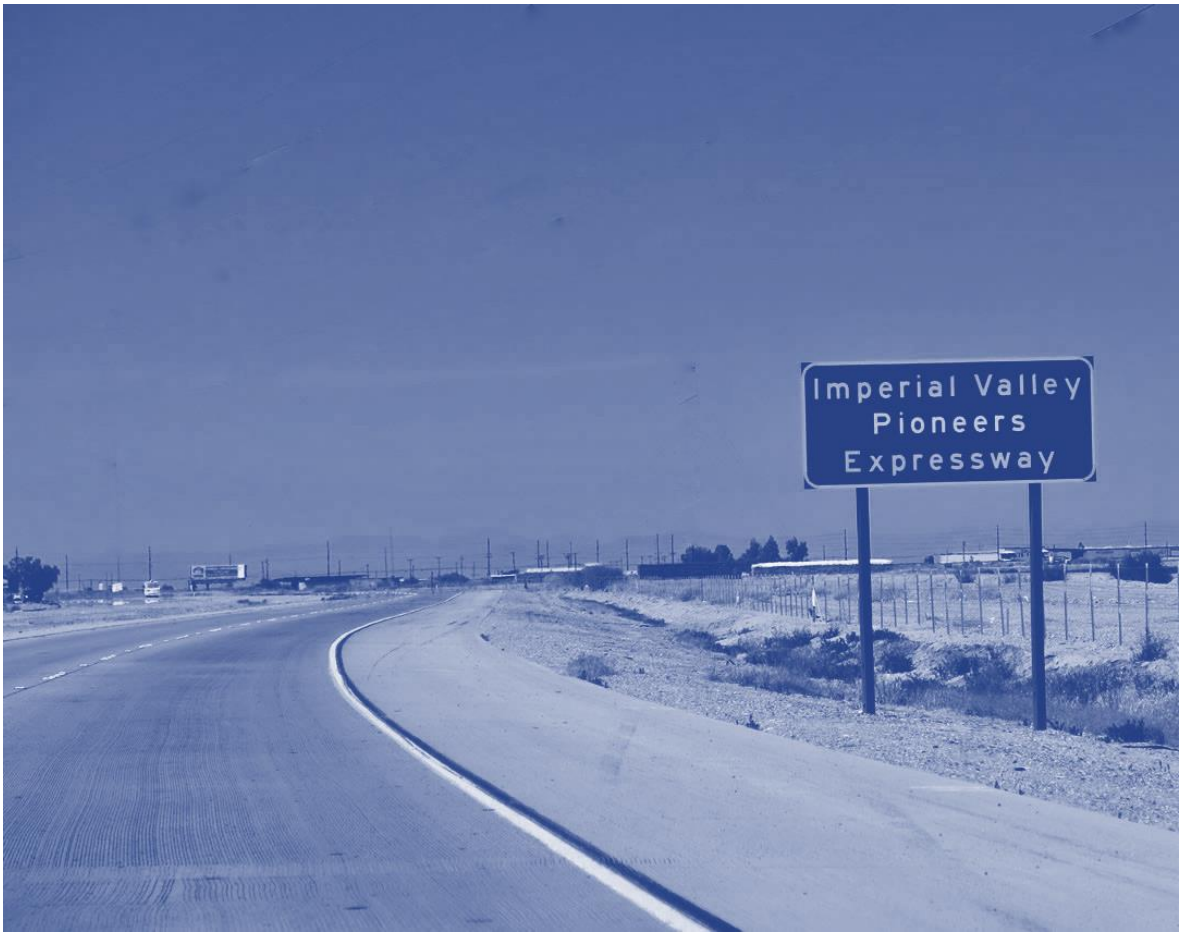
ROADMAP FOR FINANCING IN-HOME ASTHMA CARE IN IMPERIAL COUNTY, CALIFORNIA

December 2016



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EXECUTIVE SUMMARY

The severity and burden of asthma in Imperial County (County) is much higher than the California average, and is of major concern to County residents, government agencies, public health officials, insurers, environmental justice advocates, physicians, and other care providers. To address the problem, Imperial County in-home asthma educators have been providing vital support to residents, especially in low-income communities. However, even though in-home education is a proven method to address asthma, Imperial County organizations that provide this service struggle against unpredictable funding that requires continuous grant applications. In response, Environmental Finance Center West (EFCWest) was tasked with investigating long term financing of in-home asthma services in Imperial County.

From January to May 2016, EFCWest conducted interviews with experts on asthma programs and with asthma stakeholders from public health, non-profit, health insurance sectors, and local stakeholders. The interviews and associated research determined that the most sustainable method to fund in-home asthma services is to obtain reimbursement for these services from insurance companies. As health plan providers in the United States are pressed to become more cost-effective, insurers that serve low-income populations are incentivized to adopt successful programs that provide a positive return on investment, such as in-home asthma education.

