Appendix C: Proposed Methods

Introduction

In 2021, the Legislature enacted ESHB 1196, which required audio-only telemedicine be a covered service reimbursed at parity with health services provided in person. Section 8 of ESHB 1196 directs the Office of the Insurance Commissioner (OIC), in collaboration with the Washington State Telehealth Collaborative (WSTC) and the Health Care Authority (HCA), to study and make recommendations related to audio-only telemedicine. The OIC and collaborators engaged the Value & Systems Science Lab (VSSL) at the University of Washington School of Medicine to assist with this directive.

In collaboration with the OIC, WSTC, and HCA, VSSL (1) performed a literature review on regulatory experiences, costs, and clinical effectiveness of audio-only telemedicine, (2) conducted a web-based survey of commercial carriers and Medicaid Managed Care Organizations to evaluate specific domains relevant to coverage of audio-only telemedicine, (3) conducted an audio-only telemedicine utilization analysis of audio-only telemedicine utilization trends in Washington state between January 2022 and November 2022, and (4) developed a set of proposed methods for future evaluations to measure the impact of audio-only telemedicine on access to health care services for historically underserved communities and geographic areas. This report contains information from the fourth component (proposed methods).

Proposed Methods to Measure the Impact of Audio-Only Telemedicine on Access to Health Care Services for Historically Underserved Communities and Geographic Areas

Defining Historically Underserved Communities and Geographic Areas

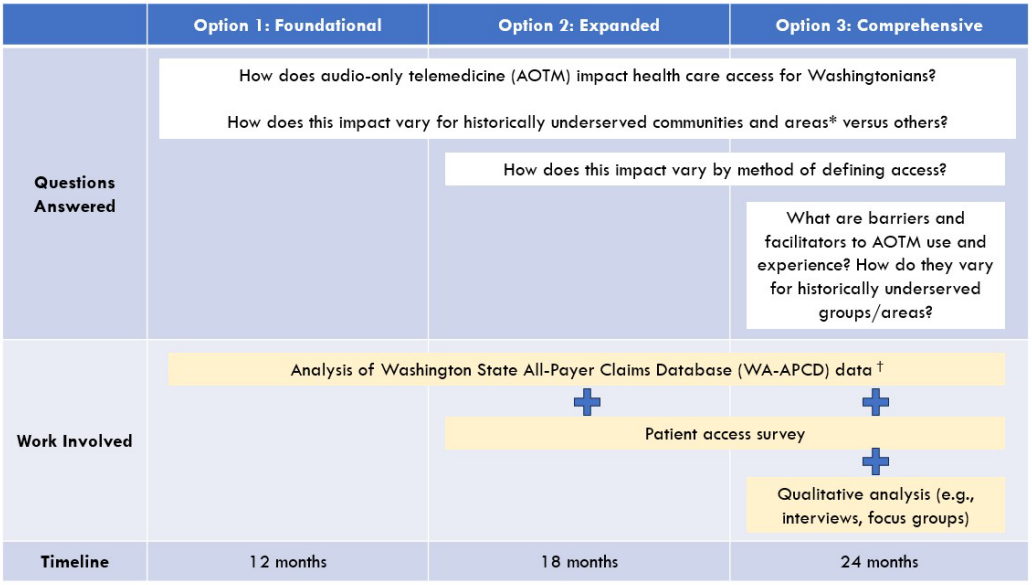
Specific definitions for historically underserved communities and geographic areas are not outlined in ESHB 1196, and there are multiple ways to do so. For instance, groups such as the Agency for Healthcare Research and Quality have defined priority populations (Agency for Healthcare Research and Quality, 2019). Prior evaluation work conducted by VSSL has aligned with such definitions and included racial and ethnic minorities, individuals enrolled in Medicaid, and individuals residing in neighborhoods with socioeconomic disadvantage or rural areas.

Evaluation Options

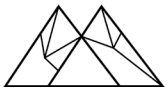
Below, we outline three options for conducting evaluations to measure the impact of audio-only telemedicine on access to health care services for historically underserved communities and geographic areas (*Figure 1*).

