WASHINGTON STATE DEPARTMENT OF HEALTH

STRENGTHENING MATERNAL AND CHILDHOOD IMMUNIZATION THROUGH CHW-CENTERED DIGITAL TOOLS:

A FEASIBILITY ASSESSMENT FOR WASHINGTON STATE

Washington State Department of HEALTH

DOH 420-711 May 2026

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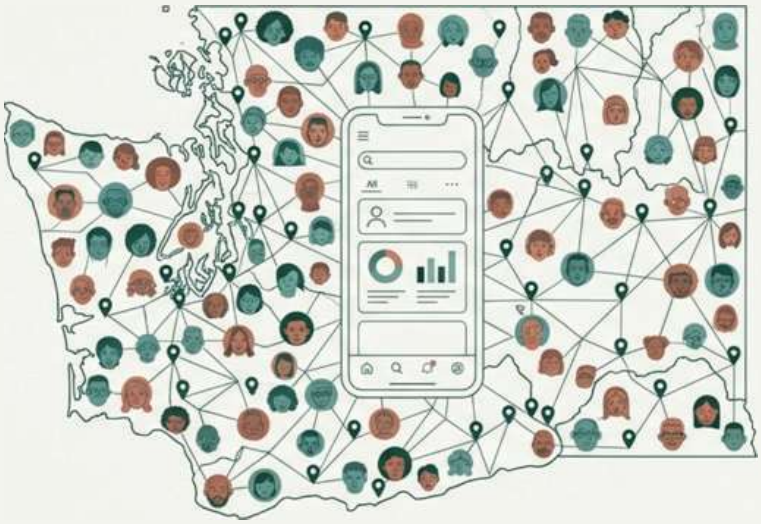

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PROJECT PERIOD 2025 - 2026
WASHINGTON STATE DEPARTMENT OF HEALTH GLOBAL TO LOCAL PROGRAM

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This feasibility assessment was led by the Global to Local (G2L) Program at the Washington State Department of Health (DOH). Patience Komba, Pathways Professional with the Global to Local Program and Doctoral Student at the University of Washington led this work. Nancy Puttkammer, Director, Global to Local Program; Sameera Pochiraju, Global to Local Program Manager, and Jennifer Whittemore, Project Manager with the Office of Innovation and Technology advised and provided oversight of the feasibility assessment.

We are grateful to the DOH program teams whose engagement, expertise, and guidance shaped this work, including the Office of Immunization, the Prevention and Community Health (PCH) Division, the Community Health Worker Training Program, the Office of Innovation and Technology (OIT), and the Community Collaborative. We thank the CHW Leadership Committee for its guidance throughout the assessment, the CHW Training Program manager and all individuals that helped distribute the statewide survey. We are also grateful to Yakima Neighborhood Health Services, Comagine Health, and the digital health vendors and informatics partners who shared their expertise and technical perspectives that informed this work and helped connect the assessment team to Community Health Workers.

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We consulted many individuals during this assessment. We acknowledge each one of you for your unique voice and contribution that helped shape this work.

SUGGESTED CITATION

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ABBREVIATIONS

ABBREVIATION	DEFINITION
ACH	Accountable Community of Health
API	Application Programming Interface
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CFI	Call for Interest
CFIR	Consolidated Framework for Implementation Research
CHW	Community Health Worker
CIE	Community Information Exchange
CoP	Community of Practice
COVID-19	Coronavirus Disease 2019
DOH	Washington State Department of Health
DSHS	Washington State Department of Social and Health Services
EHR	Electronic Health Record
FGD	Focus Group Discussion
FPHS	Foundational Public Health Services
G2L	Global to Local Program
HCA	Washington State Health Care Authority
HIPAA	Health Insurance Portability and Accountability Act
IRB	Institutional Review Board
KII	Key Informant Interview
LHJ	Local Health Jurisdiction
mHealth	Mobile Health
MVP	Minimum Viable Product
NASHP	National Academy for State Health Policy
OIT	DOH Office of Innovation and Technology
OPAE	DOH Office of Public Affairs and Equity
PCH	DOH Prevention and Community Health Division
PII	Personally Identifiable Information
POP	Power of Providers Initiative
RSV	Respiratory Syncytial Virus
SMS	Short Message Service
Tdap	Tetanus, Diphtheria, and Acellular Pertussis Vaccine
WCAG	Web Content Accessibility Guidelines
WHO	World Health Organization
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children

CONTENTS

1 EXECUTIVE SUMMARY

Context

Persistent disparities in maternal and early childhood immunization coverage continue to affect families across Washington State, with disproportionate impacts among immigrant, refugee, multilingual, and other underserved populations. These disparities are driven by a combination of structural and social barriers, including language barriers, misinformation, inconsistent access to care, and long-standing distrust of health institutions. Community Health Workers (CHWs), as trusted messengers who often share the linguistic, cultural, and lived experiences of the communities they serve, are uniquely positioned to address these challenges.

In response to these and related equity gaps, the Washington State Department of Health (DOH) established the Global to Local (G2L) Program in 2024 to identify, adapt, and scale evidence-based strategies for improving the health of disadvantaged communities in Washington. In particular, the Global to Local Program supports health equity through digital health initiatives and community- and CHW-led health education, with a particular focus on vaccine confidence and access.

Purpose and Methods

This report assesses the technical, operational, and financial feasibility of developing a CHW-oriented mobile health application to support maternal and early childhood immunization outreach. The feasibility assessment used a mixed-methods approach, drawing on:

- A desk review of Washington's CHW workforce landscape and existing digital health initiatives
- Stakeholder consultations, including key informant interviews (KIIs) and focus group discussions (FGDs) with CHWs, CHW leadership, DOH program teams, and technical experts
- A statewide survey of 112 CHWs and community partners, conducted in July 2025
- A structured options analysis comparing five progressive app design pathways

Findings from these data sources were triangulated to identify feasibility conditions, constraints, and design considerations relevant to investment, development, and implementation decisions.

Key Findings

- **CHW workforce and readiness:** Washington State has a large, decentralized CHW workforce, with more than 2000 individuals trained through DOH programs across all 39 counties. Survey findings indicated high levels of digital engagement and confidence among CHWs. However, many CHWs relied on personal devices, faced connectivity limitations, and worked within organizations with varying levels of digital readiness and support.

- **Stakeholder priorities and constraints:** CHWs and program stakeholders expressed strong interest in a digital tool that provides standardized, culturally grounded vaccine information and supports identifying and navigating local healthcare, public health, and social services. At the same time, stakeholders cautioned consistently against duplicating existing systems, imposing complex documentation requirements, or increasing the administrative burden on CHWs.

- **Technical feasibility:** Stakeholder input highlighted that feasibility is strongest for a low-complexity tool that does not initially attempt integration with clinical data systems such as electronic health records, which would substantially increase cost, implementation risk, and maintenance requirements.

- **Governance and stewardship:** The assessment did not identify an organization outside DOH positioned to serve as a long-term steward for a CHW mHealth application, and no single DOH unit was positioned to assume sustained operational ownership within the available project timeline. This stewardship constraint, rather than a lack of interest or technical feasibility, emerged as the central determinant of the implementation pathway.

Feasibility Judgment

The assessment indicates that a maternal immunization mHealth application is feasible only under specific conditions. Feasibility is strongest when the tool is simple, low-burden, multilingual, privacy-preserving, and capable of operating in low-bandwidth or offline environments. The tool must support CHW education and navigation activities without replacing or undermining the relational nature of CHW-client interactions.

Given the absence of a clear long-term steward within the project's 14-month operational window, DOH pursued a decentralized, local seed-funding approach in which Local Health Jurisdictions (LHJs) lead digital health initiatives responsive to local CHW workflows and community priorities. This finding does not negate the potential future value proposition of a CHW-oriented mHealth application. Still, it identifies the governance and stewardship conditions that would need to be in place for such a tool to be developed and sustained at scale.

2 INTRODUCTION AND BACKGROUND

Immunization Disparities in Washington State

Persistent disparities in maternal and early childhood immunization coverage continue to affect families across Washington State. These gaps are especially pronounced among immigrant, refugee, multilingual, and other underserved populations, where families often face a combination of structural and social barriers, including limited awareness of recommended vaccines, misinformation and safety concerns, inconsistent access to care, language and cultural barriers, and long-standing systemic distrust of health institutions.[1]

A recent statewide analysis of vaccine coverage at ages 36 months and 7 years documented substantial variation in the completion of routine childhood immunizations by parental birth country.[2] Children with one or both parents born outside the United States had lower coverage for several recommended vaccines than children of U.S.-born parents, with particularly marked differences observed among families with parental birth countries including Ukraine, Russia, Moldova, and Somalia. These coverage differences reflect distinct health norms, migration histories, language access barriers, prior exposure to misinformation, and varying levels of trust in health institutions across communities, rather than any attribute of the communities themselves.

Recent epidemiologic trends reinforce the urgency of strengthening immunization outreach. In 2024, Washington State reported 2,293 confirmed and probable pertussis cases, a 25-fold increase over 2023[3]. Infants under 12 months of age experienced the highest incidence rate (approximately 238 cases per 100,000 population), reflecting their increased vulnerability to severe disease outcomes. Because maternal Tdap vaccination during pregnancy provides passive protection to infants in their first months of life, strengthening maternal immunization outreach represents a critical public health strategy to prevent severe disease among infants. Based on these epidemiological priorities and on the recommendation of the DOH Office of Immunization, the current initiative began by focusing on maternal immunization as the entry point for a CHW-oriented digital tool.

1. *Immunization-Coverage-in-Washington-State-and-Barriers-and-Strategies-Identified-From-Providers-Slides.pdf*
2. *Vaccine Coverage at 36 Months and 7 Years by Parental Birth Country, Washington State | Pediatrics | American Academy of Pediatrics*
3. *Washington State Department of Health. Washington State Annual Pertussis Summary, 2024 (Final Data). Olympia, WA: DOH; 2025. Publication 348-254. Available from: https://doh.wa.gov/sites/default/files/2025-05/348-254-PertussisSummaryWA2024.pdf*

Community Health Workers and Digital Health: Two Evidence-Based Strategies for Advancing Health Equity

This feasibility assessment is situated at the intersection of two evidence-based global health strategies, each shown to advance health equity, and whose combination has been underexplored in Washington State.

Community Health Workers.

CHWs are frontline public health workers who share the linguistic, cultural, and lived experiences of the communities they serve, and who function as trusted messengers, educators, and care navigators.[4] A substantial evidence base demonstrates that CHW-delivered interventions improve immunization coverage, enhance access to preventive services, and reduce disparities in health outcomes.[5,6.] The Community Health Impact Coalition and the Exemplars in Global Health program have further synthesized evidence that professionalized CHW programs, characterized by training, supportive supervision, fair compensation, and integration into the health system, produce measurable gains in population health.[5,7] CHWs are particularly important in supporting informed vaccine decision-making, addressing misinformation, facilitating access to prenatal care and immunization services, and bridging communities with health and social service systems.

Digital health tools for community-based outreach.