EFCWest identified two programs that achieved reimbursement—Alameda Asthma Start and West Michigan Asthma Coalition. Although both programs are more urban than Imperial County, they are relevant because they have successfully financed programs that serve low-income populations. EFCWest developed a roadmap for achieving reimbursement in Imperial County after examining the best practices of these two programs and other successful programs, along with the County's unique attributes and resources.

The roadmap to reimbursement includes the following six elements that should be phased in through 2018:

- Building a coalition,
- Defining standards of care,
- Implementing data collection and data systems,
- Providing clinician training and recruitment,
- Developing forms and educational materials, and
- Establishing triggers for continuous improvement and innovation.

Imperial County has already initiated several elements of the roadmap, especially in the areas of coalition building and fundraising. In 2014, a County ordinance established a Local Health Agency (LHA), whose commission includes California Health and Wellness and Molina

Healthcare — the two Medi-Cal Managed Care plans in the County. Since its inception, the LHA, led by the County Public Health Department, and its very active commission have forged a broad community coalition. In 2016, the LHA: 1) formed and capitalized a Wellness Fund, 2) was awarded a highly coveted and sizable grant from Accountable Communities for Health (ACH) and 3) was accepted to the Leadership Academy for Public Health.

The ACH grant money and training that accompany it will help the County develop programs and systems to reduce the burden of asthma in the County. The roadmap shared in this report can serve as a path to establish the requisite standards of care, data collection, and data systems so that healthcare providers can be confident that appropriate care is delivered. While the roadmap was developed in the specific context of Imperial County, it may also serve as a guiding document of other communities seeking reimbursement for in-home asthma education or other preventative health services. Reimbursement will not fund the services entirely; however, it can fund a substantial portion, allowing asthma service providers and community healthcare workers to focus on improving the level of health and raising the quality of life of residents of Imperial County.

TERMINOLOGY

Accountable Communities for Health model – A public health model currently tested by a Centers for Medicare and Medicaid Services initiative and several states (California, Vermont, Washington and Minnesota).

Burden of disease – Burden of disease is expressed as both the financial and health impact of a disease on a community.

California Accountable Communities for Health Initiative – The California initiative that deploys the Accountable Communities for Health Model. In 2016, this state initiative deployed grants to local communities including Imperial County.

Capitation – A system of reimbursement for medical services wherein the provider is paid an annual fee per covered patient by an insurer. The aggregate fees collected by the insurer are intended to reimburse for all provided services.[1]

Continuity of care – Refers to the quality of care received by a patient over time. It is a process by which a patient and his/her physician-lead care team collaborate through ongoing health care management toward the shared goal of high quality, cost-effective medical care.[2]

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[1] The Free Dictionary. Available from: http://medical-dictionary.thefreedictionary.com/capitation

Covered lives – The number of people (and their dependents) enrolled in a particular health insurance program.[3]

Fee-for-Service – A payment system in which care providers, including physicians and hospitals, are paid for each service provided.[4]

Healthcare Data and Information Set (HEDIS) – A tool used by nearly all US health plans to measure performance of care and services. There are five domains and 81 measurements within those domains.[5]

Pay for Success (PFS) – An innovative contracting model that drives government resources toward high-performing social programs. PFS contracts track the effectiveness of programs over time to ensure that funding is directed toward programs that succeed in measurably improving the lives of people most in need.[6]

Prevalence – The incidence of disease in relation to the population.

Quality measures – Tools that measure or quantify healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems. The purpose of the measures is to demonstrate the delivery of high-quality health care and/or that relate to one or more quality goals for health care.[7]

Return on investment – A performance measure used to evaluate the return of an investment in relation to its cost. To calculate ROI, divide the return by the cost of the investment to obtain a percentage or ratio.

Scope of practice – Describes the activities and services that a healthcare practitioner is permitted to undertake within the terms of their professional license. The scope of practice is limited to that which the law allows for specific education and experience, and specific demonstrated competency. States or other jurisdictions impose laws, licensing bodies, and

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[2] Continuity of Care, Definition of. American Association of Family Physicians. Available from: http://www.aafp.org/about/policies/all/definition-care.html

[3] Covered Lives. The Free Dictionary. Available from: http://medical-dictionary.thefreedictionary.com/covered+lives

[4] Fee-for-Service. Medicaid.gov. Available from: https://www.medicaid.gov/medicaid-chip-program-information/by-topics/delivery-systems/fee-for-service.html

[5] What is HEDIS? NCQA. Accessed October 15 2016. Available from: http://www.ncqa.org/hedis-quality-measurement/what-is-hedis

[6] How Pay for Success Works. Third Sector Capital. Available from: http://www.thirdsectorcap.org/what-is-pay-for-success/

[7] Quality Measures. Centers for Medicare and Medicaid Services. Available from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/index.html?redirect=/QualityMeasures/

regulations that describe education and training requirements, which inform and define scope of practice.[8]

Standard of care – The rules, actions, or conditions that direct patient care. Standards of care guide practice and can be used to evaluate performance. As a legal term, standard of care refers to the duty of the health care provider to act as a reasonable person in the same circumstances would act.[9]

Triple Aim – As defined by the Institute for Healthcare Improvement, Triple Aim is the simultaneous pursuit of better care for individuals, better health for populations, and lower cost.[10]

Value-based programs/models – In value-based programs, health care providers receive incentive payments as reward for the quality of care they deliver to their patients. These programs also support the three pillars of Triple Aim.

