Demonstrating Value for Kūpuna Support Navigators

A guide for conducting a return in investment analysis of your kūpuna-focused Community Health Worker program

HAWAIʻI PUBLIC HEALTH INSTITUTE

KŪPUNA COLLECTIVE

University of Hawai'i at Mānoa
Center on Aging
Thompson School
Social Work & Public Health

KĀLELE CARE SERVICES

Hale Makua

Hawai'i Dementia Initiative

This page is left intentionally blank

Demonstrating Value for Kūpuna Support Navigators

A guide for conducting a return on investment analysis of your kūpuna-focused Community Health Worker program

HAWAIʻI PUBLIC HEALTH INSTITUTE | MARCH 2026

AN EXECUTIVE SUMMARY

This guide explains how Kūpuna Support Navigator programs demonstrate measurable financial and community value by measuring return on investment (ROI).

Improved Health Outcomes
Community Health Workers (CHWs) support medication adherence, chronic disease management, and care coordination for kūpuna.

Reduced Healthcare Costs
Programs reduce emergency department visits and hospital readmissions.

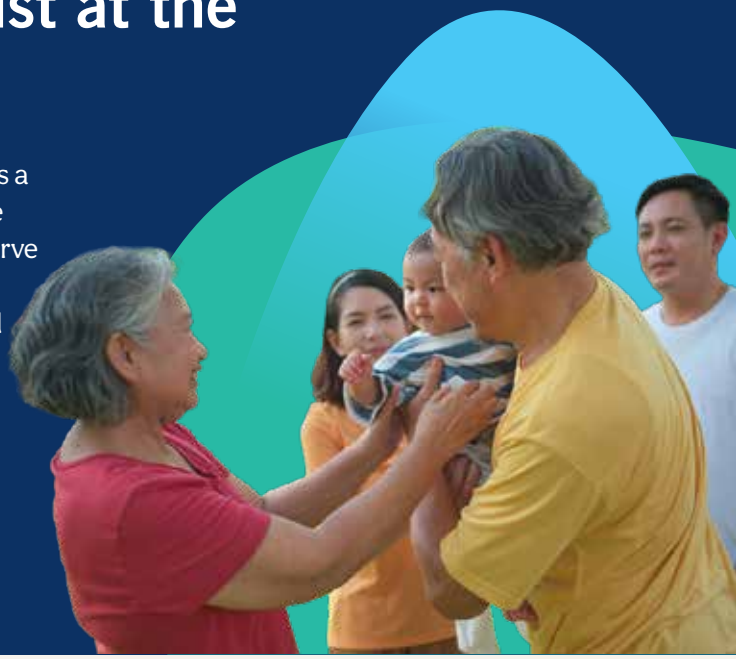
Strengthened Communities
CHWs address social determinants such as housing, food security, and transportation.

"Demonstrating ROI is essential for sustaining CHW programs."

Frontline workers building trust at the heart of community health

"A **Community Health Worker** is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. A Community Health Worker also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy."

—American Public Health Association



Community Health Workers (CHWs) demonstrate certain qualities and skills throughout a wide range of roles to serve the community. They may provide support in a variety of settings including schools, health systems, food pantries, libraries, government agencies, community-based organizations, and more. CHWs demonstrate many qualities including dedication, courage, community connectedness, resourcefulness, compassion, and more in their service to the community.

CHW core roles include:

- Cultural mediation among individuals, communities, and service systems
- Providing culturally appropriate health education and information
- Care coordination, case management, and system navigation
- Providing coaching and social support
- Advocating for individuals and communities
- Building individual and community capacity
- Providing direct service
- Implementing individual and community assessments
- Conducting outreach
- Participating in evaluation and research

WHAT IS A COMMUNITY HEALTH WORKER? Cont.

Skills of CHWs include:

- Communication
- Interpersonal and relationship building
- Service coordination and navigation
- Capacity building
- Advocacy
- Education and facilitation
- Individual and community assessments
- Outreach
- Professional skills and conduct

CHWs may have other names, including:

- Community Health Representative
- Peer Educator
- Community Health Navigator
- Patient Navigator

Among CHWs, *Kūpuna Support Navigators* have specialized expertise to meet the unique needs of older adults and their caregivers. In Hawai'i, Kūpuna Support Navigator programs aim to increase the availability, capacity, and sustainability of these specialized CHWs.

