in Medicare, and 40% of those are enrolled in traditional Medicare.<sup>24</sup> Medicare Advantage plans sometimes include an NEMT benefit, but it is not standard across all plans. These barriers contribute to patients experiencing missed medical appointments, delayed care, and preventable complications. Incorporating NEMT as a standard benefit in traditional Medicare could improve healthcare access, enhance outcomes, and reduce healthcare costs by enabling timely medical interventions.

#### **Policy Option #1: Congressional Action to Mandate NEMT Coverage in Traditional Medicare**

Traditional Medicare does not cover NEMT, making it difficult for older adults and individuals with disabilities to reach healthcare services. Expanding Medicare to include NEMT as a covered benefit could improve access to care and reduce missed medical appointments.

- **Policy Level:** Federal, Legislative
- **Implementation Framework:**

<sup>23</sup> U.S. Department of Housing and Urban Development. “Continuum of Care (CoC) Program.” *HUD.gov*, accessed May 8, 2025. <https://www.hud.gov/hud-partners/community-coc>.

<sup>24</sup> KFF. “Election 2024: State Health Care Snapshots – Hawaii.” *KFF*, September 30, 2024. <https://www.kff.org/statedata/election-state-fact-sheets/hawaii/>.

- Congress could amend Medicare’s authorizing statutes to require the Centers for Medicare and Medicaid Services (CMS) to include NEMT as a covered benefit in traditional Medicare. Certain limitations could also be applied to the required coverage to limit financial impacts, including:
  - Requirement of healthcare provider certification of medical necessity of travel to ensure appropriate use of the benefit; and
  - Establishment of quality benchmarks for transportation providers, covering licensing, safety protocols, reliability, consistency, and additional customer service requirements.
- These implementation frameworks could be structured using current state Medicaid plans that cover NEMT, or by adapting specific Medicare Advantage frameworks that already cover NEMT for traditional Medicare.

**Policy Option #2: Establish a Centers for Medicare and Medicaid Innovation (CMMI) Pilot Program to Assess Feasibility**

Before considering legislation to expand NEMT coverage in Medicare nationwide, a pilot program through CMMI could help assess feasibility. Testing NEMT coverage in regions with high transportation barriers could provide valuable data on cost-effectiveness and patient outcomes.

- **Policy Level:** Federal, Regulatory, Executive
- **Implementation Framework:**
  - **Pilot Design:**
    - CMMI could create a pilot program to cover NEMT for certain traditional Medicare beneficiaries in targeted regions. The program could focus on high-need populations, including beneficiaries with chronic conditions or frequent medical appointments, and/or those in underserved rural areas.
    - CMMI evaluation metrics could include assessing reductions in missed appointments, monitoring changes in healthcare utilization patterns, such as reduced emergency department visits and hospitalizations, and measuring cost-effectiveness and beneficiary satisfaction.
  - **Scalability Analysis:** CMMI could examine operational challenges and cost implications to assess feasibility before consideration of nationwide implementation.

**Policy Goal #2: Reform Employer-Based and Private Insurance Policies to Cover NEMT**

**Background**

Current employer-based and private insurance plans often exclude coverage for transportation to healthcare services, leaving rural residents, particularly in Hawai‘i, with significant out-of-pocket costs for inter-island flights, ground transportation, and lodging. Some

insurers may cover the flight only, without covering family/companion service or wraparound needs or other incurred costs (e.g., missing work or daycare). Interviews with our stakeholders revealed cases where patients had to quit their jobs to qualify for Medicaid, which does provide some transportation benefits, or were forced to bear the high costs of temporary relocation for specialized care, such as high-risk pregnancies or cancer treatments. Without mandated coverage of transportation, rural residents face delayed or foregone care, worsening health outcomes and increasing reliance on emergency services. While insurers often cover the costs of medical services, the additional financial and logistical burden of travel remains unaddressed. This gap disproportionately impacts rural and neighbor island residents who must travel to O‘ahu or Maui for care unavailable locally.

### **Policy Option #1: Mandate Transportation Coverage in Employer-Based and Private Insurance Plans**

Employer-based and private insurance plans typically do not cover transportation costs for medical appointments, creating financial hardships for rural residents. Mandating coverage for medical travel, including flights and ground transportation, could help ensure more equitable healthcare access.