A parallel body of evidence documents the potential of mobile health (mHealth) interventions to support community-based health workers and to improve health outcomes in underserved populations. Systematic reviews have shown that low-cost mHealth strategies, such as SMS reminders, can positively influence vaccine uptake,[8] and that CHWs equipped with well-designed mHealth tools can extend their reach, improve the quality and timeliness of health education, and deliver greater impact within their communities.[9] The World Health Organization has published evidence-informed recommendations on digital interventions for health system strengthening that identify both the opportunities and the conditions under which such tools are likely to produce benefits.[10] At the same time, the literature documents persistent concerns about pilotitis, which is the proliferation of small-scale digital health pilots that fail to achieve sustained scale or impact, and emphasizes the importance of governance, stewardship, interoperability, and workflow integration for successful implementation[11.]

The feasibility of combining these two strategies, CHW-led outreach and digital tools, therefore, depends on whether the local context can support the design, deployment, and sustained stewardship of a tool that genuinely serves CHW workflows and community needs.This report evaluates that feasibility in the Washington State context.

4. The Community Health Worker Core Consensus (C3) Project Available from: c3_project_brief_with_lists__002_.pdf
5. Publication Archives - Community Health Impact Coalition
6. Community Health Workers in Low-, Middle-, and High-Income Countries: An Overview of Their History, Recent Evolution, and Current Effectiveness
7. Cross Country Synthesis: Community Health Workers - Exemplars In Global Health
8. Mobile Phone Text Message Reminders to Improve Vaccination Uptake: A Systematic Review and Meta-Analysis - PMC
9. The use and potential impact of digital health tools at the community level: results from a multi-country survey of community health workers - PMC
10. WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening - Evidence and Recommendations
11. Beyond pilotitis: taking digital health interventions to the national level in China and Uganda - PMC

The Global to Local Program

To strengthen community-based prevention strategies, the Washington State DOH established the Global to Local (G2L) Program in 2024. G2L was created to identify, adapt, and scale global health strategies that effectively serve Washington's globally connected communities, including immigrant and refugee populations. Guided by principles of community interconnectedness, culturally tailored approaches, costefficient innovations, and bidirectional learning, G2L leads a coordinated portfolio of initiatives to strengthen CHWs' roles in advancing preventive health and vaccine confidence.

G2L's CHW-focused workstreams (Figure 1) include:

1. Developing a CHW vaccine confidence communications toolkit;
2. Updating the CHW online immunization training module;
3. Supporting mobile and digital tools to expand vaccine education and health access.

These initiatives aim to equip CHWs with the tools, knowledge, and resources needed to address persistent immunization gaps and support informed, culturally grounded decision-making among diverse communities.

Origin of the Concept for a CHW-Oriented Maternal Immunization mHealth Application

The concept for a CHW-oriented maternal immunization mHealth application emerged from the convergence of G2L program priorities, recommendations from the DOH Office of Immunization to focus on maternal immunization as a strategic entry point for vaccine confidence work, and recognition across multiple DOH programs that existing digital health investments- oriented toward clients (e.g., WA Notify,WA Verify) or clinical providers had left a visible gap in tools designed specifically to support the CHW workforce.

Within this strategic context, mobile and digital tools represent a promising but complex opportunity. When designed to be simple, multilingual, culturally relevant, and co-created with CHWs, digital tools have the potential to expand outreach capacity, improve access to accurate and consistent vaccine information, and promote more coordinated immunization education across community settings. At the same time, digital interventions raise important considerations regarding technical feasibility, integration with existing systems, privacy safeguards, sustainability, equity, and the risk of further burdening an already decentralized workforce.

Against this backdrop, this report examines the feasibility of developing a CHW-oriented mobile health application to support maternal immunization outreach as one component of Washington's broader immunization equity strategy. The assessment evaluates whether such a tool is technically, operationally, and financially viable. It explores how it could be designed and integrated within Washington's public health ecosystem to support vaccine confidence, access, and uptake. Ultimately, this report provides the evidence needed for DOH to determine whether, and under what conditions, to invest in the development, piloting, and potential scaling of an mHealth application as part of DOH's CHW-focused immunization strategy across Washington State.

3 THE CONCEPT FOR A MATERNAL IMMUNIZATION MOBILE APPLICATION

Concept Description and Vision

The proposed mHealth application centers on creating a culturally and linguistically tailored mobile platform to equip pregnant individuals, CHWs, and their families with accessible, accurate, and engaging information about maternal immunization, including vaccines such as influenza, Tdap, COVID-19, and RSV. The vision for the application (Figure 2) includes personalized, interactive educational content; culturally relevant, multilingual messaging; and multimedia formats such as videos, infographics, and guided prompts to address common questions and concerns during pregnancy. Additional features under consideration include facilitated communication or navigation support from CHWs, tools to help families locate immunization services, reminder systems tied to pregnancy milestones, and a web-based interface for users without smartphones.

Figure 2. Conceptual vision for a CHW-oriented maternal immunization mHealth application: multilingual content, personalized education, service navigation, and offline capability.

Conceptual alignment with DOH priorities

The concept aligns with the G2L approach and the department's One Health priority, which emphasizes adapting global public health strategies to meet the needs of Washington's diverse populations. It also aligns with ongoing work across several DOH programs, including Prevention and Community Health (PCH),[12] the Office of Immunization,[13] the Community Health Worker Program,[14] and the Office of Public Affairs and Equity (OPAE) Community Collaborative,[15] each of which supports community engagement, culturally relevant health promotion, and partnerships with community-based organizations.

This feasibility assessment therefore provides the first structured evaluation of whether a CHW-oriented maternal immunization mHealth application is technically feasible, operationally appropriate, aligned with the capacity and needs of Washington's CHW workforce, and financially and organizationally sustainable within the state's public health infrastructure.

12. *Prevention and Community Health | Washington State Department of Health*
13. *Office of Immunization | Washington State Department of Health*
14. *Community Health Worker Program | Washington State Department of Health*
15. *Community Collaborative | Washington State Department of Health*

4 PURPOSE AND METHODS OF THE FEASIBILITY ASSESSMENT

4.1 Purpose of the feasibility assessment

This feasibility assessment was undertaken to generate evidence to inform DOH decision-making on whether, and under what conditions, to invest in the development, piloting, and sustainability of a CHW-oriented maternal immunization mHealth application within Washington's public health and CHW ecosystem. Specifically, the assessment evaluated technical feasibility, operational fit, organizational readiness, equity considerations, and financial and institutional sustainability.

4.2 Methods overview

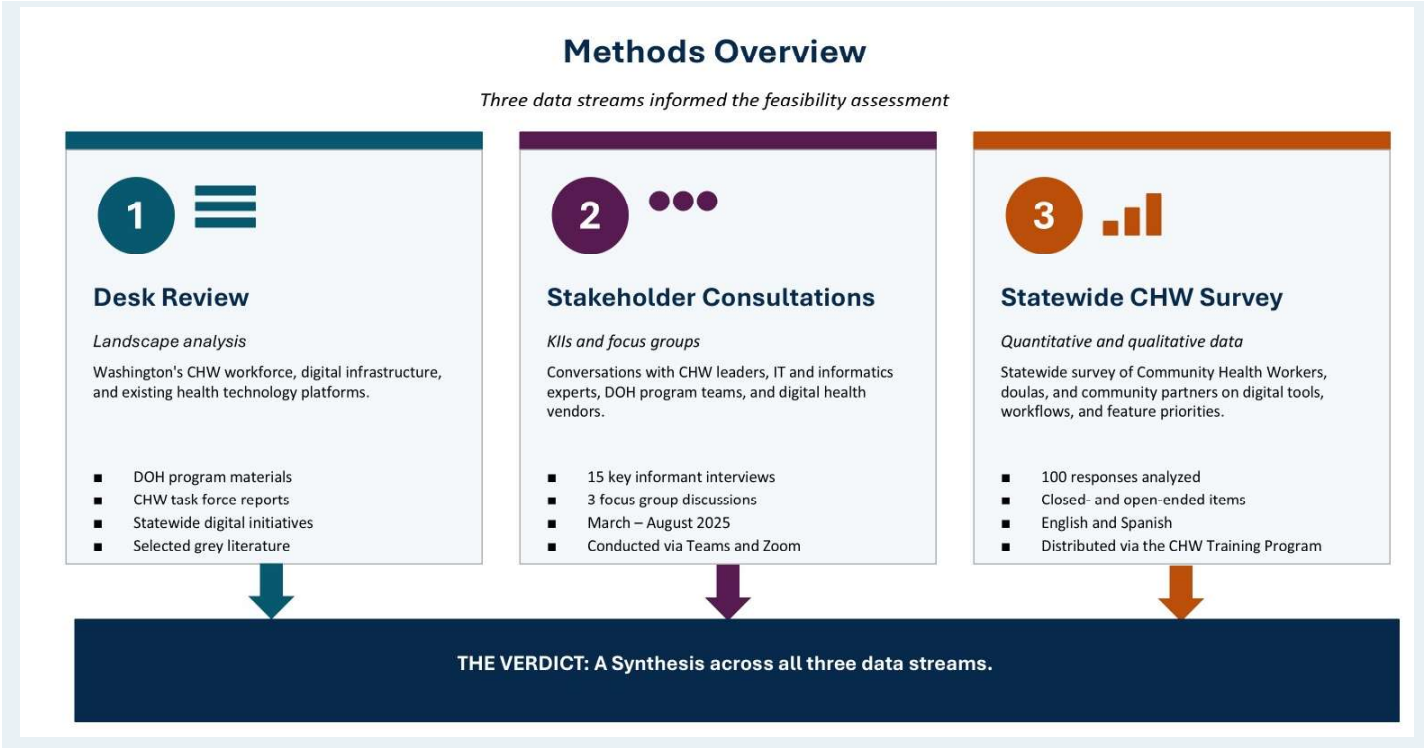


Figure 2. *Three data streams informed the feasibility assessment: a desk review of Washington's CHW workforce and digital infrastructure; stakeholder consultations through key informant interviews and focus group discussions; and a statewide CHW survey. Findings across all three streams converged in the synthesis ("The Verdict") that shaped the program's decision. CHW = Community Health Worker; DOH = Washington State Department of Health; KII = Key Informant Interview*

Each method addressed distinct but overlapping areas of inquiry related to CHW capacity, digital readiness, implementation considerations, and system-level constraints.

Findings from these methods were triangulated to support the feasibility synthesis, followed by a structured mHealth app options analysis that compared five progressive app design pathways. These are presented in sections 8 and 9 of the report.

4.2.1 Desk review

We conducted a structured desk review to establish a contextual understanding and identify key considerations for exploring the feasibility of the CHW-oriented maternal immunization mHealth application. The review focused on the following areas of inquiry:

- The organization, roles, settings, and training pathways of the CHW workforce in Washington State;
- The structure and scale of CHW employment models, funding mechanisms, and geographic distribution;
- Existing digital tools, platforms, and communication approaches used in community-based health promotion and outreach in Washington State;
- Lessons documented from prior digital health and mHealth initiatives for public health communication and community engagement;
- System-level considerations related to digital infrastructure, coordination, and equity that may influence the feasibility of the mHealth application.