To learn more about CHWs and connect to the CHW community, please visit:

National Council on CHW Core Consensus Standards
https://www.c3council.org/

Hawai'i Community Health Worker Association
https://hichw.org/

Hawai'i Public Health Institute
https://www.hiphi.org/chw/

Calculating the return on your program investment

A return-on-investment (ROI) calculation is the net benefit resulting from a program divided by the total program cost. See the Community Health Worker ROI Calculator in Appendix A and the supplemental ROI calculator in the Excel worksheet for more details.

THE ROI FORMULA

*ROI = Net benefit resulting from a program ÷ Total program cost

DEMONSTRATE IMPACT

CHWs demonstrate significant, measurable impact in supporting high-needs populations across utilization, health outcomes, and social determinants of health.

DRIVE SUSTAINABILITY

ROI is a common and important financial tool. Demonstrating return is often key to securing continued and expanded funding for your CHW program.

INFORM SCALE

ROI calculations can predict the impact of scaling your program or focusing on specific areas of high financial and clinical impact.

SUPPORT POLICY CHANGE

Data-driven ROI findings are powerful advocacy tools at the state and national level, especially for Medicaid reimbursement policy discussions.

Why should we calculate ROI for kūpuna support and other CHW programs?

- CHWs demonstrate significant impact in supporting high needs populations.
- ROI is a common and important financial tool. Demonstrating ROI may be key to the sustainability of your CHW program and others in Hawai'i.

What key components are needed for ROI calculations?

Metrics:

Do you currently track outcome or process metrics for your CHW program? If you do, that's great! Look at your current outcome metrics to see which metrics can play into an ROI calculation. If you don't currently track metrics or are starting a new program, consider which metrics can show financial value and start tracking those alongside other metrics that show non-financial value from the beginning. Having specific, measurable outcomes or S.M.A.R.T. goals when developing a program and carefully tracking healthcare utilization and cost metrics is ideal. Make sure your data collection processes and systems allow you to track the data you want, even if using a spreadsheet! It is not necessary to have a fancy electronic medical record or data system to show the value that your CHW program provides through an ROI analysis. If building your own system or spreadsheet or customizing an existing system, try to ensure you have discreet fields that only allow certain, standard inputs, by using drop downs, check boxes, and specified data types like numbers or dates. For example, if you were trying to track how many referrals to social services were made throughout your program and you recorded referrals to a food bank as "food bank," food pantry," and "food support," it would be harder to count those referrals in your data than if you standardized all entries as "food bank." See the Community Health Worker Program Outcomes Data Dictionary in Appendix B for additional outcomes information including definitions, numerators, denominators, and examples. Setting your data points up right from the beginning and having clear data definitions will help you more easily calculate your ROI later.

Collecting baseline or comparison group data is also helpful in demonstrating ROI. For example, if your population has a baseline 30-day hospital readmission rate of 20% and those enrolled in your services have a lower 30-day hospital readmission rate, this can demonstrate financial and non-financial value.

Budget:

Knowing the cost to run your operations as well as any startup, overhead, and inflation costs are important components of calculating ROI. Ensure you have systems in place to accurately record program costs over time. Consult with your financial department or other team members in understanding how to create an accurate budget and predict and record actual costs throughout the program.

How do I determine typical health costs?