- **Policy Level:** State, Legislative
- **Implementation Framework:**
  - **Comprehensive Coverage Requirements:**
    - The Hawai‘i State Legislature could pass a bill to mandate that all employer-based and private insurance plans operating in Hawai‘i cover transportation costs for patients and one companion for medically necessary travel, including:
      1. Inter-island flights for specialized care unavailable on the patient’s home island.
      2. Ground transportation to and from airports and medical facilities.
      3. Lodging for patients and, where applicable, one companion, especially for maternal or chronic care cases requiring extended travel.
    - Such legislation could allow insurers the option to directly arrange travel and lodging for beneficiaries or require pre-authorization and expense documentation for reimbursement. The implementation framework could also be modeled in part by the coverage requirements currently in place through Hawai‘i Medicaid.
  - **Monitoring and Compliance:**
    - Oversight of the program could be accomplished through the Insurance Division of the Hawai‘i Department of Commerce and Consumer Affairs (DCCA) to monitor insurers’ compliance with coverage mandates and address patient concerns efficiently.

## **Policy Option #2: Implement Policy #1 in Phases with Geographic Focus**

Rolling out transportation coverage mandates in phases, starting with the most underserved regions, could allow for a more manageable and data-driven implementation process. Targeting high-need populations first could help refine the policy before expanding it statewide.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Rural Area Focus:**
    - Using the implementation framework in Policy Option #1 above, state legislation could begin with a pilot program including only rural and neighbor island areas, where healthcare transportation costs and barriers are most pronounced. The legislation could define geographic eligibility using data on healthcare access disparities and proximity to major medical facilities. For example, the pilot program could incorporate ICD-10 Z-codes (e.g., Z59.82 for Transportation Insecurity) to identify patients with significant transportation challenges, and streamline eligibility determinations using these codes before broadening coverage requirements.
    - The program could also focus initially on high-priority cases, such as maternal care, chronic disease management, cancer treatment, pediatric care, and/or dialysis. It could then expand coverage incrementally based on data on cost-effectiveness and patient outcomes.
    - Research and evaluations should be conducted regarding the phased implementation to determine future expansion efforts.

## **Policy Goal #3: Enhance Medicaid NEMT Coverage in Hawai‘i**

### **Background**

Medicaid does cover NEMT, which is a critical service, but issues in Hawai‘i include unique challenges due to the state’s geographic isolation, fragmented transportation infrastructure, and reliance on inter-island travel for specialty care. Medicaid beneficiaries, particularly those on neighbor islands and in rural areas, often encounter limited transportation provider availability, long wait times, and a lack of transportation options. Inter-island travel introduces additional barriers, such as high costs, logistical complexities, and the absence of integrated scheduling systems to align transportation with medical appointments. The current reliance on third-party agents for approval processes often leads to delays and inefficiencies, further exacerbating access issues.

## **Policy Option #1: Streamline Medicaid NEMT Approval Processes**

Medicaid beneficiaries in Hawai‘i often face long approval wait times for NEMT, sometimes 14-21 days, delaying necessary medical care. Streamlining the approval process and reducing administrative burdens could improve efficiency and ensure timely access to transportation.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Legislative Mandate for Timely Approval:**
    - Hawai‘i DHS Med-QUEST Division could require MCOs to process and approve NEMT travel requests within 7 days of submission, reducing delays from the current 14-21 day timeframe. The regulation could mandate that MCOs provide confirmed travel details to beneficiaries no later than two days before travel or five days after the request was submitted, whichever comes first.
    - The regulation could include mechanisms to prioritize approvals for high-risk or time-sensitive cases. MCOs could introduce options for same-day or urgent appointments that do not qualify for EMS transportation but address urgent medical needs.