The desk review drew on recent, publicly available sources relevant to Washington State's public health and CHW context, including DOH program materials, CHW landscape analyses and task force reports, documentation from state and regional digital health initiatives, and selected grey literature on community-based digital outreach. Findings from the desk review were synthesized to establish background context, identify potential constraints and enabling conditions, and inform the development of guiding questions for stakeholder interviews, focus groups, and the statewide CHW survey.

4.2.2 Stakeholder consultations (KIIs and FGDs)

Stakeholder consultations were conducted to gather in-depth perspectives on feasibility, use cases, implementation considerations, and potential risks associated with developing a CHW-oriented maternal immunization mHealth application. Key informants and focus group participants were identified primarily through internal DOH networks and existing professional relationships, supplemented by snowball sampling in which initial contacts recommended additional individuals or organizations with relevant experience. Additional participants were identified through professional networks associated with the University of Washington and colleagues with experience developing or evaluating digital health tools in public health and community-based settings.

Stakeholders included CHWs, members of the CHW Leadership Committee, DOH program teams (Immunization Program, Community Health Worker Program, Office of Innovation and Technology), Accountable Communities of Health (ACHs), Community-Based Organizations (CBOs), digital health vendors, and academic informatics experts. All KIIs and FGDs were conducted online via Microsoft Teams or Zoom and were held in English. Discussions were guided by semi-structured interview guides focused on CHW roles and workflows related to immunization outreach; current use of digital tools and perceived gaps; desired and undesired features of a potential mHealth application; equity, privacy, trust, and data considerations; and implementation feasibility, sustainability, and integration with existing systems.

We reviewed the consultation notes and analyzed them thematically using a deductive coding framework aligned to the five feasibility domains (technical, operational, organizational, equity, sustainability). Key themes were cross-referenced with findings from the desk review and statewide CHW survey to identify convergence and divergence across data sources. This analytic approach was consistent with the Consolidated Framework for Implementation Research (CFIR),16 which provides a structured taxonomy of factors influencing the implementation of complex interventions and informs the interpretation of findings on organizational readiness and the inner setting.

4.2.3 Statewide CHW survey

To complement the qualitative findings, we also conducted a statewide survey in July 2025 to assess CHWs' digital readiness, preferences, and perceived barriers regarding the maternal immunization mHealth application. The survey targeted CHWs, doulas, and community partners working across Washington State and was distributed via DOH CHW training networks, CHW coalitions, and partner organizations in both English and Spanish.

The survey was developed using Microsoft Forms and included visual mockups illustrating how the potential mHealth application might look and function. Content was translated into Spanish by DOH translators. Before distribution, the survey was reviewed and tested with multiple stakeholders to assess clarity, plain language, relevance, question flow, and estimated completion time, and to ensure accessibility across diverse respondents. A modest participation incentive was offered, with the first 50 completed responses eligible to receive a gift card.

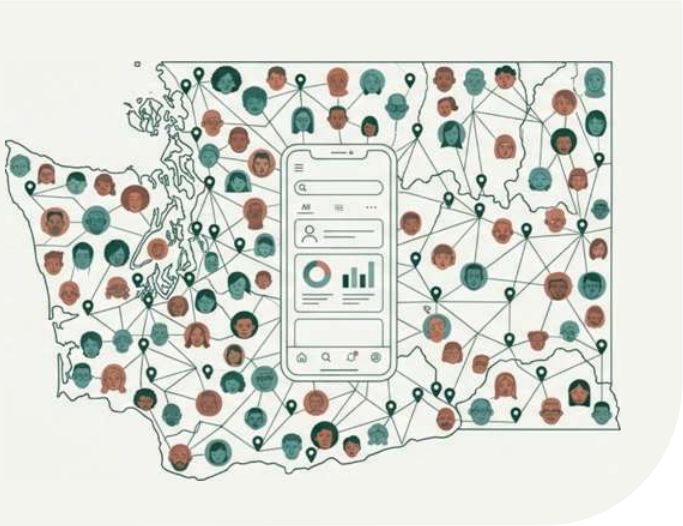
Survey questions covered respondent characteristics (age, race and ethnicity, employer type, years of CHW experience, county of work); experience with digital tools; interest in using mHealth applications for immunization outreach; preferred features; language and accessibility needs; privacy considerations; and perceived implementation challenges. Quantitative survey findings were analyzed descriptively (frequencies and proportions).

Open-ended survey responses were analyzed thematically using a combined analytic framework that draws on the Honeycomb User Experience framework and the Consolidated Framework for Implementation Research (CFIR) [1617.] The Honeycomb framework identifies seven interrelated dimensions of positive user experience: useful, usable, desirable, findable, accessible, credible, and valuable- and was selected because it directly aligns with the design-oriented questions the survey asked CHWs about what would make a mobile application meaningfully support their work. CFIR provided a complementary lens for organizing responses relating to inner-setting factors (organizational readiness,available resources, implementation climate) and characteristics of the intervention itself (complexity, design quality, adaptability). These frameworks enabled systematic analysis of the open-ended responses in relation to both user experience and other contextual factors surrounding the implementation of the envisioned mHealth application.

16. The updated Consolidated Framework for Implementation Research based on user feedback | Implementation Science | Springer Nature Link
17. User Experience Design

4.3 Synthesis and analysis

Data from all four methods were synthesized using a feasibility-focused analytical lens. Findings were triangulated to assess alignment across data sources and to identify convergence and divergence in technical feasibility, operational fit, equity considerations, and sustainability. The synthesis was structured around five feasibility domains: organizational fit and impact; content development and user requirements; technology design and integration; organizational capability, governance, and sustainability; and overall feasibility judgment. These domains informed the structure of Section 9.



4.4 Project timeline and funding constraints

The feasibility assessment was conducted under specific time and funding constraints that shaped both the scope of inquiry and the subsequent implementation decision. The project was supported by a CDC award to the Washington State DOH for COVID-19 prevention, health promotion, and data and information resources serving globally connected communities in Washington. The original award provided an 18-month implementation window.

In early 2025, the project experienced a funding disruption when CDC awards were withdrawn as part of broader federal funding actions. The funding was subsequently restored following a federal court decision, but the intervening period reduced the effective project timeline from 18 months to approximately 14 months, with a firm expenditure deadline of June 30, 2026. This timeline constraint is documented here because it materially shaped the feasibility decision that follows in Section 9, meaning that any selected investment pathway had to be executable, deliver results within this compressed window, and accommodate the remaining scope of work under existing staffing and procurement mechanisms.

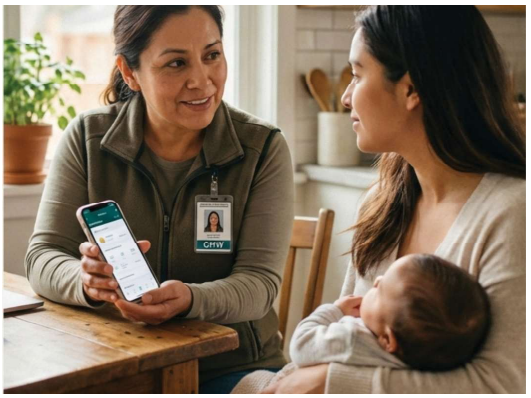
4.5 Ethical considerations

This feasibility assessment was conducted as a public health practice activity intended to inform program planning and decision-making within the Washington State DOH. The assessment focused on formative inquiry, stakeholder consultation, and descriptive data collection to understand the context, feasibility considerations, and implementation implications of a potential CHW-oriented mHealth application for maternal immunization. It was not designed as generalizable research, nor did it involve testing interventions, randomization, or hypothesis-driven evaluation.

Activities undertaken as part of this assessment, including the desk review, consultations with DOH staff and external partners, FGDs, KIIs, and the statewide CHW survey, were limited to adults and involved minimal risk. No clinical interventions were conducted, no identifiable state health records were accessed, and no personally identifiable health information was collected or analyzed.

Consistent with guidance for public health surveillance and program planning activities conducted

by a public health authority, this work was reviewed by DOH and by the Washington State Department of Social and Health Services (DSHS) Institutional Review Board (IRB) leadership to determine appropriate ethical oversight. Based on the scope, intent, and methods of assessment, activities were determined to be eligible for exemption from formal human-subjects research review as public health practice (DSHS IRB Exempt Determination, Case No. 2025-042).



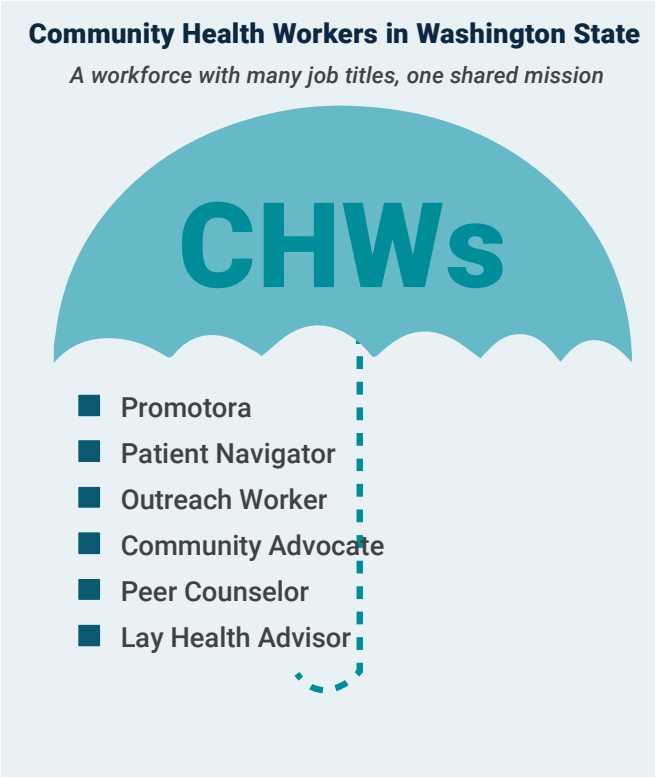
Participation in interviews, focus groups, and the survey was voluntary. Participants were informed of the purpose of the assessment, how information would be used, and that participation or non-participation would have no impact on their employment, organizational relationships with DOH, or access to services or benefits. Verbal consent procedures and introductory scripts were used where appropriate, emphasizing voluntariness, confidentiality, and the absence of penalties for declining participation. Survey responses were collected anonymously, and qualitative data from consultations were summarized at an aggregate level to avoid attribution to individuals or specific organizations. Survey data and all consultation meeting notes were stored in secure DOH systems with access limited to the assessment team.

5 DESK REVIEW FINDINGS

This section presents findings from the desk review that provide essential contextual evidence to support the feasibility assessment and to guide subsequent stakeholder engagement and primary data collection.

5.1 The community health workforce in Washington State

5.1.1 CHW roles, scope of practice, and settings



Washington State has a highly diverse and decentralized CHW workforce. CHWs operate across a wide range of roles, employer types, and funding streams, and work under multiple job titles including promotora, patient navigator, outreach worker, community advocate, peer counselor, and lay health advisor. This diversity reflects the linguistic, cultural, and lived experiences of the populations CHWs serve.[18,19].

Figure 3. *Community Health Workers (CHWs) in Washington State- Multiple roles.*

CHWs commonly support outreach, cultural mediation, health education, navigation, care coordination, and basic health assessments.[20] This flexibility allows CHWs to engage families in varied community settings, including homes, schools, community centers, and faith-based organizations, providing culturally grounded support that bridges communities with health and social service systems.