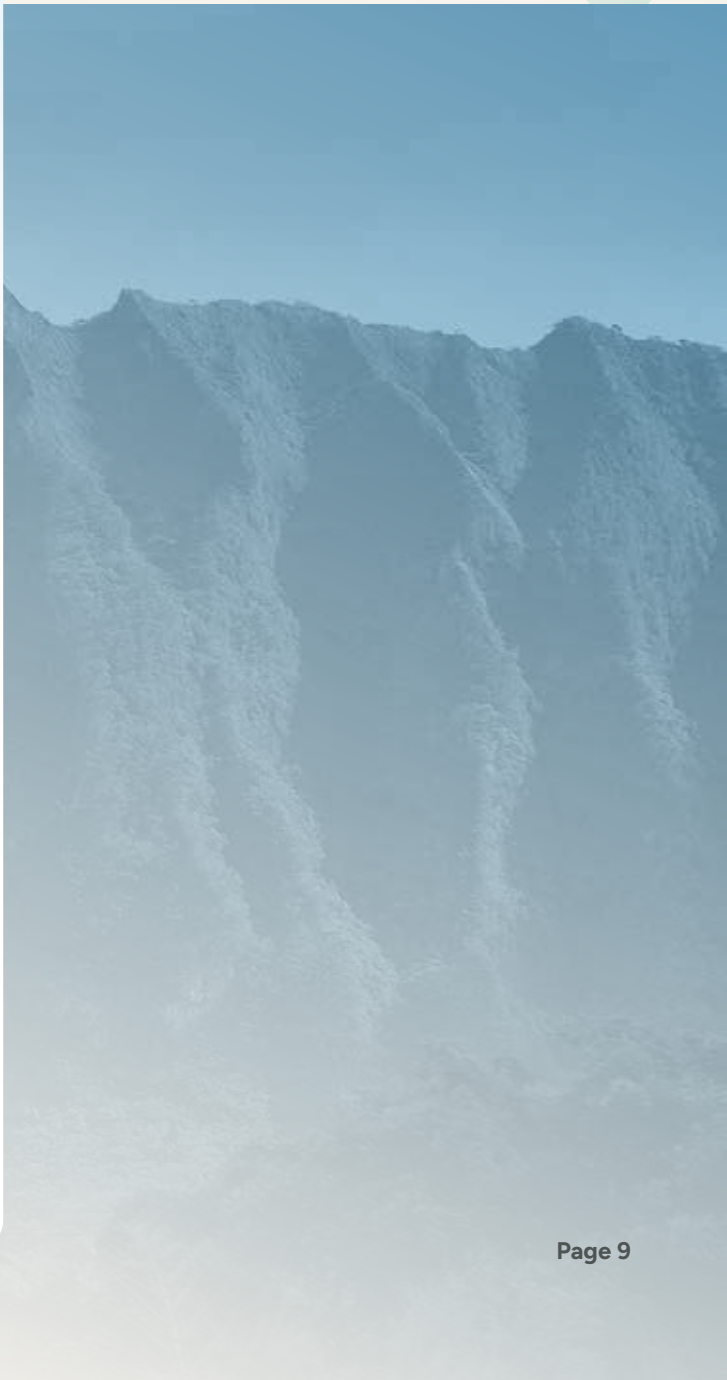
There are multiple sources of health cost and utilization data available. It's best to use health cost data specific to Hawai'i, your geographic area, your industry, and/or your population. However, sometimes that data is not available and you may need to use proxy data from publicly available sources or the literature. This is ok as long as you disclose your data dates, sources, and assumptions.

Please note:

Not all CHW programs collect sufficient data to estimate an ROI and you may not be able to estimate the ROI for every component of your program, even if you think there is a financial impact of the service or intervention provided.

When building an ROI model, ask yourself who your target audience is and what outcomes they are most interested in. This will help you demonstrate the value of your program to various stakeholders. Tailor your ROI calculations or program impact studies to meet the needs of various stakeholders.

See the Community Health Worker Program Value Demonstration Framework in Appendix C for more detail.



What metrics should I use to calculate ROI?

For Kūpuna Support Navigator programs in Hawai‘i, the following metrics are particularly valuable for ROI calculations and align with population health models and literature that has demonstrated ROI from other similar programs:

HEALTHCARE UTILIZATION:

- ED Visit Rate
- 30-Day Hospital Readmission Rate
- Institutional Length of Stay (SNF or Inpatient)

HEALTH OUTCOMES

- Medication Adherence Improvement or Medication Reconciliation
- Chronic Disease Management
- Advanced Care Planning

LICENSED STAFF TIME SAVINGS:

- Primary Care Providers
- Nurses
- Social Workers
- Other staff that can offload kupuna support duties to CHWs and remain practicing at the top of their license

SOCIAL DETERMINANTS BENEFITS:

- Housing Stabilization
- Food Security
- Transportation Access Expansion

These metrics are just a start and your program may have other metrics that can be included to reflect the unique impact you provide.

ROI results can show the impact of your program and the value you provide to the community, health systems, or individuals. ROI calculations can also be used to predict the impact of scaling your program or focusing on specific areas of impact (e.g., your program shifts to focus on hospitalization reduction and advanced care planning because of the high financial impact or your program is able to enroll more patients in services by increasing the number of CHWs or efficiencies in your program without increasing the cost of supervisors or overhead).

How do I demonstrate the impact my program has that may not have a direct financial benefit?