## **MATERNAL-FETAL (MF) HEALTH**

### **Policy Goal #1: Improve Access to Maternal-Fetal (MF) Health Care Services**

#### **Background**

MF care is a vital part of the healthcare ecosystem, focusing on the overall wellbeing and health of women during pregnancy, childbirth, and postpartum. MF providers can help to ensure that patients have a positive experience from conception to birth and beyond. In addition, MF healthcare providers are vital in decreasing maternal and child mortality and morbidity rates as they are able to identify, prevent, and/or mitigate health complications. Because of Hawai‘i’s geographical isolation, many women living on neighbor islands are encouraged or required to fly to O‘ahu or Maui to seek MF health services throughout the pregnancy process. This may put a burden on the patient as it is stressful to travel while pregnant and it may incur additional costs which might not be covered by insurance (e.g., local transportation such as taxi/Uber/Lyft, air transportation, hotel, food). Not only do patients from rural areas often need to seek care throughout the pregnancy process on larger islands O‘ahu or Maui, but many are also required to give birth on O‘ahu or Maui, especially if it is a high-risk pregnancy or their home island does not have the resources to allow a person to give birth (e.g., Lāna‘i does not have a birthing center). Telehealth is also a critical component of solving these issues, which will be covered in Part 4 of this series.

In Part 2 of this report series, stakeholders often shared several common findings in regard to MF health, including: high-risk pregnancies requiring transport to O‘ahu or Maui via EMS/helicopter, high-risk and rural pregnancies relocating to O‘ahu or Maui to give birth, limited access to prenatal care services leading to the need for EMS, women in poverty and mothers experiencing houselessness facing additional transportation challenges, and limited obstetric care access across the state. With these findings come additional policy options that could improve access to MF health overall across the state.

### **Policy Option #1: Create a Grant Program for CBOs to Provide Patient Housing for MF Medicine Patients**

Limited availability of MF health specialists on neighbor islands forces many pregnant women to travel to O‘ahu or Maui for care, adding stress and financial strain. Expanding housing options for pregnant women traveling for care could greatly reduce barriers to accessing care.

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Grant Program Creation:**
    - HI DOH could establish a competitive grant program to fund CBOs offering free or reduced-rate housing specifically for patients requiring extended stays for MF care. Funding for the grant could utilize state appropriations and targeted philanthropic contributions from organizations focused on MF health. Grants could support:
      1. **Infrastructure Upgrades:** Improving housing facilities to meet the needs of pregnant women and their families from neighbor islands, including accommodations for dependents.
      2. **Operational Costs:** Sustaining programs that support MF patients.
      3. **Wraparound Services:** Providing transportation to medical appointments, meal assistance, and family support services.

### **Policy Option #2: Improve Incentives for MF Health Specialists to Travel to Neighbor Islands to Provide Care**

Oftentimes, patients have to travel long distances between islands to access in-person MF care. Creating pathways for MF health specialists to travel to where the patients are and provide care without requiring the pregnant women to travel could improve outcomes and access.

- **Policy Level:** Federal and State
- **Implementation Framework:**
  - **Grant and Funding Framework:**
    - HI DOH or HI DOT could develop a program (or partner with insurers to co-develop a program) that provides a comprehensive travel incentive

package for MF providers that are willing to travel to neighbor islands, including stipends, travel reimbursements, housing allowances, and per diem support.

- The program could include a centralized scheduling and resource-sharing platform to coordinate specialist visits, maximize efficiency, and prevent burnout. The program could also assign a dedicated program coordinator to oversee logistics and scheduling.
- Such a program could provide a model for providers from other specialties in the future, who also need to travel to neighbor islands to provide needed care.

### **Policy Option #3: Establish, Fund, and Staff Regional Health Hubs and Mobile Maternal Health Clinics on Neighbor Islands and in Rural Areas of Hawai‘i**

Mobile maternal health clinics and regional health hubs can bring essential prenatal and postpartum care directly to underserved communities, reducing the need for long-distance travel. Investing in these solutions could help improve maternal and infant health outcomes across the state. Clinics such as these are currently operated by Healthy Mothers Healthy Babies in Hawai‘i.<sup>25</sup>

- **Policy Level:** State, Programmatic
- **Implementation Framework:**
  - **Grant Program Development:**
    - HI DOH could establish a grant program allowing rural hospitals and clinics to apply for funding to create mobile maternal health clinics. Funding sources could include federal programs such as HRSA’s Rural Health Programs<sup>26</sup> and Title V Maternal and Child Health Services Block Grants,<sup>27</sup> along with state appropriations. Additional financial support could come from partnerships with private healthcare systems (e.g., Queen’s Hospital, Straub, Kaiser Permanente, Hawai‘i Pacific Health).
  - **Equipment and Facility Preparation:**
    - The mobile clinics could be equipped with essential maternal care tools, including ultrasound machines, telehealth systems, and diagnostic equipment. These clinics could be modeled after the Healthy Mothers Healthy Babies mobile clinics, currently operating on multiple neighbor islands.<sup>28</sup>

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<sup>25</sup> Big Island Now. "Healthy Mothers Healthy Babies Opens New Office and Mobile Clinic in Kailua-Kona." Big Island Now, February 14, 2023. <https://bigislandnow.com/2023/02/14/healthy-mothers-healthy-babies-opens-new-office-and-mobile-clinic-in-kailua-kona/>.