18. Community Health Worker Grant initial report 2024
19. Report and Recommendations for Implementing Training and Education for Community Health Workers
20. CHW_CoreConsensusProject_Roles.pdf

5.1.2 Training pathways and workforce development

Washington does not require formal certification to practice as a CHW; instead, the state maintains multiple entry points into the workforce. The most prominent is the Washington State DOH CHW Training Program, a free ten-week online curriculum offered in English and Spanish and widely recognized as the primary pathway for core competency preparation.[21] This formal training infrastructure is supplemented by regional CHW and promotora networks, community colleges, and organizations such as the Northwest Regional Primary Care Association, which offer continuing education and peer-learning opportunities. DOH training data show participation across all nine Accountable Communities of Health (ACHs), underscoring the program's statewide reach and its role in supporting a diverse, community-rooted workforce.[22]

Despite these strengths, persistent gaps remain in access to ongoing training and standardized educational resources, particularly in digital tools, documentation practices, and immunization-specific content. CHWs working on time-limited projects or in resource-limited organizations often lack structured mechanisms to receive timely updates, refresher training, or consistent guidance aligned with public health recommendations. This suggests that while Washington has a strong foundational CHW training infrastructure, additional mechanisms are needed to support continuous learning, standardized dissemination of content, and access to up-to-date, culturally relevant health information, particularly if digital tools are introduced into CHW workflows.

5.1.3 Workforce size, geographic distribution, and employment models

Although no formal statewide registry exists to provide an exact count of CHWs, available information suggests a large, geographically dispersed workforce. Since the full implementation of the DOH CHW Training Program in October 2012, over 2,200 participants have completed the CHW Core Competency Course, according to the most recent program data, with participants drawn from all nine Accountable Communities of Health regions covering Washington's 39 counties.[22]

This DOH-certified cohort represents only one segment of a pluralistic workforce. CHWs across Washington are additionally trained and employed through regional coalitions such as Better Health Together and the Northwest Regional Primary Care Association, promotora networks embedded in community-based organizations, tribal health programs, and clinical employers, including Federally Qualified Health Centers (FQHCs) and hospital systems[23,24,25,26.] This diversity of training pathways and employment settings enables CHWs to reach urban, rural, immigrant, refugee, multilingual, and culturally distinct communities across the state. Still, it also means that no single entity holds a complete view of the workforce's size, distribution, or composition.

Similarly, funding structures for CHWs mirror this fragmentation. Clinic-based CHWs may be supported through Medicaid mechanisms such as care coordination payments, Health Homes, or First Steps Maternity Support Services. In contrast, many CBO-based CHWs rely on grant funding, philanthropic support, or time-limited COVID-19 allocations. The 2025 State Plan Amendment enabling Medicaid reimbursement for CHW services represents a significant policy shift toward sustainability, while also introducing new implementation considerations related to equitable access and uptake across clinical and community-based settings.[27]

21. Community Health Worker Program | Washington State Department of Health
22 349-003-CHW-TrainingProgramRegionalData.pdf
23 Better Health Together | A Community Network in Eastern WA
24 Community Health Workers - Arcora Foundation
25 Education & Training - Northwest Regional Primary Care Association
26 Become a CHW | Healthier Washington Collaboration Portal
27 NASHP - The National Academy for State Health Policy

5.1.4 Capacity constraints and enabling conditions

Despite their reach and importance, CHWs face persistent capacity constraints that may affect their adoption of digital tools for their work. For example, findings from Comagine Health's statewide focus groups highlight gaps in digital infrastructure, limited access to employer-provided devices and data plans, variable levels of digital literacy, and inconsistent expectations for documentation and technology use.[28] Many CBO-based CHWs rely on personal phones and lack formal platforms for recording outreach activities, receiving training updates, or accessing standardized educational materials.

At the same time, Washington State has several structural strengths that support CHW-integrated innovation. These include a robust statewide training infrastructure (described above); active regional and statewide CHW networks, notably the CHW Coalition for Migrants and Refugees[29], the DOH-supported CHW Leadership Committee[30], and the Accountable Communities of Health[31] and a growing policy environment that recognizes CHWs as essential partners in advancing preventive health and equity. Recent investments such as Medicaid reimbursement pathways, Care Connect Washington[32], and CDC-funded CHW initiatives reflect expanding institutional support for CHW-centered approaches. It is important to note, however, that these networks and leadership structures are relatively new and limited in their scope of coordinating activity; no entity formally governs CHW practice in Washington, and CHWs are not licensed professionals in the state. As discussed in Section 9, these governance conditions have direct implications for the long-term stewardship of any CHW-focused digital product.

5.2 Digital Health Interventions and Infrastructure in Washington State

5.2.1 Overview of Digital Health Initiatives Relevant to Community-Based Outreach

Washington State has a growing history of implementing digital tools to support public health communication, care coordination, and community-based outreach. Although these initiatives vary in scope and technological complexity, collectively they illustrate both the potential and the challenges of deploying digital solutions within a decentralized public health system. A summary of initiatives reviewed is provided in Appendix A; this section highlights the most instructive examples for feasibility considerations.

5.2.2 Lessons from Washington-based digital health initiatives

Care Connect Washington, developed during the COVID-19 pandemic, provides one illustrative example.[33] While not a mobile application, the system linked a centralized intake platform with regional hubs and more than 100 community-based care coordinators, including CHWs. Care Connect demonstrated how relatively simple digital interfaces, when embedded within clear workflows and supported by adequate resources, can facilitate multilingual outreach, streamline referrals, and connect families to health and social services.

Several mobile health applications have also been developed under the DOH for chronic disease and behavioral health. The Vital App, created in collaboration with 2Morrow Health, offers psychosocial support to cancer survivors through structured lessons, multimedia content, and optional coaching. Its development emphasized user-centered design, iterative testing, privacy safeguards, and a fixed-cost model that included ongoing maintenance[34].

28 Home | Comagine Health
29 Community Health Worker Coalition for Migrants and Refugees | Public Health
30 https://waportal.org/health-initiatives/community-health-worker-leadership-committee
31 Community Health Workers (CHW) | Washington State Health Care Authority
32 Care Connect Washington | Washington State Department of Health
33 Care Connect Washington | Washington State Department of Health
34 https://doh.wa.gov/newsroom/introducing-vital-free-mobile-app-designed-support-cancer-survivors

A parallel 2Morrow smoking cessation application highlighted the importance of culturally relevant content, intuitive interfaces, and guided onboarding to support sustained engagement[35]. Two considerations from these vendor-led builds are particularly relevant to the current assessment. First, static or low-interactivity content apps can be developed at a moderate cost (~$80,000 for the initial build) but still require ongoing resources for content updates, multilingual maintenance, and user support. Second, where an application includes interaction with clinical specialists or coaches in addition to pre-programmed content, the ongoing staffing required to sustain the human-engagement component carries significant implications for maintenance and support over time. This distinction proved important for the options analysis in Section 8.

5.2.3 Digital platforms across LHJs, ACHs, and CBOs

Parallel efforts across LHJs, ACHs, and CBOs have introduced additional digital platforms, including Unite Us, FindHelp, mobile-friendly vaccine education websites, and text-messaging systems. While these tools have augmented access to information and resources for many communities, their adoption and consistent use have remained uneven across regions and organizations, reflecting differences in infrastructure, capacity, and local priorities.

5.2.4 Community Information Exchange and System-Level Infrastructure

The Community Information Exchange (CIE), led by the Washington State Health Care Authority as part of the Medicaid Transformation Project, provides further context for Washington's digital landscape.[36] The CIE aims to enable secure, cross-sector information sharing to coordinate health-related social needs. A statewide CIE landscape analysis documented substantial variation in digital infrastructure across regions and identified barriers, including inconsistent data standards, duplicative resource directories, a lack of closed-loop referral systems, and limited technical capacity among many CBOs. The CIE investment and associated governance work are intended to address these challenges over a multi-year horizon, and any CHW-oriented digital tool that ultimately incorporates referrals or client-facing messaging would need to align with evolving CIE standards.

35 *https://doh.wa.gov/you-and-your-family/tobacco/how-quit/self-help-options/2morrow-health*
36 *Community information exchange (CIE) | Washington State Health Care Authority*

5.3 Implications for feasibility and areas for further inquiry

The desk review findings highlight both the opportunity and the complexity associated with exploring a CHW-oriented maternal immunization mHealth application in Washington state. The CHW workforce's broad reach, high levels of community trust, and presence across diverse settings provide a strong foundation for community-based digital outreach. At the same time, the decentralized nature of the workforce, characterized by varied employment models, funding mechanisms, training pathways, and levels of digital readiness, introduces important considerations that affect feasibility (Figure 5).

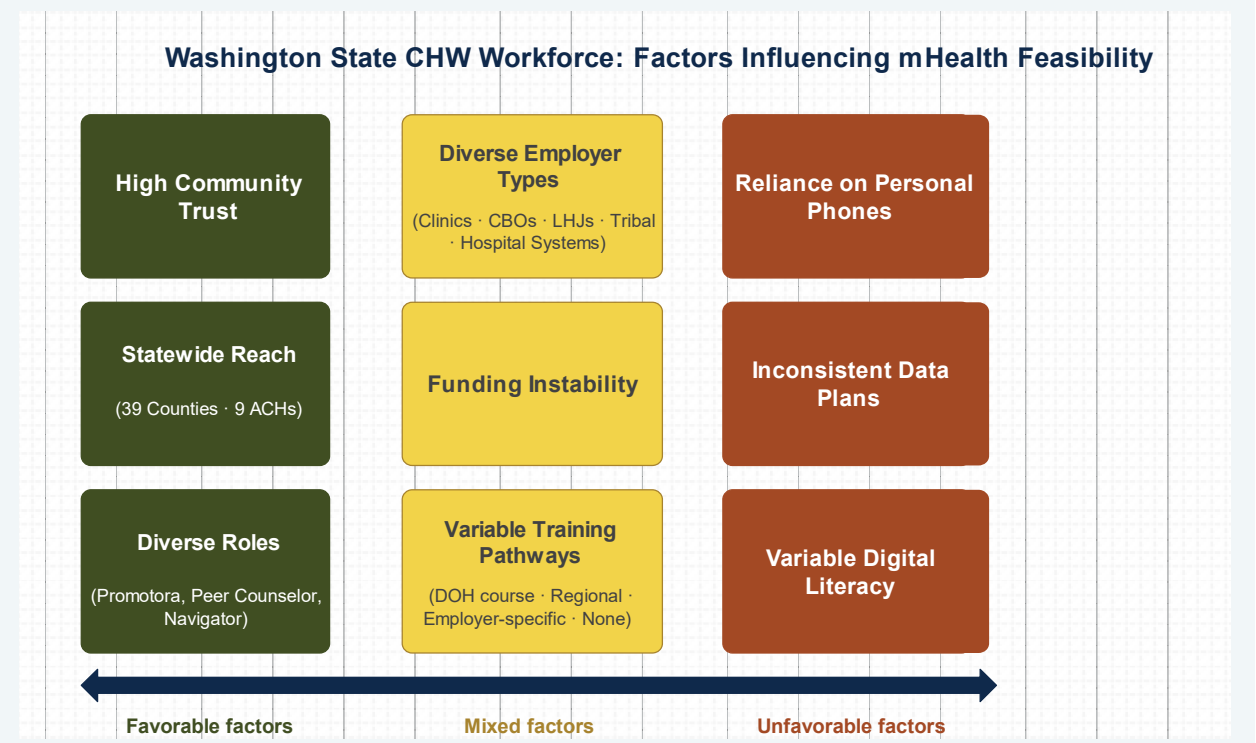


Figure 5. Factors affecting effective adoption of digital tools by CHWs in WA.

