



Global to Local ~ Kittitas County

REDCap

(Research Electronic Data Capture)

Final Case Study Report

**DIGITAL AND MOBILE TOOLS TO SUPPORT COMMUNITY
HEALTH EDUCATION AND PROMOTION.
KITITAS COUNTY CASE STUDY
WASHINGTON STATE DEPARTMENT OF HEALTH**

1. PROJECT OVERVIEW

Project title	REDCAP IMPLEMENTATION FOR COORDINATED PUBLIC HEALTH DATA SYSTEMS
Name of Grantee	KITITAS COUNTY PUBLIC HEALTH
Project timeframe (Start-End)	JANUARY 1, 2026-JUNE 30, 2026
Primary digital focus area(s):	ACCESS TO DATA HEALTH INFORMATION AND EDUCATION DIGITAL INFRASTRUCTURE AND INTEROPERABILITY DIGITAL NAVIGATION AND DATA SYSTEMS MODERNIZATION
Primary population(s) served:	COMMUNITY HEALTH WORKERS (CHWs) RURAL POPULATIONS IN KITITAS COUNTY MARGINALIZED AND UNDERSERVED COMMUNITIES CLIENTS ACCESSING CARE COORDINATION, COMMUNICABLE DISEASE SERVICES, AND RESOURCE DISTRIBUTION PROGRAMS

2. PRE-PROJECT CONTEXT AND LOCAL NEED

2.1 Local Context

KCPHD operates multiple programs that rely on data collection and coordination, including communicable disease investigation, care coordination, and community resource distribution (e.g., car seats, life jackets, and air purifiers).

As public health programs become increasingly data-driven, KCPHD recognized a growing need for systems that could support efficient data collection and storage, reporting, and client communication. Existing systems met individual program needs but lacked the compatibility, scalability, and flexibility necessary to support coordinated service delivery across the department.

Kittitas County also includes rural and geographically dispersed communities where internet connectivity may be limited or inconsistent. **These operational realities highlighted the need for tools that support mobile access, offline functionality, and low-bandwidth environments.**

2.2 Problem Statement

KCPHD lacked a centralized, secure, and scalable data system to support coordinated service delivery, health education, and program operations across multiple public health programs.

Prior to this project, staff relied on a combination of spreadsheets, paper records, program-specific databases, email communications, and manual tracking processes. Information was often stored in different locations, making it difficult to efficiently access, share, and analyze data across programs. As a result, staff spent significant time performing administrative tasks, duplicating data entry, and manually tracking client interactions and program outcomes.

These challenges affected both staff and community members by creating

- Fragmented workflows across programs and services
- Delays in accessing and sharing critical health information
- Limited ability to coordinate services across teams
- Inconsistent data collection and reporting practices
- Challenges measuring program outcomes and demonstrating impact
- Increased administrative burden on staff
- Limited ability to communicate with clients using modern, accessible tools
- Inequitable access to services for clients in rural or underserved areas

As KCPHD continues to modernize public health services, leadership recognized the need for a flexible platform capable of supporting multiple programs, improving operational efficiency, strengthening data quality, and enhancing client experience. The project was designed to create a foundation for long-term digital transformation while supporting more coordinated and data-informed public health practice.

3. PROJECT RATIONALE

3.1 Rationale for Selected Approach

KCPHD selected REDCap as a secure, flexible, and scalable platform to support data modernization efforts and improve coordination across public health programs. KCPHD considered several approaches to data modernization, including commercial case management systems, program-specific software, and continued use of existing tools. REDCap was ultimately selected because it

provided the flexibility to support multiple public health programs while remaining affordable, secure, and customizable to local needs.

Key factors influencing this decision included

- Feasibility: Existing partnership with county IT and the ability to establish local infrastructure to support implementation
- Cost-effectiveness: REDCap offers robust functionality without the ongoing licensing costs associated with many commercial systems
- Security: Supports HIPAA-compliant workflows and can be configured to support 42 CFR Part 2 requirements
- Flexibility: Can be adapted to support a wide variety of public health programs, workflows, and reporting needs
- Sustainability: Provides a scalable platform that can grow with organizational needs and support long-term data modernization efforts

An additional advantage of REDCap is the ability to adapt and build upon projects developed by other organizations and public health partners. This flexibility allows KCPHD to leverage existing tools and workflows when appropriate, reducing development time and supporting rapid deployment of new data collection efforts.