These options span quantitative and qualitative analyses and a range of potential evaluation methods, with quantitative evaluation involving retrospective analyses of state-wide claims data and/or patient access surveys; and qualitative evaluation involving focus groups or semi-structure interviews.

Figure 1. Summary of evaluation options



Option 1 (*foundational* evaluation) would involve quantitative analysis of claims using the Washington All-Payer Claims Database (WA-APCD) to address how audio-only telemedicine impacts health care access for Washingtonians, and in particular, historically underserved groups and geographic areas. Option 2 (*expanded* evaluation) would involve this claims analysis, in addition to a patient access survey to create and analyze new patient-centered measures of access, with a focus on historically underserved groups and areas. Option 3 (*comprehensive* evaluation) would include components from Option 1 and Option 2, as well as qualitative focus groups and/or semi-structured interviews to assess, in addition to the impact of audio-only telemedicine on health care access, the barriers and facilitators to audio-only telemedicine use and experience, and how these issues vary for historically underserved groups and areas. More detail about each option is provided below.



Option 1: Foundational

Activities in this option would involve retrospective quasi-experimental analyses using existing administrative and claims data. Quasi-experimental analyses use advanced statistical methods to approximate experimental conditions in order to increase the rigor in evaluation results – that is, compared to simpler analyses, quasi-experimental methods increase the confidence that decision-makers can have in evaluation findings.

In this case, quasi-experimental analyses would focus on assessing the impact of audio-only telemedicine on utilization-based measures of health care access, each of which has been strongly linked in prior work to individuals' access to a usual source of care. We recommend considering candidate measures such as (a) completion of preventive care measures including receipt of cancer screening; (b) preventable ED visits; and (c) hospitalizations for ambulatory care sensitive conditions (ACSC). These hospitalizations for ACSC are defined by the Agency for Healthcare Research and Quality as hospitalizations for exacerbations of acute (e.g., appendicitis) or chronic conditions (e.g., heart failure, diabetes, asthma) that in many cases could be avoided with adequate outpatient care (Freund et al., 2013). In turn, high rates of such hospitalizations suggest outpatient access barriers.

Based on extensive experience evaluating the impact of national and regional policies using administrative data, we believe that the primary quasi-experimental method for consideration in this evaluation approach would be difference-in-differences (DID). This method compares changes in outcomes, before versus after a policy or change of interest between individuals in an exposure versus control groups. In this particular case, a DID approach would generate findings

about changes in access, before versus after an audio-only telemedicine policy change, among individuals who do versus do not receive audio-only telemedicine.

To assess whether access changes disproportionately for historically underserved versus other communities or areas, DID analysis can be adjusted to estimate and compare effects between subgroups of historically underserved communities and geographic areas. For instance, DID can be used to estimate how access changed following implementation of an audio-only telemedicine policy, and compare these changes between selected subgroups (e.g., individuals with higher versus lower income, rural vs. non-rural Washingtonians). One key benefit of the DID approach is the ability to account for larger, overall trends in access that occur over time that are experienced by all individuals, regardless of audio-only telemedicine use.

Because different quasi-experimental methods may perform better with certain types of data, we also recommend consideration of additional methods beyond DID. Other methods include cross-temporal DID analysis (Gozalo et al., 2015), a method that would leverage increases in use of audio-only telemedicine over time and improve the comparability between individuals who receive versus do not receive audio-only telemedicine services. Distinct from the DID approach described above, a cross-temporal approach would use statistical matching techniques to identify a group of individuals who receive audio-only telemedicine based on its uptake over time; and another group of individuals with similar characteristics to the audio-only telemedicine group, but who do not receive audio-only telemedicine. Another approach would be a synthetic control method, which compares a given group (in this case, individuals who receive audio-only

telemedicine) to another group constructed using a weighted average (in this case, a weighted average of individuals who do not receive audio-only telemedicine).