While CHWs consistently value digital tools that support their work, many rely on personal devices, experience connectivity limitations, and operate within organizations with differing expectations for documentation, data use, and technology adoption. These conditions suggest that digital solutions that assume uniform infrastructure, require complex documentation, or add administrative burden are unlikely to be feasible across the full range of CHW settings. These preliminary findings identified the key contextual factors, constraints, and design considerations that warranted deeper exploration through stakeholder engagement and the statewide survey, which sought to understand better practical use cases, perceived value, risks, and implementation considerations from the perspectives of CHWs, program leaders, and technical partners.

6 STAKEHOLDER PERSPECTIVES ON FEASIBILITY, USE CASES, AND IMPLEMENTATION CONSIDERATIONS

Stakeholders consulted

Stakeholder consultations included 15 individual KIIs and 3 FGDs conducted between March and August 2025. KII participants included CHW Leadership Committee members (n=3), DOH program leadership (n=4, across the Immunization Program, the Community Health Worker Program, and the Office of Innovation and Technology), digital health vendors and informatics partners (n=5, including 2Morrow Health and University of Washington), and CIE and DSHS partners (n=3). FGDs were conducted with practicing CHWs (n=8 across two groups) and with Public Health Nursing and DSHS First Steps partners (n=5). Table 1 synthesizes perspectives across stakeholder groups and illustrates how these considerations shape feasibility from multiple vantage points.

Stakeholder engagement provided critical insights into feasibility, potential use cases, and implementation considerations for a CHW-oriented maternal immunization mHealth application. Across discussions, stakeholders consistently emphasized the need for simple, culturally relevant, and multilingual tools that support CHW outreach without adding undue burden. At the same time, they expressed strong caution against duplicating existing systems, highlighted concerns about increasing workload or complexity for CHWs, and underscored the central importance of privacy, trust, and user-centered design. Persistent challenges related to Washington State's fragmented digital infrastructure, including variation in digital literacy, access to devices and connectivity, and organizational readiness, were also noted across groups.

Table 1. Summary of stakeholder perspectives on a CHW-oriented maternal immunization mHealth application.

STAKEHOLDER GROUP	KEY PERSPECTIVES / INSIGHTS
Community Health Workers (CHWs) (FGDs, n = 8 across two groups) 	• Strong interest in a simple, DOH-aligned tool providing vaccine education and local service navigation. • Emphasized audio/video content and multilingual access for low-literacy and non-English-dominant clients. • Cautioned against tools that require client login, collect personal data, or feel like a "tracker for the state." • Concerned about using personal devices and bearing individual costs; preferred employer-supported approaches. • Valued features that save time (quick references, shareable materials) over those that add documentation burden.

Table 1. Summary of Stakeholder Perspectives on a CHW-Oriented Maternal Immunization mHealth Application

STAKEHOLDER GROUP	KEY PERSPECTIVES / INSIGHTS
CHW Leadership Committee (KIIs, n = 3) 	• Supported a CHW-facing (not client-facing) tool that strengthens peer community and provides up-to-date, DOH-aligned content. • Emphasized co-creation with CHWs and the importance of cultural humility in content development. • Raised concern about equity of adoption across under-resourced organizations; flagged training and support needs. • Noted that sustainability questions about who maintains the tool and funds updates must be resolved before launch.
DOH Immunization Program (KIIs, n = 2) 	• Recommended maternal immunization as the initial thematic focus, given the epidemiological priority and known gaps in maternal vaccine uptake. • Prioritized alignment with existing DOH content and plain-talk messaging standards. • Identified the CHW vaccine confidence toolkit (G2L workstream 1) as the natural content anchor for any digital tool. • Flagged limited internal capacity to develop or maintain a mobile application directly.
DOH Office of Innovation & Technology (OIT) (KIIs, n = 2) 	• Confirmed that DOH had not previously built a CHW-specific mobile application; prior apps (WA Notify, WA Verify) were client- or provider-facing. • Cautioned that any new mobile product would require clearly designated stewardship for content, technical maintenance, and user support. • Noted 2025 funding disruptions and internal reassignments that constrained OIT's ability to lead sustained development of a new product within the project window. • Recommended that any initial investment favor low-complexity architectures that do not depend on clinical data integration.
WA Notify / WA Verify Team (KII, n =4) 	• Underscored the importance of multilingual access (40+ languages supported in WA Verify) and DOH's role as a trusted steward. • Emphasized that residents trust DOH as an application owner, an asset that should not be underestimated. • Cautioned against feature overload and against tools that duplicate functions of existing state platforms.

Table 1. Summary of Stakeholder Perspectives on a CHW-Oriented Maternal Immunization mHealth Application

STAKEHOLDER GROUP	KEY PERSPECTIVES / INSIGHTS
2Morrow Health (Digital Vendor) (KII, n = 4) 	• Described the feasibility of static/low-interactivity vendor-built apps (approx. $80K initial build) that deliver structured educational content with optional coaching. • Emphasized that app success depends heavily on ongoing program support and staffing, not only technical maintenance. • Flagged that more interactive models (e.g., "Immunity Community Lite") can exceed $300K to build and $100K/year to maintain.
Mental Health Platform for Youth (KII, n = 1) 	• Described a Slack-based community-of-practice platform used by youth for mental health discussion topics. It illustrates how commercial collaboration tools can support peer connection without requiring a purpose-built application. • Noted that the configuration of existing platforms can substantially lower technical and maintenance costs while meeting core peer-networking needs. • Highlighted the importance of moderation, onboarding, and dedicated facilitation for sustained engagement.
DSHS First Steps / Public Health Nursing Partners (FGD, n = 5) 	• Emphasized that CHWs already operate across multiple systems and that additional tools must clearly replace or augment, not simply add to, existing workflows. • Underscored the role of trusted community partners in maternal health support and the importance of coordination across maternity support services. • Cautioned that privacy-sensitive populations (e.g., recent immigrants) may be reluctant to engage with apps perceived as data-collection tools.
HCA Community Information Exchange (CIE) Program (KIIs, n = 2) 	• Clarified that CIE is focused on cross-sector referrals, interoperability, and governance, not on health promotion or education content. • Affirmed that a CHW-facing education application is complementary to, rather than duplicative of, CIE investments. • Advised that any app component involving referrals or messaging with clients would need to align with evolving CIE standards and governance.

7 CHW SURVEY FINDINGS:

Digital Readiness, Preference and Feasibility Considerations

Overview

A total of 112 responses were received, of which 100 (92 English, 8 Spanish) were retained after data cleaning. The findings from the statewide CHW survey provide additional evidence regarding digital readiness, preferred functionality, and perceived implementation challenges for a maternal immunization mHealth application. From the results, CHWs were interested in using a digital tool for immunization outreach. They perceived potential value, provided the tool was designed to align with the realities of their work and the communities they serve.

Table 2. Characteristics of CHW survey respondents (N = 100).

CHARACTERISTIC		NUMBER	PERCENTAGE
AGE GROUP			
	Under 25	4	4%
	25–34	24	24%
	35–44	21	21%
	45–54	33	33%
	55+	16	16%
	Prefer not to say	2	2%
RACE AND ETHNICITY (RESPONDENTS COULD SELECT MORE THAN ONE)			
	White	44	44%
	Hispanic / Latino	35	35%
	Asian	13	13%
	Black / African / African American	9	9%
	American Indian / Alaska Native	5	5%
	Middle Eastern / North African	5	5%
	Native Hawaiian / Pacific Islander	3	3%
	Prefer not to say	2	2%
PRIMARY ORGANIZATION TYPE			
	Community-based organization (CBO)	27	27%
	Clinic or health center	23	23%
	Public health department	20	20%
	Volunteer	7	7%
	Faith-based organization	2	2%
	School/education	3	3%
	Government	2	2%
	Other (non-profit, Medicaid organization, supported living agency, community-specific organizations)	7	7%
	Prefer not to say	9	9%

Table 2. Characteristics of CHW survey respondents (N = 100).

Characteristic		NUMBER	PERCENTAGE
Years of experience as a CHW			
	Less than 1 year	16	16%
	1–2 years	18	18%
	3–5 years	39	39%
	6–10 years	10	10%
	More than 10 years	17	17%
Region or county served (respondents could select more than one)			
Puget Sound (King, Pierce, Snohomish, Kitsap, Thurston)		36	36%
South Central (Yakima, Benton, Franklin, Kittitas, Klickitat)		12	12%
Southwest (Clark, Cowlitz, Wahkiakum, Lewis, Skamania, Pacific)		10	10%
Northeast (Spokane, Stevens, Pend Oreille, Ferry, Lincoln)		9	9%
Northwest (Whatcom, Skagit, Island)		9	9%
Statewide (serves all of Washington)		8	8%
North Central (Chelan, Douglas, Grant, Okanogan)		4	4%
Olympic Peninsula (Clallam, Jefferson, Mason, Grays Harbor)		3	3%
Southeast (Walla Walla, Columbia, Garfield, Asotin)		3	3%
Out of state or not specified		7	7%
Survey language			
	English	92	92%
	Spanish	8	8%

Notes. *The survey was administered in July 2025 in two language versions. The English survey received 102 responses, of which 10 were excluded for completion times under 5 minutes. The survey had been tested several times, and it was impossible to complete it in under 5 minutes. This yielded 92 valid English responses. The Spanish survey received 8 responses, all of which were retained. The merged analytic sample was N = 100 (92 English + 8 Spanish).*

Digital engagement and readiness

Survey responses indicated high levels of digital engagement and confidence among participating CHWs. Of respondents, 77% reported using smartphones for work, and 62% reported prior experience with health-related mobile applications. 82% expressed confidence in navigating mobile applications themselves, and 82% reported being comfortable assisting clients with technology. A substantial majority indicated interest in using an mHealth application as part of immunization outreach and believed such a tool could improve reach and effectiveness with families. From the open-ended responses, however, respondents raised practical concerns. For example, they described relying on personal phones for work and noted that some clients, particularly in rural areas, lacked reliable data plans or internet access.

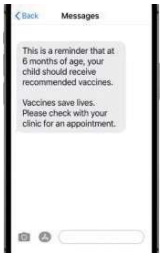
Preferred features and design priorities

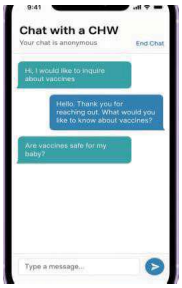
When asked to rate specific features as extremely, very, or moderately helpful, respondents endorsed local service listings (99%), client reminders (97%), automated vaccine information updates (95%), audio messages (93%), video messages (93%), vaccine education content (91%), and two-way messaging (90%). No proposed feature was broadly rejected; the "Not at all helpful" response was selected by 2% or fewer respondents for each feature. The uniformly high endorsement across all these closed-ended items could reflect genuine acceptability of the proposed features but may also be consistent with social desirability bias. In either case, the ratings are most usefully interpreted as an indication of the broad acceptability and the relative preference for each feature, rather than as a precise measure of the level of support for each feature.