While the numbers are essential for demonstrating ROI, the impact of your CHW program on kūpuna health and wellbeing can be more powerfully conveyed through storytelling and summarizing non-monetized results. Pairing quantitative data with qualitative stories creates a compelling case for your program's value.

When sharing stories about your program:

1. Know Your Audience

Before crafting any story, consider who will be receiving this information:

- Funders may be interested in financial outcomes and sustainability
- Healthcare providers or partners may focus on clinical outcomes and integration between service lines
- Community members may be more likely to understand and appreciate data when paired with personal stories that reflect their cultural experiences and lived realities

2. Show Impact, Not Just Features:

Rather than listing what your program offers (home visits, medication reviews, resource connections), show what those features accomplish for kūpuna.

- Example: Instead of: *"CHWs help kūpuna manage medications,"* an alternate may be: *"Through support from her CHW, Aunty Mary no longer misses her blood pressure medication—and hasn't been to the emergency room in six months."*

3. Use Transformation Narratives:

Stories should reflect a before-and-after journey:

- What challenge did the kūpuna or family face?
- How did the CHW help address this challenge?
- What changed for the better?

4. Keep it relatable and respectful:

Use simple language, avoid jargon, and respect privacy. With permission, include:

- First names or pseudonyms
- Photos (if appropriate)
- Direct quotes or audio/video snippets (if appropriate)

5. Pair Stories with Data:

Always connect individual stories to your broader outcomes:

- *"Aunty Mary's story reflects a broader trend—85% of kūpuna in our program reported improved medication adherence, resulting in a 40% reduction in related ED visits."*

Utilizing ROI Data to Drive Policy Change

From a policy perspective, ROI data can be powerful for advocacy purposes. Several strategic policy options exist to sustain the Kūpuna Support Navigator program as an enhanced CHW model.

Nationally, state Medicaid agencies are increasingly prioritizing managed-care financing mechanisms to support these roles, typically utilizing State Plan Amendments, managed-care contracts, or Section 1115 demonstration waivers.

According to data tracked by the National Academy for State Health Policy, at least 29 states—including California, Michigan, New Mexico, Oregon, Washington, and South Dakota—now provide Medicaid reimbursement for CHW services. New Mexico, for instance, mandates that managed care organizations (MCOs) provide CHW support to at least 3% of their enrollees annually. Similarly, South Dakota has implemented a fee-for-service model that allows approved organizations to enroll as CHW agencies and bill the state directly.

While Med-QUEST currently does not reimburse for CHW services in Hawai'i, there is a clear opportunity to propose policy change in this area. One policy solution is to pursue a Medicaid State Plan Amendment or an 1115 waiver to formally reimburse CHW services. This shift would allow the state to require MCOs to embed CHWs, specifically through the enhanced Kūpuna Support Navigator model, directly into their managed care contracts. Beyond Medicaid, a sustainable long-term strategy would involve braiding these funds with other federal aging dollars, state appropriations, and private foundation grants. By diversifying the financial base, Hawai'i can ensure the necessary training and infrastructure for the Kūpuna Support Navigator program remain resilient and scalable moving forward.

29 states

including California, Michigan, New Mexico, Oregon, Washington, and South Dakota– now provide Medicaid reimbursement for CHW services.

MEDICAID STATE PLAN AMENDMENT OR 1115 WAIVER

Pursue a formal pathway to reimburse CHW services in Hawai'i, allowing the state to require MCOs to embed CHWs directly into their managed care contracts through the Kūpuna Support Navigator model.

NEW MEXICO MODEL — MCO ENROLLMENT MANDATE

New Mexico mandates that managed care organizations provide CHW support to at least 3% of their enrollees annually — a replicable model for Hawai'i.

SOUTH DAKOTA FEE-FOR-SERVICE APPROACH

South Dakota has implemented a fee-for-service model allowing approved organizations to enroll as CHW agencies and bill the state directly for services rendered.

BRAIDED FUNDING STRATEGY

A sustainable long-term strategy involves braiding Medicaid funds with federal aging dollars, state appropriations, and private foundation grants to ensure resilience and scalability.

APPENDIX A

Community Health Worker Program ROI Calculator

1. Program Cost Inputs

COST CATEGORY	ANNUAL COST ($)
Personnel	$
CHW/Navigator Salaries	$
Supervisor Salaries	$
Benefits	$
Training	$
Program Operations	$
Administrative Overhead	$
Transportation	$
Technology	$
Supplies & Materials	$
Other Costs	$
Contracted Services	$
Community Events	$
TOTAL PROGRAM COSTS	$

APPENDIX A Community Health Worker Program ROI Calculator (Cont.)