We believe that together, these methods would not only maximize evaluation rigor and help address the objective, but they would also be feasible given readily available datasets such as the WA-APCD. This confidence is based on our team's prior work constructing and analyzing datasets for audio-only telemedicine services, and other types of utilization using data from the WA-APCD and state Medicaid claims.

One limitation of analyzing WA-APCD data is high (approximately 50%) levels of missingness for beneficiaries' race and ethnicity. Measures of homelessness and income are also not available within the WA-APCD. However, beneficiaries insured by Medicaid, residents of rural areas, and those residing in health professional shortage areas or areas of high socioeconomic disadvantage could be identified in the WA-APCD.

An evaluation based on this approach would answer several key questions about audio-only telemedicine:

1. How does audio-only telemedicine impact health care access for Washingtonians?
2. How does this impact vary for historically underserved communities and areas versus others?

Ultimately, results from DID or other quasi-experimental methods will quantify the degree to which audio telemedicine changes use of preventive care measures and avoidable, high-cost

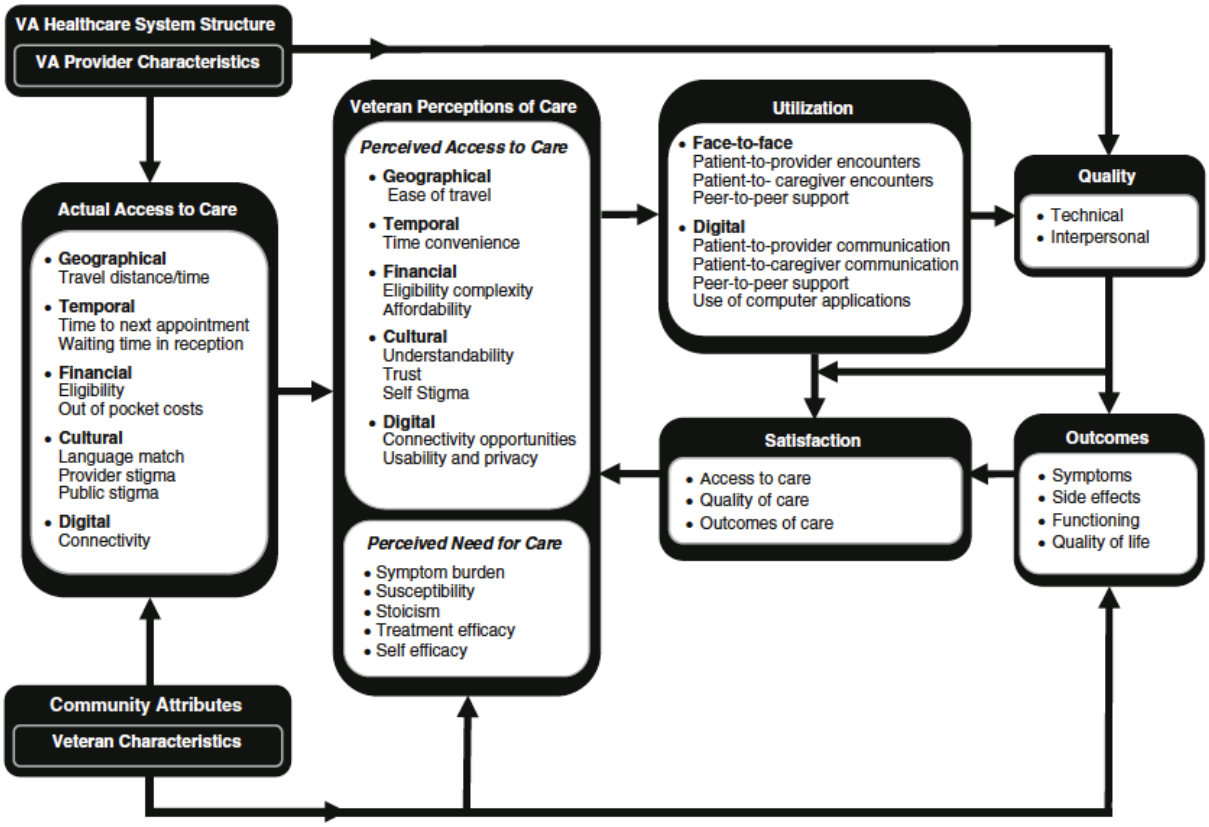
health care utilization; determine whether these impacts are meaningfully large; and assess whether estimates differ in ways that reflect disparities facing historically underserved communities and areas.