Open-ended responses expressed strong caution about features that could feel like surveillance or impose a documentation burden, as captured in one respondent's framing that "the tool should help the client, not act as a tracker for the state," and reinforced that any feature added must save CHWs time rather than create new administrative work.

Table 3. CHW-rated helpfulness of proposed mHealth application features (N = 100).

Respondents (n=100) rated each proposed application feature on a five-point scale: **Extremely helpful, very helpful, moderately helpful, slightly helpful, or not at all helpful.** The mockup screens shown below were embedded in the survey instrument so respondents could see how each feature would look and function before rating it. The features are presented in descending order by the share of respondents rating them as extremely, very, or moderately helpful. The last column shows a combined rating of extremely, very, or moderately helpful features.

Mobile App Feature	Mockup Shown in Survey	Distribution of CHW Ratings *on a five-point scale:* Extremely helpful, very helpful, moderately helpful, slightly helpful, or not at all helpful	Percent Rated Helpful: *Extremely + Very + Moderately helpful*
Local services & programs directory *List of local services and programs to support clients (e.g., health clinics, free ride programs, food,and WIC support)*		Extremely: 54% Very: 36% Moderately: 9% Slightly: 1% Not at all: 0%	99% Extremely + Very + Moderately helpful
Reminders for vaccine due dates *Send reminders to clients for upcoming vaccine due dates (e.g., based on the child's dateof birth)*		Extremely: 37% Very: 50% Moderately: 10% Slightly: 2% Not at all: 0%	97% Extremely + Very + Moderately helpful
Automated educational information *Send automated educational information about vaccines to clients based on their recommended vaccines.*		Extremely: 24% Very: 55% Moderately: 16% Slightly: 2% Not at all: 2%	95% Extremely + Very + Moderately helpful
Audio-based educational messages *Educational messages with voice instead of text only (audio support for low-literacy or visually impaired users)*		Extremely: 26% Very: 49% Moderately: 18% Slightly: 5% Not at all: 1%	93% Extremely + Very + Moderately helpful

Mobile App Feature	Mockup Shown in Survey	Distribution of CHW Ratings *on a five-point scale:* Extremely helpful, very helpful, moderately helpful, slightly helpful, or not at all helpful	Percent Rated Helpful: *Extremely + Very + Moderately helpful*
Video-based educational messages *Educational messages with videos instead of text only (visual learning support)*		Extremely: 26% Very: 55% Moderately: 12% Slightly: 3% Not at all: 1%	**93%** Extremely + Very + Moderately helpful
Vaccine education content *Educational content about specific vaccines, recommended schedules, and safety information*		Extremely: 19% Very: 41% Moderately: 31% Slightly: 6% Not at all: 2%	**91%** Extremely + Very + Moderately helpful
Two-way CHW–client messaging *Twoway messaging between CHWs and clients to answer questions about vaccines (with anonymous identities*		Extremely: 29% Very: 48% Moderately: 13% Slightly: 7% Not at all: 2%	**90%** Extremely + Very + Moderately helpful

Trust, privacy, and implementation concerns

Open-ended survey responses (Table 4) reinforced the central importance of trust and privacy. Respondents expressed greater confidence in tools that relied on DOH-aligned, authoritative information and that could be shared with clients without requiring complex logins, permissions, or data collection. Concerns about privacy, surveillance, and app fatigue were frequently cited as potential barriers to adoption, particularly among immigrant, refugee, and rural communities.

CHWs also stressed that a digital tool must support and streamline their work rather than introduce additional administrative burden. Features that save time, such as pre-developed messages, printable materials, and quick-reference content, were viewed as more feasible than tools requiring extensive documentation or ongoing data entry. Respondents noted that training and ongoing support would be necessary to ensure adoption across a workforce with varying levels of digital literacy and organizational support.

The barriers identified through the survey, including inconsistent access to devices and connectivity, variation in digital skills, reliance on personal phones, concerns about organizational readiness, and differences in employer IT policies, mirrored the system-level constraints identified in the desk review and stakeholder consultations. These findings reinforced that feasibility depends not only on technical development but also on intentional design, adequate support, and alignment with a decentralized and diverse CHW ecosystem.

Table 4. Thematic synthesis of CHW survey open-ended responses; design features organized by Honeycomb User Experience dimensions.

HONEYCOMB DIMENSION	SUMMARY OF CHW RESPONSES AND ILLUSTRATIVE QUOTES
Features (core) 	CHWs wanted features that help track vaccine schedules, send reminders, show past vaccine records and due dates, access educational materials, and connect to local resources. "Help me track due dates and send reminders." / "Quick referral forms and tools in one place."
Usability	Simple, intuitive navigation; large buttons; low data requirements; minimal steps; accessibility for hearing- and vision-impaired users; and support for first-time app users. "Keep it simple and easy to navigate." / "Make it user -friendly for people with no app experience."
Design	Clean, bold designs with calming colors and visual prompts such as pictures or videos to reduce cognitive load. "Use bold color schemes and large text." / "More pictures and fewer words."
Navigation (findable) 	Easy, quick access to information during client visits, particularly to vaccine schedules, videos, and educational tools. "Make it easy to find what I need on the spot." / "Quicker access to services in one place."
Accessibility 	Multiple languages (including Spanish, Vietnamese, and Chuukese), offline mode, low data usage, and visual/audio formats for low-literacy, elderly, and visually impaired clients. "Include languages like Spanish, Vietnamese, Chuukese." / "Available without internet or data."
Trust (credibility) 	Emphasis on client data privacy (e.g., HIPAA) and trusted, up-to-date information from reputable sources. "Needs to follow privacy rules." / "From a source I trust."
Value 	The app should save time, boost CHW confidence, and help clients feel informed and empowered to act on health information. "Helps me feel more confident in educating clients." / "Gives clients power to make decisions."

Barriers Identified by Respondents

In open-ended responses, CHWs consistently raised the following barriers to effective adoption and use:

- Device and connectivity gaps; some clients lack smartphones, data, or reliable internet, especially in rural areas.
- Digital literacy variation; older adults, new immigrants and refugees, and low-literacy groups may require more support to navigate digital tools.
- Concerns about complexity and app fatigue; respondents warned about overwhelming clients with too many features or steps.
- Privacy and trust concerns; hesitation to download mobile health apps that require logins or permission.
- CHW capacity constraints; worry about time required to teach clients, reliance on personal devices, and limited data/storage.
- Organizational readiness; variation in employer IT policies, including provision or lack of provision of devices and availability of technical support.

8 APP DESIGN OPTIONS ANALYSIS

8.1 Synthesis: from feasibility evidence to design pathways

The three evidence streams, including the desk review of Washington's CHW workforce and digital health environment, the key informant interviews and CHW focus group discussions, and the statewide CHW survey, all converged on the same fundamental finding that there is real and well-articulated demand among Washington CHWs for a digital tool that supports their immunization outreach work. The demand also comes with a clear set of design and implementation conditions. CHWs welcomed the prospect of a tool that would save time, deliver vetted educational content, and more reliably reach immigrant, refugee, and multilingual communities. They were equally clear that any such tool would need to operate in low-bandwidth conditions, support multiple languages, respect client privacy, and avoid imposing a new documentation burden. The desk review and stakeholder consultations revealed that CHWs are employed across a fragmented set of organizational settings, including clinics, CBOs, LHJs, tribal health programs, and hospital systems. Each of them has its own digital infrastructure, supervision arrangements, and funding stability, and a digital health environment in which several DOH and HCA initiatives were already addressing adjacent problems. Still, none were positioned to host a CHW-facing digital app.

The evidence also pointed toward a pathway of design choices, each carrying a different combination of CHW value, cost, technical complexity, data sensitivity, and stewardship burden. The five options described in sections 8.1 through 8.5 below represent milestones along that pathway, progressing from a simple curated website to a full CHW-client interactive ecosystem. Each option could either stand alone as a complete deliverable or, for the lower-complexity options, serve as a foundation that could be extended into the next. The pathway is illustrated in Figure 6. Within this framing, the question facing G2L was less about which option was best in principle than about which option realistically matched the resources, governance arrangements, and stewardship support that could be implemented within the G2L project's operational window.

The G2L team evaluated these options against six dimensions: (1) CHW value; whether the option saves time, fits workflows, and is usable in practice; (2) Equity; offline capability, multilingual access, and accessibility; (3) Feasibility; whether it is realistic within budget, timelines, and technical capacity; (4) Sustainability; whether it can be maintained beyond year one with clear ownership; (5) Data responsibility; whether it protects CHW and client data and aligns with privacy standards; and (6) Governance fit; alignment with DOH and CIE strategy and avoidance of duplication. The scoring was completed by G2L team members and supervising leadership using a five-point scale (1 = very weak; 5 = very strong).

Overview of the five options

8.1 Option 1 - Curated website

Description. A DOH-hosted, mobile-friendly webpage consolidating vaccine education materials, local service directories, and CHW-facing resources similar in concept to the existing Power of Providers site[37] . The content would be curated by DOH, organized by topic, and available in multiple languages as PDFs or web pages. No app download is required; CHWs and clients access the site through any browser

Alignment with CHW needs. Weak alignment. Survey results showed that CHWs preferred interactive mobile apps over static websites and that websites are less usable in the field. For example, during client visits, downloading a PDF is substantially more cumbersome than accessing content directly in an app.

Advantages. Low-cost and relatively easy to develop and maintain; builds on existing DOH infrastructure; serves as a backup repository for CHWs who prefer web or print formats.

Disadvantages. Limited field utility and risk of low adoption; "download fatigue" from multiple PDFs; does not address current CHW priorities (scheduling, reminders, peer connection).

Feasibility considerations. Requires significant upfront time to curate content; needs constant review and updates; open questions around multilingual page options and turnaround time; requires a clear designation of which DOH unit will own the content.