2. Program Benefit Inputs

2.1. Healthcare Utilization Avoided

UTILIZATION MEASURE	BASELINE RATE	PROGRAM RATE	DIFFERENCE	# CLIENTS	UNIT COST ($)	ANNUAL SAVINGS ($)
ED Visits Rate	—	—	—	—	$	$
Hospital Admissions Rate	—	—	—	—	$	$
30-Day Hospital Readmissions Rate	—	—	—	—	$	$
Institutional Average Length of Stay	—	—	—	—	$	$
TOTAL UTILIZATION SAVINGS						$

2.2 Client Health Gains

BENEFITS MEASURE	# CLIENTS IMPACTED	BENEFIT PER CLIENT	ANNUAL VALUE ($)
Medication Adherence Improvement	—	—	$
Chronic Disease Management	—	—	$
Advanced Care Planning Completed	—	—	$
TOTAL CARE MANAGEMENT BENEFITS			$

2.3 Staff Time Savings

COST CATEGORY	HOURS SAVED	HOURLY RATE	ANNUAL VALUE ($)
Primary Care Providers	—	$	$
Nurses	—	$	$
Social Workers	—	$	$
Other Staff	—	$	$
TOTAL STAFF TIME SAVINGS			$

APPENDIX A Community Health Worker Program ROI Calculator (Cont.)

2.4 Social Determinants Benefits

SDOH CATEGORY	# CLIENTS IMPACTED	EST. VALUE PER CLIENT ($)	ANNUAL VALUE ($)
Housing Stabilization	—	$	$
Food Security	—	$	$
Transportation Access	—	$	$
TOTAL SDOH BENEFITS			**$**

3. ROI Calculation Summary

TOTAL PROGRAM BENEFITS	TOTAL PROGRAM COSTS	NET PROGRAM VALUE
$–	$–	$–
ROI RATIO (NET + COSTS)	**ROI PERCENTAGE**	**COST PER CLIENT**
–	–%	$–

Note: Use only Healthcare Utilization Avoided or Other Benefits to calculate ROI — not both — to avoid double-counting value.

References

1. https://www.618resources.chcs.org/wp-content/uploads/2018/05/ROI-Toolkit-Final1.pdf
2. https://roi.healthbegins.org/welcome

APPENDIX B

Community Health Worker Program Outcomes Data Dictionary

This data dictionary provides standardized definitions for potential key outcome measures to be used by Community Health Worker (CHW) programs supporting kūpuna in Hawai'i. Each metric includes the purpose, calculation components, and example.

Healthcare Utilization Outcomes

MEASURE	PURPOSE	NUMERATOR	DENOMINATOR	EXAMPLE
ED Visit Rate	To assess program effectiveness in reducing avoidable emergency department utilization	Total number of ED visits during measurement period	Total number of program participants	If 75 program participants had 15 ED visits 15/75 = 20% ED visit rate
30-Day Hospital Readmissions Rate	To measure effectiveness in supporting successful care transitions and preventing avoidable readmissions	Number of unplanned readmissions within 30 days of discharge during measurement period	Total number of hospital discharges during the measurement period	If there were 40 hospital discharges among program participants and 6 resulted in readmissions within 30 days: (6 ÷ 40) × 100% = 15% readmission rate
Primary Care Follow-Up Completion Rate	To measure effectiveness in facilitating timely primary care engagement	Number of clients who completed primary care follow-up within recommended timeframe after qualifying event	Total number of clients who experienced a qualifying event with recommendation for follow-up	If 25 clients were discharged with instructions to follow up with primary care within 7 days, and 20 completed these appointments: (20 ÷ 25) × 100% = 80%
Institutional Length of Stay	To measure effectiveness in facilitating timely transition home or to the next level of care	Total days spent in an institutional setting by all clients	Total clients in an institutional setting (Skilled Nursing Facility (SNF), Inpatient, etc.)	If 50 clients spent a total of 1,200 days in a SNF, SNF Length of Stay: (1,200 ÷ 50) = 24 days