Findings from the *Foundational Evaluation* would impact policy by quantifying potential benefits of audio-only telemedicine will provide evidence to support efforts for expanding its use in Washington State. Detailed breakdowns by historically underserved communities and areas will promote equity by informing whether targeted efforts are necessary, and where these efforts potential efforts are needed.

Option 2: Expanded

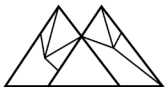
Activities in this option would involve all activities in the *Foundational Evaluation* plus the design, collection and analysis of new patient access survey. Prior work by members of the VSSL team underscore the multidimensional nature of health care access (Fortney et al., 2011). For example, conceptual models created in other settings posit 5 dimensions of access: geographical, temporal, financial, cultural and digital (*Figure 2*).

Figure 2. Conceptual model of access from Fortney et al. (2011).



Though devised for Veteran populations, this model has relevance for evaluations of audio-only telemedicine among Washingtonians. The model highlights several patient-centric measures that are relevant to understanding access but are unfortunately unavailable in existing claims data sources in Washington, including the WA-APCD.

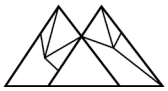
We believe this gap is particularly problematic because, as posited by the model, patient-centric measures of access should encompass how individuals perceive and experience access. For example, driving times are an objective measure of access frequently used in prior work. However, the inconvenience of traveling a given distance likely differs across individuals. In



short, patient-centric measures are central to understanding important facets of access, but these measures are not widely available. As such, this evaluation option provides a method for addressing this gap, developing a new survey to understand the potential benefits of audio-only telemedicine on access.

Survey development would focus on the designing questions capturing patient-centric measures of access, including those in *Figure 2*. Patient-centric measures that could be captured through a survey include appointment wait times; language match and concordance (e.g., in race, ethnicity, or gender) between patients and clinicians; and digital connectivity. The survey could also capture perceptions of whether audio-only telemedicine has enhanced access as described by having a usual source of care, ease of travel, time convenience, provider trust and usability of digital options, ability to manage one's chronic illnesses, and ability to address acute concerns without traveling to urgent care or the Emergency Department. This patient access survey would also include measures from existing surveys (e.g., Consumer Assessment of Healthcare Providers and Experiences) and prior research (Pyne et al., 2020).

We recommend that the survey sampling frame include a random sample of Washington residents enrolled in commercial insurance, Medicaid or Medicare Advantage – populations that could be identified from datasets as the WA-APCD. It would also be worthwhile to consider oversampling of individuals from historically underserved communities and areas, and individuals from populations that use audio-only telemedicine. Sampling could occur at multiple time points over time to capture variation in access over time. Importantly, this patient access survey would enable evaluation of access issues facing historically underserved groups, such as



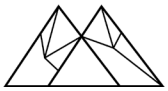
racial and ethnic minorities, that are difficult to study via the *Foundational Evaluation* method alone (e.g., using the WA-APCD).

Data from the patient access survey could be analyzed in several ways. Descriptive analyses can characterize access over the entire study sample and compare access between historically underserved communities and areas, versus other communities and areas. Descriptive estimates of patient-centric access measures (e.g., percent of patients receiving care needed within 7 days) would provide a benchmark for assessing access to care and quantifying the desirability of audio-only telemedicine. These estimates would provide insights into facets of access that are salient to patients.

Adjusted multivariable analyses can examine associations between patient characteristics, community-level characteristics, and health care access. Given sufficient sample size, survey data could be analyzed using DID or other quantitative methods described in the *Foundational Evaluation* option to estimate the effects of audio-only telemedicine use on access as measured by new survey-based patient-centric measures. All analyses could apply survey weights to account for the survey sampling design and non-response.