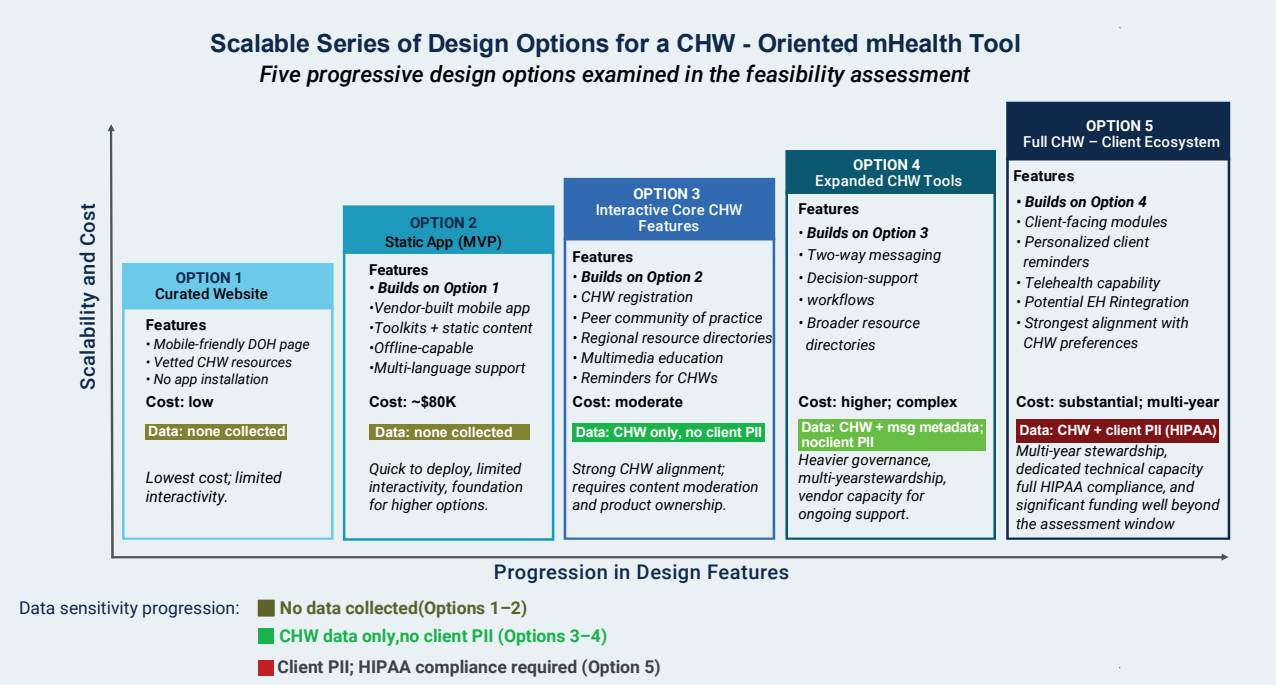


Figure 6. **(Decorative)** *Five-option progression for a **CHW**-oriented mHealth tool: **CHW =** Community Health Worker; **EHR =** Electronic Health Record; **HIPAA =** Health Insurance Portability and Accountability Act; **MVP** = Minimum Viable Product; **PII =** Personally Identifiable Information.*

The vertical axis represents increasing scalability, technical complexity, and cost; the horizontal progression represents a progression of design options from a curated webpage (Option 1) to a full CHW-client interactive ecosystem (Option 5).

37. Power of Providers (POP) Initiative | Washington State Department of Health

8.2 Option 2 - Static app/ basic Minimum Viable Product (MVP)

Description. A downloadable mobile app (iOS and Android) containing a curated, static toolkit of immunization resources: vaccine schedules, plain-language fact sheets, multilingual educational content, and a local services directory. Content is pre-loaded, so the app functions offline. There is no user registration, no data collection, and no interactivity between users. This is a "read and share" tool. **Alignment with CHW needs.** Partial alignment. Meets CHWs' needs for offline access to vaccine information but misses key survey-identified priorities, including reminders, messaging, and directories.

Advantages. Proven feasible (vendor builds, such as 2Morrow apps, are approximately $80,000 for initial build); can incorporate existing DOH CHW toolkit content; quick to deploy and can be promoted through CBO and LHJ contracts; serves as proof of concept and foundation for future progression to Options 3–5; requires lower maintenance than more advanced apps.

Disadvantages. Limited engagement without interactive features; only partially addresses CHW priorities; still requires content updates and user support.

Feasibility Considerations.
Hosting decisions (App Store, Google Play, DOH, or vendor); offline content update cadence; multilingual requirements; analytics for usage monitoring; scoped development and maintenance cost; user testing before scale-up; possible extension for CHWs to register and join a community of practice.

8.3 Option 3 - Interactive app with core CHW features

Description. Builds on Option 2 by adding a CHW-facing interactive layer. CHWs can register, create a profile, and join a moderated community of practice where they connect with peers, share experiences, and access peer-generated resources. The app adds audio and video educational content, a searchable local services directory, and general (non-client-specific) vaccine alerts and updates. All functionality is CHW-facing only: no client data is entered, collected, or stored. This is the first option that supports both content access and CHW peer connection within a single platform.

Alignment with CHW needs. Strong alignment with survey findings. Expands beyond one-way PDFs by including multimedia resources and enabling CHWs to connect with each other, while avoiding the complexity of handling client information.

Advantages. Progression from Option 2 with added peer-to-peer connectivity, CHW registration, and audio/video educational content; strong balance of value, feasibility, and sustainability; keeps privacy risks low (no client PII); can serve as a foundation for further development.

Disadvantages. Alerts and reminders are general, not client-specific; they may still fall short of CHWs' desire to directly support individual clients; some CHWs may resist using personal devices.

Feasibility considerations.
Requires vendor plus DOH maintenance; data collected limited to CHW profile/registration and app usage stats; HIPAA not required, but privacy safeguards for CHW data are needed; stewardship and hosting arrangements to be clarified; ongoing cost for multimedia production and updates

8.4 Option 4 — Interactive app with expanded CHW tools

Description. Builds on Option 3 by adding tools CHWs can use in real time during or after client interactions. New features include two-way messaging between CHWs and supervisors or peers (for resource sharing and consultation, not case management), interactive vaccine-schedule look-ups, and an expanded social-services directory covering housing, food, WIC, and transportation. Client-identifiable data is still not stored in the app; messaging is designed to share information and resources, not to manage individual cases. This option substantially increases the app's day-to-day utility but also introduces governance requirements around message moderation, data retention policies, and alignment with CIE referral standards.

Alignment with CHW needs. Stronger alignment. CHWs valued messaging (89% endorsement) and needed quick access to trusted decision-support tools, such as vaccine schedules. They also acknowledged that clients face broader needs (housing, food, WIC) that directors could support.

Advantages. Progression from Option 3 by adding messaging and decision-support tools for use in client interactions; expands relevance to broader determinants of health; maintains lower privacy risks than models involving client-facing data.

Disadvantages. Higher cost and complexity than Option 3; messaging requires governance and moderation even if not client-facing; sustainability risks without built-in support and training; increased training needs for CHWs.

Feasibility considerations.

Development and operational costs are higher than Option 3; data collected includes CHW registration/profile, usage analytics, and peer/supervisor messages; clear policies for content moderation, retention, and data privacy are needed; alignment with CIE standards is required if directories or referrals expand in scope.

8.5 Option 5 - Full CHW–client interactive ecosystem

Description. The most comprehensive option. Builds on Option 4 by introducing a dual-module system: a CHW module and a client module. The CHW module adds scheduling tools, workflow management, private notes, direct secure messaging with clients, job aids, and self-care resources. The client module delivers personalized vaccine reminders tied to individual schedules, tailored educational content, appointment booking, warm referrals to services, and optional telehealth access. This is the only option that stores client-specific health data, which means full HIPAA compliance, robust role-based access controls, and, if EHR interoperability is pursued, complex API governance and identity management. The ambition aligns with what CHWs ultimately want, but the cost, compliance requirements, and multi-year stewardship commitment put this well beyond any single-project window.

Alignment with CHW needs. Strongest alignment in principle. Delivers the full suite of features CHWs prioritized while also creating direct client value through reminders, tailored information, and access to services.

Advantages. Progression from Option 4 with the ability to store client-specific data and use it for personalized alerts, reminders, workflow management, and client messaging; a comprehensive solution that supports CHWs' professional needs, peer networks, and client engagement in one ecosystem; positions DOH for long-term integration into the Washington health system.

Disadvantages. Exceeds current budgets and timelines and would require multi-year funding; heavy IT, governance, and HIPAA compliance requirements; greater risk of "information overload" or inequitable adoption if not carefully scoped; risk of becoming an "orphan app" without a committed long-term steward.

Feasibility considerations.
Data collected includes CHW profiles, client contact information, health data, appointments, and communication logs; requires full HIPAA compliance and interoperability requires APIs, consent and identity management, and strong governance; a phased roadmap and multi-year funding would be essential.robust role-based access architecture; telehealth integration requires vendor partnerships and clear scope decisions; EHR data are needed; stewardship and hosting arrangements to be clarified; ongoing cost for multimedia production and updates

8.6 Synthesis of the options analysis

Across the five options, there is a consistent pattern in which value, complexity, cost, and stewardship burden all increase together. Options 1 and 2 are low-cost and technically straightforward, but only partially meet CHWs' actual needs. Option 3 is the sweet spot in terms of feasibility, best matching the most expressed CHW priorities (content access, peer connection, multilingual and offline capabilities) while keeping privacy risks, costs, and stewardship requirements manageable. Options 4 and 5 deliver progressively more value, but each step adds governance complexity, privacy obligations, and sustained staffing requirements that grow faster than the feature additions themselves. Washington's highly diverse CHW workforce also means that any single product would need deliberate investment to identify core features that work across all settings, as well as the flexibility to configure it for different organizational contexts.

The most important insight from the options analysis is that each step up the progression carries new features and an additional layer of ongoing operational responsibility. The technical building of any option from 1 to 3 is achievable, but the binding constraint is whether a sustained steward exists to own, maintain, and evolve the tool after its launch. This observation drives the feasibility judgment in Section 9.

9 FEASIBILITY SYNTHESIS AND IMPLEMENTATION PATHWAY

This section synthesizes feasibility considerations from the desk review, stakeholder consultations, CHW survey, and options analysis to address the assessment's core purpose: to inform whether, and under what conditions, DOH should invest in developing a maternal immunization mHealth application to support CHWs. The synthesis is organized around five interrelated domains: organizational fit, content requirements, technology design, governance and sustainability, and the overall feasibility judgment, and concludes with the implementation pathway that DOH pursued in response to the findings.

9.1 Organizational fit and impact

Across data sources, the concept of a CHW-oriented maternal immunization mHealth tool aligned with the broader emphasis on culturally responsive communication, vaccine confidence, and strengthening CHW outreach within DOH programs and the G2L portfolio. Stakeholder perspectives converged on the value of a tool that supports CHWs with standardized, consistent vaccine information and culturally and linguistically tailored materials for use in community-based settings. At the same time, feasibility was strongly shaped by whether the tool would reduce friction in CHW work rather than adding requirements. Stakeholders cautioned repeatedly against creating a duplicative platform or a "parallel education system." Organizational fit was therefore strongest when the tool was positioned as a practical extension of existing DOH-aligned materials and CHW workstreams, and when it was designed to support CHW outreach without adding administrative burden.

9.2 Content development and user requirements

Stakeholder perspectives aligned well with survey responses that content requirements are central to feasibility. A maternal immunization tool would depend on the availability of culturally grounded, multilingual content in formats that support diverse literacy levels, including audio, video, and visual resources, and would require ongoing updates and quality assurance to remain aligned with DOH guidance as information and public health needs evolve. Survey findings reinforced the demand for tools that provided quick access to accurate information, shareable resources, and client-friendly outreach materials. These findings underscore that feasibility depended on sustaining the processes required for content translation, updates, and quality assurance over time. Feasibility was likely strongest when initial development focused on a limited set of core maternal immunization topics. For example, drawing on the G2L vaccine confidence toolkit and expanding iteratively based on CHW input and implementation learning would support feasibility.