Medication Management Outcomes

MEASURE	PURPOSE	NUMERATOR	DENOMINATOR	EXAMPLE
Medication Adherence Improvement Rate	To assess effectiveness in supporting medication adherence	Number of clients with documented improvement in medication adherence based on standardized assessment	Total number of clients with identified medication adherence issues at baseline	If 30 clients had poor medication adherence at baseline, and 21 showed improvement at follow-up: (21 ÷ 30) × 100% = 70%
Medication Reconciliation Rate	To measure effectiveness in facilitating timely medication reconciliation after a qualifying event	Number of clients who completed medication reconciliation within recommended timeframe after qualifying event	Total number of clients who experienced a qualifying event with recommendation for follow-up	If 25 clients were discharged with expectation that medication reconciliation would be performed within 5 days, and 20 completed the medication reconciliation in that timeframe: (20 ÷ 25) × 100% = 80%

APPENDIX B

Community Health Worker Program Outcomes Data Dictionary (Cont.)

Self-Management & Quality of Life Outcomes

MEASURE	PURPOSE	NUMERATOR	DENOMINATOR	EXAMPLE
Patient Activation Measure (PAM) Improvement Rate	To measure increase in patient confidence/ self-management of their own health	Number of clients with increased Patient Activation Measure (PAM) score from baseline	Total number of clients with baseline and follow-up PAM assessments	If 35 clients completed both assessments, and 24 showed improvement from baseline score: (24 ÷ 35) × 100% = 69% improvement
Health Goal Achievement Rate	To assess client progress toward self-identified health objectives with CHW support	Number of client health goals achieved	Total number of health goals established by clients	If clients established 75 specific health goals and completely achieved 45 of them: (45 ÷ 75) × 100% = 60%
Social Needs Resolution Rate	To measure effectiveness in addressing social determinants of health affecting client wellbeing	Number of identified social needs successfully resolved	Total number of social needs identified through screening	If screening identified 120 social needs across all clients and 84 were successfully resolved: (84 ÷ 120) × 100% = 70%
% of Clients Reporting Improvement in Self-Reported Health Status	To measure effectiveness of CHW interventions on a clients' self-reported health status	Number of clients who report an improved health status score at program completion compared to their health status at enrollment on a 5 point Likert scale	Total number of clients who completed an enrollment and follow-up health status survey	If 40 clients completed both surveys and 25 clients reported an improvement, 10 reported no change, and 5 reported a decline, percentage improved: (25 ÷ 40) x 100 = 62.5%

Clinical Outcomes

MEASURE	PURPOSE	NUMERATOR	DENOMINATOR	EXAMPLE
Preventive Screening Completion Rate	To assess effectiveness in facilitating preventive care such as cancer screenings and vaccination	Number of recommended preventive services completed	Total number of recommended preventive services for which clients were eligible	If across all clients there were 150 recommended preventive services due and 105 were completed: (105 ÷ 150) x 100% = 70%

APPENDIX B

Community Health Worker Program Outcomes Data Dictionary (Cont.)

Program Performance & Patient Experience Outcomes

MEASURE	PURPOSE	NUMERATOR	DENOMINATOR	EXAMPLE
Client Enrollment Rate	Measures enrollment in services	Number of clients enrolled	Number of eligible clients referred or identified	If there are 120 clients enrolled out of the 150 eligible referrals received: (120/150) x 100% = 80%
Client Retention Rate	To assess ability to maintain client engagement	Number of clients who remained enrolled and actively engaged at the end of the measurement period	Total number of clients enrolled at the beginning of the measurement period	If 80 clients were enrolled at the beginning of the quarter, and 72 remained actively engaged at the end: (72 ÷ 80) × 100% = 90%
Referral Completion Rate	To assess effectiveness of care navigation	Number of completed referrals to support services	Number of referrals to other support services made by CHW	If there were 100 referrals made by the CHW and 75 referrals were completed: (75/100) x100 = 75%
Client Satisfaction Rate	To assess client perceptions of service quality and value	The sum of each client's self-rated satisfaction score out of 10	Total number of clients completing satisfaction assessment	If 65 clients completed satisfaction surveys and 30 rated the program 10/10, 30 rated the program 8/10, and 5 rated the program 7/10, satisfaction score: (30 x 10) + (30 x 8) + (5 x 7) = 575 ÷ 65 = 8.85/10
Net Promoter Score (NPS)	To assess client loyalty and likelihood to recommend the CHW program to others	(Number of Promoters - Number of Detractors)	Total number of respondents to NPS question	If out of 50 clients, 35 were Promoters (9-10), 10 were Passives (7-8), and 5 were Detractors (0-6): ((35 - 5) ÷ 50) × 100 = 60