A digital approach was necessary to improve access to information, streamline workflows, strengthen program evaluation capabilities, and support mobile and remote work in a largely rural service area.

4. PROJECT DESIGN

4.1 KCPHD implemented a data modernization initiative centered around REDCap, a platform designed to improve data collection, program coordination, client communication, and reporting across multiple public health programs.

The project involved more than the implementation of a new software platform. Activities included workflow assessment and process mapping, staff engagement and requirements gathering, governance planning, system design, and development of pilot applications to support public health operations.

The project was designed to:

- Standardize data collection practices across programs
- Improve coordination and information sharing among staff
- Support case management and client communication activities
- Increase access to real-time data for program management and decision-making
- Strengthen program evaluation and reporting capabilities

- Create a scalable foundation for future digital modernization efforts

As part of this work, KCPHD developed and designed pilot modules to support priority public health functions, including care coordination and communicable disease response. Staff also developed a resource distribution module to support field-based public health operations and community outreach activities.

These modules are intended to improve the client experience by reducing repetitive information collection, supporting more timely follow-up, and helping staff coordinate services more efficiently across programs.

Several of the planned applications support the delivery of health information and education, including follow-up messaging, distribution of educational materials, and client communication during communicable disease response and care coordination activities. These capabilities will help improve access to health information while supporting more consistent communication across programs.

The resource distribution module was designed to facilitate the distribution of public health supplies such as air purifiers, life jackets, car seats, and other community resources. The module includes electronic eligibility forms, hold harmless agreements, inventory tracking tools, and distribution documentation that can be completed in the field using mobile devices. This approach reduces paper-based processes, improves data quality, and provides more timely access to distribution and inventory information.

Staff also explored additional applications for client self-service tools and other operational workflows identified during the assessment process.

While technical implementation remains ongoing, the project established the organizational foundation, workflow documentation, and governance framework necessary to support future deployment and expansion of REDCap across the department.

4.2 Intended Users

Primary Users

- Community Health Workers
- Epidemiologist
- Communicable disease staff
- Health promotion staff

Secondary Users

- Syringe Services Program staff
- Administrative and leadership staff

Beneficiaries

- Community members receiving services
- Marginalized populations with barriers to access

4.3 Roles and Responsibilities

- **Deputy Director & Assessment Coordinator:** Project leadership, system design, governance, process mapping
- **Epidemiologist:** Data structure, analysis support, and system alignment
- **CHWs & Program Staff:** Workflow input, pilot participation, client engagement
- **Communications Coordinator:** Plain language, accessibility, and translation support
- **County IT Department:** Server setup, security configuration, and technical infrastructure

4.4 User-Centered Design and Engagement

User needs were identified through:

- Current state process mapping
- Staff engagement across programs, with particular emphasis on CHWs and frontline staff who regularly interact with clients
- Review of existing workflows and pain points

Engagement methods included:

- Internal consultations and collaborative design sessions
- Internal testing of workflows
- Iterative feedback during implementation

User input directly influenced:

- Workflow design in REDCap
- Prioritization of features (e.g., mobile use, simplified forms)
- Development of client-facing materials

User engagement played a critical role throughout the project and informed both technical and operational decision-making.

Rather than beginning with software design, KCPHD first focused on understanding how staff currently collect, use, and share information. These conversations helped identify pain points, opportunities for standardization, and features that would provide the greatest value to staff and clients. This approach ensured that system development was driven by user needs rather than technology alone.

4.5 Equity, Trust and Community Considerations

KCPHD integrated equity through

- Use of plain language standards
- Spanish translation of materials
- ADA- and WCAG-compliant design
- Mobile and low-bandwidth optimization

Existing departmental infrastructure ensured accessibility standards were consistently applied, particularly through CHWs and communications staff. Rural communities often face transportation, connectivity, scheduling, and service access barriers. The project sought to reduce these barriers by exploring mobile-friendly, low-bandwidth, and self-service tools that allow clients to engage with programs more conveniently while reducing administrative burden on both staff and community members.