9.3 Technology design and integration

Stakeholders consistently indicated that feasibility was highest for a simple, low-complexity tool that avoids technical features likely to increase cost, implementation burden, and privacy risk. Consultations emphasized that integration with clinical data systems such as electronic health records would substantially increase complexity, timelines, and resource requirements. Similarly, stakeholders noted that interactive functions (e.g., two-way messaging, telehealth) introduce additional considerations for privacy, security, moderation, and support. These findings, consistent with the options analysis in Section 8, indicated that feasibility decreased sharply as the application moved from Options 1–3 (content and community-of-practice) toward Options 4–5 (messaging and full client-facing ecosystem). An application with characteristics consistent with Options 1–3 (static or lightly interactive content, no client PII, optional integration with mobile phone features such as the phone's contact list) was technically feasible within current capacity. An application consistent with Options 4–5 was not feasible within the project window and would have required multi-year investment, full HIPAA compliance, and a dedicated long-term steward.

9.4 Governance, stewardship, and sustainability

Evidence from the assessment indicated that Washington has a set of enabling conditions that support feasibility, including existing CHW training infrastructure, active CHW networks and leadership structures, and a workforce experienced with digital tools in public health settings. As discussed in Section 5.1.4, however, these networks and leadership structures are relatively new and limited in their scope of coordinating activity. There is no entity that formally governs CHW practice in the state, and CHWs are not licensed professionals in Washington. The assessment did not identify an external CHW or health-focused organization that represents and serves the diverse array of CHWs across Washington, and that could serve as a long-term steward and home for a CHW-oriented mHealth application. Stakeholder consultations and survey findings further underscore substantial variation in organizational readiness across CBOs, LHJs, and clinical settings, including differences in device access, IT policies, training, and user support capacity variation that affects adoption, scale, and sustainability, and that reinforces the difficulty any centralized product would face in responding to the heterogeneity of local CHW workflows and community-specific needs.

Within DOH, while there was broad interest in the concept and clarity on what would be feasible and useful, no single unit was positioned to assume long-term stewardship and operational ownership of an mHealth application at the time of the assessment. The G2L Program, the Office of Immunization, the Community Health Worker Program, and the Office of Innovation and Technology each faced capacity constraints in iteratively developing, hosting, and maintaining an application beyond the available funding period (June 30, 2026). Early in the feasibility process, OIT was considered a potential lead; however, following 2025 funding disruptions and internal reassignments, it became clear that DOH lacked the sustained capacity to host, maintain, and iteratively develop a new digital product without risking fragmentation, delays, or misalignment with core program responsibilities. At the time of the assessment, other units faced federal and state funding limitations, which meant their focus was on maintaining core services rather than launching a new initiative.

These external and internal findings concluded that neither an external organization nor an internal DOH unit was positioned to assume long-term ownership of a CHW-oriented mHealth product, and that the broader CHW ecosystem is too heterogeneous for a single centralized tool to fit all local realities.

9.5 Overall feasibility judgment

Collectively, the findings indicated that a maternal immunization mHealth tool would be feasible only under specific conditions, which were not met for any of the options at the time of this assessment. Technical feasibility was strongest for a CHW-facing application consistent with Options 1–3 (content and community-of-practice), provided it was designed to be simple and low-burden, multilingual and culturally grounded, functional in low-bandwidth or offline contexts, privacy-preserving, aligned with DOH-approved content, co-created with CHWs, and developed through a minimum viable product (MVP) approach allowing iterative refinement and a phased path to additional features.

Technical feasibility, however, was necessary but not sufficient. The feasibility judgment also had to account for governance, stewardship, and sustainability. Under the conditions present at the time of the assessment, three factors together made a DOH-led development of an mHealth app infeasible even for the simplest architectures. (1) the project's effective window had narrowed to fourteen months; (2) no external organization had been identified as a long-term steward; and (3) internal DOH capacity across the relevant program units was constrained.

This conclusion was not a judgment about whether such a tool could be useful, and a valuable investment should conditions change in the future. The judgment reflected the conditions under which such a tool could be responsibly developed and sustained. The assessment's determination was therefore one of ***conditional feasibility.*** The concept was feasible in principle and likely valuable, but not feasible to implement as conceived under the available governance and timeline conditions. The distinction between technical and institutional feasibility was central to the implementation pathway that followed.

9.6 From Feasibility to Action: The Local Seed Funding Approach

Given the stewardship constraint identified above, DOH determined that developing a centrally owned mHealth application within the project window was not feasible. This was not because the concept lacks merit, but because launching a tool without a committed long-term owner would risk creating exactly the kind of abandoned "pilot" the global digital health literature warns against. The G2L team considered several centralized pathways, including a DOH-hosted mobile-friendly webpage, a vendor-built static app, and a phased MVP with future transition to state ownership. However, each of these options faced the same core limitation. Without secure stewardship, they would not be sustainable beyond the funding period, and a centralized design would, in any case, have limited responsiveness to the local CHW workflows and community contexts that vary so substantially across Washington.

In response, DOH pursued a decentralized, learning-oriented pathway: local seed funding to Local Health Jurisdictions (LHJs). Rather than building a single statewide product, DOH issued a Call for Interest inviting LHJs to design and implement locally grounded digital health initiatives, with funding of $30,000–$120,000 per LHJ and a performance period from January 1 to June 30, 2026. Five considerations grounded the decision to fund LHJs:

- **Local fit.** LHJs are embedded within local CHW ecosystems and can co-design tools that genuinely reflect local languages, cultures, connectivity constraints, and workflows, something a centralized product cannot easily do.
- **Risk distribution.** Supporting multiple LHJ-led projects spreads risk, surfaces implementation challenges across diverse contexts, and avoids premature commitment to a single rigid solution.
- **Co-creation in practice.** The assessment consistently found that CHW co-creation is not optional. LHJ-led projects enable direct, sustained CHW engagement throughout design, development, and refinement in ways that a centrally procured product cannot.
- **Speed to action.** The LHJ Consolidated Contracts mechanism allowed DOH to disburse funding within weeks. A competitive procurement process would have taken 6–12 months before a partner was even selected, consuming the entire remaining project window.
- **Evidence before scale.** Rather than scaling a product before it is proven, the seed funding approach generates practical evidence of what works, for whom, and under what conditions, building the foundation that any future statewide investment will require.
- **Sustainability through local funding streams.** LHJs could direct seed funding toward projects they had already begun or had a credible pathway to maintain through their own funding streams, for example, through Foundational Public Health Services (FPHS) funding. This positioned seed-funded work to continue beyond the project window rather than ending when the seed funding closed.

This implementation decision does not close the door on a CHW-oriented mHealth application for Washington state in the future. It opens a path toward gathering evidence from local initiatives that could inform further digital innovation in community-based health services statewide. The feasibility assessment has documented what CHWs need, what designs are viable, what governance conditions are required, and where the current gaps lie. The seed-funded LHJ projects will add real-world implementation evidence to that foundation. Any future organization within DOH or beyond it that is positioned to take on sustained stewardship of a CHW-oriented digital tool will have a substantive evidence base to build on and will not need to start from scratch.

Washington State Department of Health
PO Box 47890, Olympia, WA 98504-7890
doh.wa.gov

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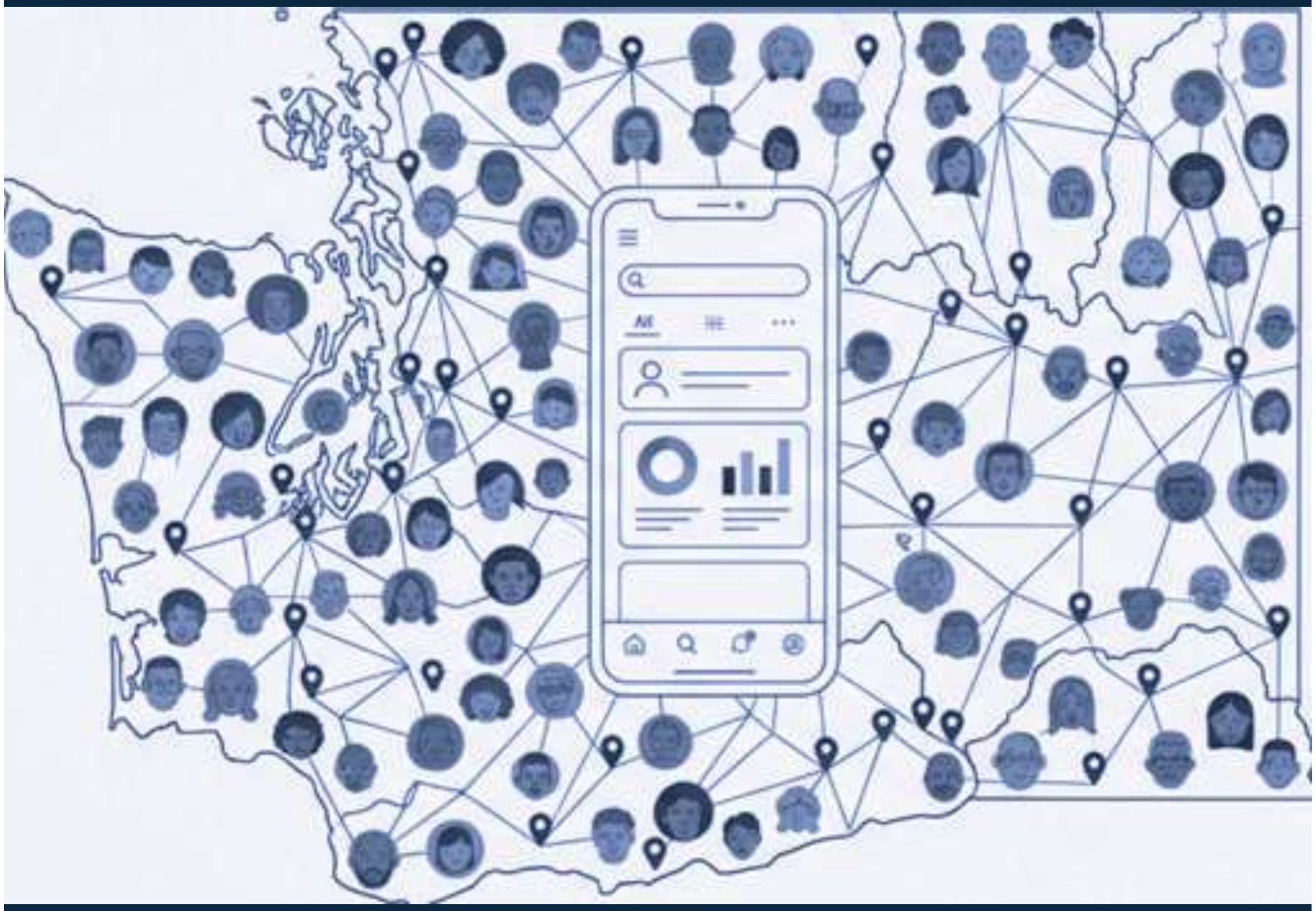

STRENGTHENING MATERNAL AND CHILDHOOD IMMUNIZATION THROUGH CHW-CENTERED DIGITAL TOOLS:

A FEASIBILITY ASSESSMENT FOR WASHINGTON STATE

Washington State Department of HEALTH