Economic Outcomes

MEASURE	PURPOSE	NUMERATOR	DENOMINATOR	EXAMPLE
Program Return on Investment (ROI)	To quantify the financial value created by the program	Total financial benefits attributable to the program (cost avoidance + revenue generation)	Total program costs	If the program costs $100,000 to operate and generates $150,000 in benefits: ($150,000 ÷ $100,000) - 1 = 0.5 or 50%
Cost per CHW-Served Client	To measure efficiency and scalability of the program	Total operational cost of CHW program over a defined period	Number of unique clients served during that period	If the program cost is $150, 000 and there were 300 clients served: ($150,000/300) x 1 = $500 per client

APPENDIX B

Community Health Worker Program Outcomes Data Dictionary (Cont.)

Implementation Notes

Baseline Periods

For metrics requiring comparison to a pre-intervention period, standardize the baseline timeframe (typically 6-12 months before enrollment).

Risk Adjustments

Consider adjusting outcomes based on client risk factors or standardized risk scores, especially for utilization and clinical outcomes.

Sample Sizes

Note statistical reliability concerns for metrics with small denominators.

Benchmarking

Where available, include internal and external benchmarks for comparative assessment.

Data Collection Burden

Balance comprehensive measurement with practical limitations in data collection and analysis.

Continuous Refinement

Review and update definitions regularly based on program learning and evolving standards.

APPENDIX C

Community Health Worker Program Value Demonstration Framework

This framework provides a framework for Community Health Worker (CHW) programs supporting kūpuna to demonstrate their value to key stakeholders. It integrates quantitative metrics with qualitative elements that reflect the holistic impact of these programs and the typical stakeholders that are interested win different components of that impact.

Value Demonstration Matrix

VALUE DOMAIN	KEY METRICS	QUALITATIVE ELEMENTS	STAKEHOLDER PRIORITIES
Clinical & Medication Outcomes	• Clinical Outcomes such as Blood pressure control or diabetes management • Medication adherence and reconciliation • Preventive Screening Completion	• Health improvement stories • Quality of life narratives • Stories about harm avoidance	• Clinical leaders • Quality improvement teams • Kūpuna and caregivers
Healthcare Utilization	• ED visit reductions • Hospital admission prevention • Hospital Readmission prevention • Institutional Length of stay reduction • Primary Care Provider Follow-up	• Care transition experiences • Crisis prevention examples • Timely intervention stories	• Health plans • Hospital administrators • Healthcare CFOs • ACO leadership
Social Determinants	• Housing security rate • Food access improvement • Transportation needs met • Social connection increase • Safety improvements	• Environmental assessments • Community resource gaps • Cultural appropriateness	• Social service agencies • Community organizations • Public health officials • Policy makers
Patient Experience / Engagement	• Satisfaction rates • Net Promoter Score • Retention or enrollment rates • Referral completion • Health Goal achievement • Patient Activation Measures (PAM) • Self-rated health status	• Client testimonials • Family feedback • Cultural connections made • Trust development stories	• Kūpuna and families • Patient advocacy groups • Community leaders • Cultural organizations • Healthcare providers
Workforce Impact	• Provider satisfaction • Staff time savings • Workflow efficiency • Training completion • Job creation metrics	• Provider testimonials • Care team perspectives • Professional development stories	• Interdisciplinary teams • Practice managers • CHW employers • Training organizations
Financial Value	• Program ROI • Total cost of care reduction • Value-based performance • Cost per CHW-served client	• Long-term value projection • Investment case studies • Scaling opportunities	• Payers • Health system leadership • State agencies • Grant funders