Kittitas County also includes Spanish-speaking residents and other populations that may experience barriers to accessing services or information. The project emphasized plain language communication, translation capabilities, and flexible service delivery approaches to help ensure that digital tools can be adapted to meet the needs of diverse communities and support equitable access to public health services.

5. IMPLEMENTATION PROCESS

5.1 Implementation Timeline

Planning Phase (January-February 2026)

Kittitas County Public Health Department began the project by establishing project governance, identifying priority use cases, and coordinating with county IT to install and configure a REDCap server. During this phase, staff identified initial pilot projects, including care coordination and communicable disease workflows, and developed a project plan focused on improving data collection, client communication, and program coordination.

Development and Discovery Activities (February-April 2026)

As technical configuration work progressed, KCPHD conducted extensive workflow mapping and staff engagement activities across multiple programs. Staff participated in interviews and process reviews to document current data collection practices, identify pain points, and explore opportunities for system improvement. REDCap training and exploration activities were conducted to better understand available functionality and potential applications.

Adaptation Activities (March-May 2026)

Technical challenges related to server configuration limited the ability to fully test and deploy REDCap applications. Rather than pausing the project, KCPHD shifted focus toward organizational readiness activities, including process mapping, workflow redesign, governance planning, and learning from other jurisdictions using REDCap. This period also included development of draft modules, forms, and implementation concepts for future deployment.

Pilot Preparation and Sustainability Phase (May-June 2026)

Project staff continued building templates, refining workflows, identifying future use cases, and developing plans for phased implementation once technical barriers are resolved. The project concluded with a stronger understanding of departmental data needs, clearer workflow documentation, and a roadmap for future REDCap deployment.

5.2 Training and Support

Project staff participated in REDCap training opportunities, peer learning activities, and discussions with other local health jurisdictions currently using REDCap. These activities helped staff better understand the platform's capabilities and identify practical applications for public health programs. Project staff also developed a training plan for new department users in REDCap.

Technical support was provided through collaboration with county IT staff responsible for server installation and configuration.

Training efforts focused not only on REDCap functionality but also on helping staff think critically about their existing processes, data collection methods, and opportunities for modernization. This approach increased staff engagement and generated ideas for future system improvements beyond the initial project scope.

5.3 Adaptations During Implementation

KCPHD has experienced significant challenges related to server configuration and implementation. During this time, we have continued progressing the project

by learning from other jurisdictions using REDCap and meeting with staff to better understand existing data collection systems and workflows. While we are able to build templates and systems within REDCap, our current server configuration does not yet allow for full product testing. We are actively working to address this issue.

The most significant adaptation resulted from unexpected server configuration challenges that prevented full testing of REDCap functionality. At the same time, KCPHD experienced competing priorities associated with a local measles response, which required substantial staff time and resources.

Project leaders assessed project risks and opportunities and determined that continuing workflow analysis and stakeholder engagement would provide long-term value while technical issues were being resolved. Rather than delaying all project activities, staff focused on documenting business processes, identifying system requirements, and building foundational knowledge that will accelerate implementation once technical barriers are addressed.

This adaptive approach allowed the project to continue making meaningful progress despite factors outside the direct control of the project team.

6. EARLY RESULTS – MONITORING AND LEARNING

6.1 Indicators or Signals Tracked

Because the project remained in the planning and development phase, KCPHD focused on process and readiness indicators rather than outcome measures.

Indicators and signals used to monitor progress included

- Number of staff consultations and workflow review sessions completed
- Identification of priority use cases and pilot projects
- Completion of workflow maps and process documentation
- Development of REDCap templates, forms, and draft modules
- Staff feedback regarding current data collection challenges and opportunities for improvement
- Identification of opportunities to improve client experience and reduce administrative burden

Qualitative feedback from staff served as one of the most valuable indicators of project progress. Through discussions and workflow reviews, staff identified

numerous opportunities to streamline services, improve communication, and strengthen data quality across programs.