An evaluation based on this approach would build on the *Foundational Evaluation* option to answer several key questions about audio-only telemedicine:

1. How accessible is care to Washingtonians across patient-centric measures?
2. How does audio-only telemedicine impact health care access for Washingtonians?



3. How patient-centric access and the impact of audio-only telemedicine vary for historically underserved communities and areas versus others?
4. How does this impact vary by method of defining access?

Findings from a patient access survey will provide a benchmark for assessing access to care and evaluations examining the impact of audio-only telemedicine. Estimates using patient-centric measures provides insights into access dimensions more proximal to beneficiaries, compared to claims-based measures in the *Foundational Option*. Quantitative estimates from the Expanded option will build upon estimates in the *Foundational Option* by quantifying the effects of audio-only telemedicine across a broader set of access measures (moving from solely claims-based measures to patient-centric measures). All analyses in the Expanded option will present stratified estimates across each historically underserved community or area, allowing for more targeted insights. Ultimately, this work would provide a broader assessment of the impact of audio-only telemedicine on access to care, and offer potential directions for future policy changes and care programs.

Findings from the *Expanded Evaluation* would impact policy by providing a comprehensive picture of the effects of audio-only telemedicine on access to care. Potential estimates that indicate the benefit of audio-only telemedicine in improving patient-centric access measures would generate stronger support for efforts expanding its utilization in Washington State. Detailed breakdowns by historically underserved communities or areas will inform where potential targeted efforts are needed.

Option 3: Comprehensive

Activities in this option would include all activities in the *Foundational Evaluation* and *Expanded Evaluation* options, plus the design, collection and analysis of new qualitative data capturing patients' real-world experiences accessing care via audio-only telemedicine. Qualitative analysis would provide confirmatory evidence of findings from survey analyses; produce greater detail around quantitative estimates; and yield new insights into patients' experiences not captured in survey data. Importantly, qualitative insights would add the patient voice in ways that surveys and retrospective analyses cannot.

Qualitative data collection, in the context of focus groups of individual semi-structure interviews, would be conducted using an interview guide with open-ended questions designed to allow patients to provide contextual detail on specific findings from qualitative analyses and elaborate on their own experiences accessing health care. Since audio-only telemedicine remains a relatively new modality of health care reimbursed since COVID-19 began in 2020, qualitative methods offer the advantage of revealing dimensions of care access that might not otherwise be immediately apparent to policy and practice leaders.

We recommend that the survey sampling frame include a purposive sample of Washingtonians that includes representation of individuals from historically underserved communities and areas, as well as patients who have received audio-only telemedicine. Qualitative data could be collected through 30-45-minute semi-structured interviews conducted in 1:1 settings or group (focus group) settings. Interviews would be recorded and transcribed for analysis via both inductive and deductive thematic content analysis to identify emergent themes related to access

to care and receipt of audio-only telemedicine. Themes would be assessed across the whole qualitative study sample, and compared between historically underserved versus other groups.

An evaluation based on this approach would build on *Foundational Evaluation* and *Expanded Evaluation* options to answer a set of key questions about audio-only telemedicine:

1. How does audio-only telemedicine impact health care access for Washingtonians?
2. How does this impact vary for historically underserved communities and areas versus others?
3. How does this impact vary by method of defining access?
4. What are barriers and facilitators to audio-only telemedicine use and experience? How do they vary for historically underserved groups/areas?

Qualitative insights would amplify the voices of patients and communities, providing real-world context for quantitative findings from retrospective or survey analyses. Findings from qualitative evaluation would impact policy by identifying specific ways in which audio-only telemedicine could improve access to care—and potentially ways in which these telemedicine services could either facilitate or impede or delay access to definitive care. Describing these dynamics for historically underserved groups would help inform strategies to tailor approaches to address unique access gaps experienced by different communities and areas.

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