<sup>26</sup> Health Resources and Services Administration. "Rural Health Grants." *HRSA.gov*, 2025. <https://www.hrsa.gov/rural-health/grants>.

<sup>27</sup> Maternal and Child Health Bureau. "Title V Maternal and Child Health (MCH) Services Block Grant." *Health Resources and Services Administration*, accessed May 8, 2025. <https://mchb.hrsa.gov/programs-impact/title-v-maternal-child-health-mch-services-block-grant>.

<sup>28</sup> Big Island Now. "Healthy Mothers Healthy Babies Opens New Office and Mobile Clinic in Kailua-Kona." Big Island Now, February 14, 2023. <https://bigislandnow.com/2023/02/14/healthy-mothers-healthy-babies-opens-new-office-and-mobile-clinic-in-kailua-kona/>.

In addition to these policy options regarding MF care, Part 4 of this series will include further policies regarding MF care and telehealth.

## **Conclusion**

The transportation challenges in rural Hawai‘i significantly impact healthcare access, particularly for EMS, NEMT, insurance coverage, and MF health. Geographic isolation, limited inter-island flight availability, unreliable public transit, and high travel costs create substantial barriers that disproportionately affect underserved communities. These barriers often contribute to delays in medical care, poorer health outcomes, and increased financial burdens on individuals seeking essential healthcare services.

Our discussions with 40 stakeholders throughout this project have highlighted the urgent need for a comprehensive and multi-level policy response. Addressing transportation-related healthcare challenges requires efforts from federal, state, and local governments, as well as from healthcare institutions and private sector partners. Policy options presented in this report aim to address challenges highlighted in the literature review and stakeholder insights. Part 4 of this report will present additional policy options regarding how telehealth can decrease barriers to access to care in rural areas for MF health, especially where transportation issues are present.

By implementing these multi-tiered policy options, Hawai‘i can make meaningful strides toward a more equitable and accessible healthcare system. Reducing transportation barriers will contribute to improved health outcomes, fewer preventable complications, and a more resilient healthcare infrastructure for all residents, regardless of geographic location. Through strategic collaboration and investment in needed solutions, the state can enhance healthcare delivery and ensure that rural communities receive the timely medical care they need.



# **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**

**June 25, 2025**

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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.<sup>1</sup> Upstream policy decisions in this area significantly impact downstream health outcomes.<sup>2</sup> 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.

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<sup>1</sup> 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>.

<sup>2</sup> 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.<sup>3</sup> 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).<sup>4</sup> Maternity care deserts are defined as counties with no hospitals or birthing centers providing OB care, which are disproportionately located in rural communities.<sup>5</sup> As a result, rural areas are at greater risk of complications with pregnancy and delivery compared to urban areas.<sup>6</sup> 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.<sup>7</sup>

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<sup>3</sup> 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>

<sup>4</sup> “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>

<sup>5</sup> Ibid.

<sup>6</sup> “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](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)

<sup>7</sup> 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.<sup>8</sup> 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.<sup>9</sup> 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.<sup>10</sup>

### ***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.<sup>11</sup> 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.<sup>12</sup> Adequate prenatal care includes patient education, fetal monitoring, screening for

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<sup>8</sup> “2024 State Population Estimates.” Department of Business, Economic Development & Tourism, Dec 19 2024. <https://census.hawaii.gov/main/2024-state-pe/>

<sup>9</sup> 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>

<sup>10</sup> 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/>

<sup>11</sup> Ibid.

<sup>12</sup> 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.<sup>13</sup> 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.<sup>14</sup> 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.<sup>15,16</sup>

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.<sup>17</sup>
- 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.<sup>18</sup>
- 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.<sup>19</sup>

### ***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.<sup>20</sup>

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<sup>13</sup>“2024 Health of Women and Children Report.” America’s Health Rankings, 2024.