6.2 Use of Data and Feedback

KCPHD staff reviewed existing data systems and workflows, and the information gathered during those exploration sessions will help guide that pilot implementation. During one of these sessions with our Harm Reduction Specialist (Community Health Worker) we discovered that one of their program workflows could benefit from more of a “hands off” check in system for their clients. We are now working to set up a kiosk system that will create an approachable experience for their clients and streamline data collection and encounter information.

Feedback sessions also revealed that many programs had independently developed similar tracking, communication, and documentation processes. This highlighted opportunities for standardization across programs and reinforced the value of a flexible platform capable of supporting both shared and program-specific workflows.

Staff also identified opportunities to use REDCap to support communicable disease response activities, resource distribution events, and client communication workflows. These discussions helped prioritize future development efforts and ensured that implementation activities remained aligned with operational needs.

6.3 What Worked Well

KCPHD chose REDCap for its versatility. After exploration and training, we are pleased with the many opportunities it provides to improve our data systems and processes.

One aspect of the project that exceeded expectations was the value of the workflow assessment and staff engagement process.

While technical implementation challenges delayed full deployment, the project created an opportunity for staff across multiple programs to evaluate existing data collection practices, identify inefficiencies, and discuss opportunities for improvement. These conversations increased staff understanding of how information moves throughout the organization and highlighted areas where workflows could be simplified or standardized.

The project also strengthened collaboration between programs that do not traditionally work closely together on data systems. Staff were able to share challenges, identify common needs, and explore opportunities for shared solutions. This helped create greater organizational alignment around data modernization efforts and reinforced the importance of building systems that support both staff efficiency and client experience.

Another success was the development of a field-based resource distribution module. Through discussions with program staff, KCPHD identified an opportunity to modernize the process for distributing public health supplies during community events and emergency response activities. The module incorporates electronic eligibility forms, hold harmless agreements, inventory tracking, and distribution documentation that can be completed in real time using mobile devices. This use-case demonstrated REDCap's flexibility and highlighted opportunities to improve efficiency, data quality, and service delivery in field settings.

Potential applications include the distribution of air purifiers during wildfire smoke events and life jackets through injury prevention programs. The module allows staff to collect eligibility information, manage inventory, capture required documentation, and track distributions electronically in the field, reducing paperwork and improving access to timely program data.

The project also uncovered new use cases that were not originally included in the project scope. Through staff consultations and process mapping, KCPHD identified opportunities to improve client communication, support self-service data collection, streamline encounter tracking, and enhance program evaluation efforts. These findings expanded the department's vision for how REDCap and similar tools can support public health operations in the future.

Although the project encountered technical barriers, it successfully established the foundation, organizational knowledge, and staff engagement needed to support long-term data modernization efforts.

6.4 Challenges Encountered

Technical Challenges

KCPHD experienced significant challenges related to server configuration and implementation. While REDCap itself offers extensive functionality, establishing a secure environment that met county IT requirements proved more complex and time-consuming than initially anticipated. These challenges limited the

department's ability to fully test and deploy applications during the grant period. While we were able to design forms, workflows, and templates, our server configuration did not yet support comprehensive end-to-end testing. KCPHD continues to work closely with county IT staff to address these issues and complete implementation.

Workforce and Capacity Challenges

Like many local health jurisdictions, KCPHD balances modernization efforts with ongoing public health service delivery. During the project period, staff capacity was impacted by competing priorities, including communicable disease response activities and multiple measles investigations. These response efforts required significant staff time and shifted resources away from project implementation activities.

Additionally, meaningful system development requires participation from staff across multiple programs. While this collaboration was valuable, scheduling meetings, gathering feedback, and reviewing workflows required more staff time than originally anticipated.

Change Management and Process Challenges

The project highlighted that technology implementation often requires organizations to evaluate and sometimes redesign existing business processes. In several cases, staff discovered that workflow inefficiencies were related to process design rather than software limitations. While these discoveries ultimately strengthened the project, they required additional time for discussion, process mapping, and consensus-building before technical solutions could be developed.

Lessons from the Challenges

Although these challenges affected project timelines, they also reinforced the importance of building a strong foundation before implementation. The additional time spent understanding workflows, engaging staff, and addressing technical requirements will help support a more sustainable and successful deployment in the future.