REFERENCES

1. https://www.apha.org/apha-communities/member-sections/community-health-workers
2. https://www.c3council.org/
3. Coppa K, Kim EJ, Oppenheim MI, Bock KR, Conigliaro J, Hirsch JS. Examination of Post-discharge Follow-up Appointment Status and 30-Day Readmission. J Gen Intern Med. 2021 May;36(5):1214-1221. doi: 10.1007/s11606-020-06569-5. Epub 2021 Jan 19. PMID: 33469750; PMCID: PMC8131454.
4. Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers. Health Serv Res. 2004 Aug;39(4 Pt 1):1005-26. doi: 10.1111/j.1475-6773.2004.00269.x. PMID: 15230939; PMCID: PMC1361049.
5. Reichheld FF. "The one number you need to grow." Harvard Business Review. 2003;81(12):46-54.
6. Carter J, Hassan S, Walton A, Yu L, Donelan K, Thorndike AN. Effect of Community Health Workers on 30-Day Hospital Readmissions in an Accountable Care Organization Population: A Randomized Clinical Trial. JAMA Netw Open. 2021 May 3;4(5):e2110936. doi: 10.1001/jamanetworkopen.2021.10936. PMID: 34014324; PMCID: PMC8138690.
7. Agency for Healthcare Research and Quality, 2009. "Outcomes of Community Health Worker Interventions" . https://www.ahrq.gov/downloads/pub/evidence/pdf/comhealthwork/comhwork.pdf
8. Kangovi S, Mitra N, Norton L, Harte R, Zhao X, Carter T, Grande D, Long JA. Effect of Community Health Worker Support on Clinical Outcomes of Low-Income Patients Across Primary Care Facilities: A Randomized Clinical Trial. JAMA Intern Med. 2018 Dec 1;178(12):1635-1643. doi: 10.1001/jamainternmed.2018.4630. PMID: 30422224; PMCID: PMC6469661.
9. https://hdsbpc.cdc.gov/s/article/Evidence-of-Impact-for-Community-Health-Workers
10. Kangovi S, Mitra N, Grande D, White ML, McCollum S, Sellman J, Shannon RP, Long JA. Patient-centered community health worker intervention to improve posthospital outcomes: a randomized clinical trial. JAMA Intern Med. 2014 Apr;174(4):535-43. doi: 10.1001/jamainternmed.2013.14327. PMID: 24515422.
11. https://www.pennmedicine.org/news/news-releases/2018/october/community-health-workers-can-reduce-hospitalizations-by-65-percent-and-double-patient-satisfaction
12. Kangovi S, Mitra N, Grande D, Huo H, Smith RA, Long JA. Community Health Worker Support for Disadvantaged Patients With Multiple Chronic Diseases: A Randomized Clinical Trial. Am J Public Health. 2017 Oct;107(10):1660-1667. doi: 10.2105/AJPH.2017.303985. Epub 2017 Aug 17. PMID: 28817334; PMCID: PMC5607679.
13. Rochlin DH, Lee CM, Scheuter C, Milstein A, Kaplan RM. Economic Benefit of "Modern" Nonemergency Medical Transportation That Utilizes Digital Transportation Networks. Am J Public Health. 2019 Mar;109(3):472-474. doi: 10.2105/AJPH.2018.304857. Epub 2019 Jan 24. PMID: 30676791; PMCID: PMC6366524.
14. Bond WF, Kim M, Franciskovich CM, Weinberg JE, Svendsen JD, Fehr LS, Funk A, Sawicki R, Asche CV. Advance Care Planning in an Accountable Care Organization Is Associated with Increased Advanced Directive Documentation and Decreased Costs. J Palliat Med. 2018 Apr;21(4):489-502. doi: 10.1089/jpm.2017.0566. Epub 2017 Dec 5. PMID: 29206564; PMCID: PMC5867515.
15. Ahn S, Smith ML, Altpeter M, Post L, Ory MG. Healthcare cost savings estimator tool for chronic disease self-management program: a new tool for program administrators and decision makers. Front Public Health. 2015 Apr 27;3:42. doi: 10.3389/fpubh.2015.00042. PMID: 25964946; PMCID: PMC4410329.
16. Cutler RL, Fernandez-Llimos F, Frommer M, Benrimoj C, Garcia-Cardenas V. Economic impact of medication non-adherence by disease groups: a systematic review. BMJ Open. 2018 Jan 21;8(1):e016982. doi: 10.1136/bmjopen-2017-016982. PMID: 29358417; PMCID: PMC5780689.
17. https://hcup-us.ahrq.gov/reports/statbriefs/sb311-ED-visit-costs-2021.pdf
18. https://health.hawaii.gov/shpda/files/2019/11/Table-20-Acute-Care-daily-Room-Rates.pdf
19. https://www.thirddoorcoalition.org/research-and-sources
20. https://www.techtarget.com/patientengagement/news/366584694/Food-Insecurity-SDOH-Costs-25K-in-Family-Healthcare-Expenditures