<https://assets.americashealthrankings.org/app/uploads/hawaii-hwc2024.pdf>

<sup>14</sup>“2024 March of Dimes Report Card for Hawaii.” March of Dimes. <https://www.marchofdimes.org/peristats/reports/hawaii/report-card>

<sup>15</sup>“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/>

<sup>16</sup>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/>

<sup>17</sup>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>

<sup>18</sup>“Hawai‘i Physician Workforce Report 2024.” Hawaii/Pacific Basin AHEC.

<https://ahec.hawaii.edu/ahecsite-forhealthcareprofessionals/workforce-data.html>

<sup>19</sup>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>.

<sup>20</sup>“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.<sup>21</sup> For Pacific Islanders, this rises to 64.3%, compared to 28.3% overall.<sup>22</sup> 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.<sup>23</sup> Over 23% of patients in Hawai‘i live more than 30 minutes away from a birthing hospital.<sup>24</sup>

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.<sup>25</sup>

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

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<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

<sup>25</sup> 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.<sup>26</sup> Providing digital options such as phone-based pregnancy applications can increase the utilization of prenatal services, especially in maternity care deserts.<sup>27</sup> Additionally, hybrid approaches with in-person and telehealth visits can be equally effective to in-person visits without compromising the quality of care.<sup>28</sup> 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 telehealth visits and in-person visits.<sup>29</sup>

Telehealth approaches have also been successful in supporting mothers during the postpartum period, where most maternal deaths occur.<sup>30</sup> 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,<sup>31</sup> visits for smoking cessation,<sup>32</sup> and behavioral therapies for postpartum depression.<sup>33</sup>

## 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.<sup>34</sup> 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.<sup>35</sup>

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

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<sup>26</sup> Udegbe, Beverly C., Mark A Clapp, Allison S. Bryant “Disparities from bedside to “websites”: 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>

<sup>27</sup> “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>

<sup>28</sup> 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>

<sup>29</sup> Bush, James, Dilek E. Barlow, Jennie Echols, Jasmine Wilkerson, Katherine Bellewin. “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>

<sup>30</sup> 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>

<sup>31</sup> 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>

<sup>32</sup> 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>

<sup>33</sup> 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>

<sup>34</sup> 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>

<sup>35</sup> 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](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.<sup>36</sup> The survey revealed this discrepancy to be highest in Black and Hispanic patients, despite having equal access to technology.<sup>37</sup> 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.<sup>38</sup>

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.<sup>39</sup> 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.<sup>40</sup> 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.<sup>41</sup>

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<sup>36</sup> 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>

<sup>37</sup> Ibid.

<sup>38</sup> Moulai, 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>

<sup>39</sup> 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>

<sup>40</sup> 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/>](<https://www.kff.org/medicare/issue-brief/what-to-know-about-medicare-coverage-of-telehealth/>).

<sup>41</sup> 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.<sup>42</sup> 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.<sup>43</sup> 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.<sup>44</sup>

### *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,<sup>45</sup> though many specialties have benefited from the flexibility of remote care, such as urgent care and chronic disease management.<sup>46</sup>

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.<sup>47</sup> 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.<sup>48</sup> 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.<sup>49</sup>

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

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<sup>42</sup>Hawaii State Legislature. "SB 2395 (2016)." *Hawaii State Legislature*.  
[https://www.capitol.hawaii.gov/sessions/session2016/bills/GM1328\\_PDF](https://www.capitol.hawaii.gov/sessions/session2016/bills/GM1328_PDF)

<sup>43</sup>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](https://www.chartis.com/sites/default/files/documents/Chartis_Telehealth_Trend_Analysis_OCT-2022.pdf).

<sup>44</sup>Anderson, Bret, Kendra Carr, and Clayton Donahue. "Telehealth Now a Permanent Fixture for U.S. Healthcare Delivery." Chartis, October 31, 2022.

<sup>45</sup>Ibid.

<sup>46</sup>Ibid.

<sup>47</sup>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>.

<sup>48</sup>Laferrriere, 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.

<sup>49</sup>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.<sup>50</sup> 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.<sup>51</sup> This is due in part to limited technology installations.<sup>52</sup> 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).<sup>53</sup>

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).<sup>54</sup> Patients with lower incomes or those with poor technology literacy are more likely to have audio-only visits,<sup>55</sup> 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.<sup>56</sup> This may be linked to varying levels of comfort with the English language, lacking the necessary

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<sup>50</sup> 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>.