6.5 Unexpected Outcomes

One unexpected outcome was the extent to which the project served as a catalyst for broader organizational process improvement. Although the original goal focused on implementing a new data platform, staff engagement activities revealed opportunities to improve workflows regardless of the technology being

used. The project prompted staff to examine existing processes, identify inefficiencies, and discuss opportunities for standardization across programs.

The project also highlighted the importance of understanding existing business processes before introducing new technology. Several workflow challenges initially believed to be technology-related were ultimately identified as process, communication, or documentation issues that could be addressed independently of REDCap implementation. This reinforced the value of investing time in workflow assessment and process mapping before building technical solutions.

The project also expanded beyond traditional case management and data collection functions. During workflow discussions, staff identified opportunities to use REDCap to support field-based resource distribution activities. What began as a conversation about data modernization evolved into the design of electronic tools that could support inventory management, eligibility determination, hold harmless agreements, documentation, and reporting for public health supply distribution events. This broadened the department's understanding of how digital tools can support operational activities beyond their original intended use.

Additionally, the project generated new ideas for future applications that were not originally part of the project scope. For example, discussions with program staff identified opportunities to implement client self-service and kiosk-based data collection approaches to streamline encounters, improve client experience, and reduce administrative burden. Staff also identified additional opportunities to enhance client communication, resource distribution tracking, and program evaluation through future REDCap development.

Another unexpected outcome was the increased awareness among staff of how data is collected, shared, and used throughout the department. Conversations that began as system design discussions often evolved into broader discussions about program goals, reporting needs, and opportunities for collaboration, helping build organizational support for future data modernization efforts.

7. FEASIBILITY AND SUSTAINABILITY REFLECTIONS

Technical Feasibility

The project demonstrated that REDCap is a technically capable platform for supporting public health workflows, data collection, client communication, and resource distribution activities. However, successful implementation requires significant attention to infrastructure, security requirements, user permissions, and governance planning.

Workforce Burden and Capacity

Implementation required substantial staff time for workflow assessment, process mapping, system design, and stakeholder engagement. While competing priorities affected timelines, these activities also strengthened organizational understanding of existing processes and identified opportunities for improvement.

Costs

REDCap offers a cost-effective alternative to many commercial case management systems because it does not require expensive licensing fees. The primary costs associated with implementation included staff time, technical support, governance development, training, and system configuration.

Data Privacy and Security

Protecting client information remained a central consideration throughout the project. REDCap's ability to support HIPAA-compliant workflows and role-based access controls was a significant factor in platform selection. Collaboration with county IT staff helped ensure privacy and security requirements were incorporated into implementation planning.

Long-Term Ownership and Stewardship

KCPHD intends to maintain REDCap as a long-term organizational resource. The project established a foundation for governance, workflow standardization, and future system expansion that can support multiple programs over time.

Key Lessons Learned

- Technology projects are most successful when workflow assessment and process mapping occur before system design begins.
- Technical infrastructure and security requirements should be assessed early and continuously throughout implementation.
- Establishing governance, data standards, and clear ownership is just as important as selecting the technology itself.

8. LOOKING AHEAD

Although the grant-funded project period is ending, KCPHD remains committed to REDCap as a long-term strategy for public health data modernization and service delivery improvement. Efforts will focus on resolving remaining server configuration issues, completing review and validation of proposed workflows with program staff, and deploying initial modules for care coordination, communicable disease response, and resource distribution programs.

The workflow assessments completed during this project have created a strong foundation for future implementation activities. Staff have identified additional opportunities to improve data collection, client communication, program evaluation, and service delivery through REDCap and related digital tools.

Future activities include

- Completion of care coordination and communicable disease modules
- Continued development and deployment of the resource distribution module for community outreach and emergency response activities
- Expansion of REDCap use into additional public health programs
- Development of client-facing forms, communication tools, and kiosk-based self-service options
- Continued staff training and governance development

While the grant-funded project period is ending, the work of modernizing public health data systems will continue. The project established critical infrastructure, organizational knowledge, workflow documentation, and implementation readiness that will support future digital transformation efforts throughout the department.

9. CONTACT INFORMATION

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