<sup>51</sup> Definitive Healthcare. “Hospital telehealth adoption by state.” February 12, 2024. <https://www.definitivehc.com/resources/healthcare-insights/hospital-telehealth-adoption-by-state>

<sup>52</sup> Definitive Healthcare. “Hospital telehealth adoption by state.” February 12, 2024. <https://www.definitivehc.com/resources/healthcare-insights/hospital-telehealth-adoption-by-state>

<sup>53</sup> “Hawaii Broadband Strategic Plan.” *Department of Business, Economic Development & Tourism, Office of Planning, State of Hawaii*. October 2020.

<sup>54</sup> 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](https://www.chartis.com/sites/default/files/documents/Chartis_Telehealth_Trend_Analysis_OCT-2022.pdf)

<sup>55</sup> *Ibid.*

<sup>56</sup> 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.<sup>57</sup>

## 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 Lāna‘i [in a medical setting], so [they] must relocate."*

*-Lāna‘i 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 Hawai‘i often include conducting a telehealth visit with the O‘ahu provider at a neighbor island facility<sup>58</sup>. Even with

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<sup>57</sup> Ibid.

<sup>58</sup> 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).<sup>59</sup> 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.<sup>60</sup>

## **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:**

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

<sup>60</sup> 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,<sup>61</sup> 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.

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<sup>61</sup> 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,<sup>62</sup> 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<sup>63</sup> or the Veterans’ Affairs Telehealth Grant Program<sup>64</sup> 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.<sup>65</sup>
    - 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

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<sup>62</sup> Broadband Hui. Broadband Hui: Advancing Digital Equity in Hawai‘i. 2025. <https://www.broadbandhui.org/>.

<sup>63</sup> 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>.

<sup>64</sup> 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>.

<sup>65</sup> 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.



**SERIES ADDENDUM:**  
***“The Impacts of Transportation and Travel Access  
on Rural Health in Hawai‘i”***

**Reviewer Comments**

**Comment from Mokulele Airlines on May 26, 2025:**

“The interviews that are the basis of this study were conducted between January 2024 and June 2024. The operational difficulties that the airline experienced during those dates were unique to the specific circumstances of that time period and are no longer affecting the airline's reliability and on-time performance.

**“Operational Context and Transformation:** During the study period, Mokulele was undergoing a significant organizational transformation that fundamentally changed both our operational culture and management approach. As a small-cap company, we face unique challenges in navigating operational disruptions compared to larger carriers with greater resource flexibility and redundancy. The operational issues documented in this study were directly linked to several specific factors that have since been resolved:

“In 2024, there was a global shortage of landing gear for our specific aircraft type. Though the landing gear on our aircraft were operationally sound, many of them reached the end of their regulatory lifecycle. This led to multiple aircraft being unavailable in early 2024. Over the last 12 months the manufacturer has been able to produce these essential back-ordered components. Additionally, in the first half of 2024, Mokulele operated two 28-seat Saab 340 Aircraft. This aircraft type did not meet the operational needs of our route network and were removed from the fleet in summer 2024.

**“Management Changes and Fleet Simplification:** New management implemented significant strategic changes to address the operational complexity that existed during the study period. A key decision was to focus on operating a single fleet type, eliminating the operational challenges and inefficiencies associated with maintaining multiple aircraft types. The Saab 340s were specifically exited in summer 2024 as part of this fleet rationalization strategy, as their operational requirements created unnecessary complexity for a small-cap airline and diverted resources from our core operation.

**“Small-Cap Operational Realities:** As a smaller airline, supply chain disruptions and fleet management challenges have disproportionate impacts on our operations compared to major carriers. Our organizational transformation, led by new management, has focused on building more resilient operational processes through simplification and developing contingency management capabilities that better suit our scale and market position.

“Mokulele believes it is more important to evaluate current operational trends when assessing the state of inter-island travel, rather than focusing on a snapshot in time—especially one that is over a year old and reflects a period when the global supply chain was still recovering from COVID-era shutdowns and our company was in active transformation.

“In this month alone (May 2025), Mokulele is on-pace to have a completion factor over the industry average of 98%, which will be its best performing month since November of 2022, demonstrating the effectiveness of our operational and cultural transformation initiatives under new management.”