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[8] Scope of Practice. Wikipedia. Revised 16 October 2016. Accessed 7 November 2016. Available from: https://en.wikipedia.org/wiki/Scope_of_practice

[9] Standard of Care. The Freed Dictionary. Available from: http://medical-dictionary.thefreedictionary.com/standard+of+care

[10] What are value-based programs? Centers for Medicare and Medicaid Services. Available from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html

PROJECT OVERVIEW

According to Centers for Disease Control and Prevention (CDC) data from 2014, 8.6% of children and 7.4% of adults have asthma.[11] Ethnic minorities and low-income populations, compared to the general population, have more emergency department visits, hospitalizations, and deaths due to asthma.[12] According to the CDC's Asthma fact sheet, asthma costs $56 billion dollars each year in the United States.[13] However, financing in-home asthma care is a challenge across the United States, as providers of this type of care labor to access a steady and sustainable source of funding. Some communities are able to braid together multiple financing resources such as grants, taxes, and health plan provider reimbursement, but most communities struggle to achieve financing that assures program and care continuity. Imperial County, California (County) is a case in point. With a high asthma burden, numerous environmental issues, and few financial resources, it has attracted piece-meal financing for in-home asthma services but ongoing funding remains a challenge.

A large body of evidence has demonstrated that home visiting programs that address indoor environmental triggers of asthma can improve asthma control, reduce asthma-related hospitalizations and emergency department visits, and provide a positive return on investment, saving $5-$14 per dollar spent.[14] These conclusions are based on work conducted by the Community Preventive Services Task Force (the Task Force), appointed by the CDC. The Task Force is an independent panel of public health and disease prevention experts that uses evidence-based findings and recommendations about community preventive services, programs,

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[11] National Current Asthma Prevalence, 2014. Centers for Disease Control and Prevention. Datasource: 2014 National Health Interview Survey (NHIS) Data. Site last updated April 2016. Available from: http://www.cdc.gov/asthma/most_recent_data.htm.

[12] Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities. President's Task Force on Environmental Health Risks and Safety Risks to Children. May 2012. Available from: https://www.epa.gov/sites/production/files/2014-08/documents/federal_asthma_disparities_action_plan.pdf

[13] Asthma's Impact on the Nation: Data from the CDC National Asthma Control Program. Available from: http://www.cdc.gov/asthma/impacts_nation/asthmafactsheet.pdf.

[14] Case Studies in Healthcare Financing of Healthy Homes Services: Medicaid Reimbursement for Home-Based Asthma Services in California. Milken Institute for Public Health, George Washington University. Referencing original source: Nurmagambetov, T. A., et al. (2011). Economic value of home-based, multi-trigger, multicomponent interventions with an environmental focus for reducing asthma morbidity: A Community Guide systematic review. American Journal of Preventative Medicine, 41(2S1), S33-S47. Available from: http://www.thecommunityguide.org/asthma/supportingmaterials/Asthma Econ.pdf

and policies to improve health.[15] The Task Force recommends multi-trigger, multicomponent interventions for children and adolescents that focus on the home environment. Task Force recommendations are based on strong evidence that the proposed interventions reduce symptom days, improve quality of life or symptom scores, and reduce the number of school days missed. In addition, the Task Force states, "the combination of minor to moderate environmental remediation with an educational component provides good value for the money invested based on improvement in symptom free days and savings from averted costs of asthma care and improvement in productivity."[16]

FINANCING IN-HOME ASTHMA CARE IN IMPERIAL COUNTY

IMPERIAL COUNTY DEMOGRAPHICS AND ASTHMA

While the prevalence of asthma in Imperial County is not significantly different from California on average, the severity and burden of the disease in this county is much higher than the California average, and is of major concern to Imperial County residents, government agencies, public health officials, insurers, environmental justice advocates, physicians, and other health care providers. Emergency room visits and hospitalizations are common measures for assessing the degree to which chronic disease, including asthma, is managed.

When comparing 2014 Imperial County to California data on asthma emergency department (ED) visits and hospitalizations, Imperial County falls short. Figure 1 below shows the reported number of ED visits for children 5 to 17 years old in 2014 was 85% higher than the average for the same age group throughout California. Similar results can be seen for those 65 and older.[17] For all ages, the number of ED visits was 38% higher than the average for California. Similar trends can be seen in hospitalizations for children 5 to 17 years, with the rate of hospitalizations 52% greater in the County than California's average.

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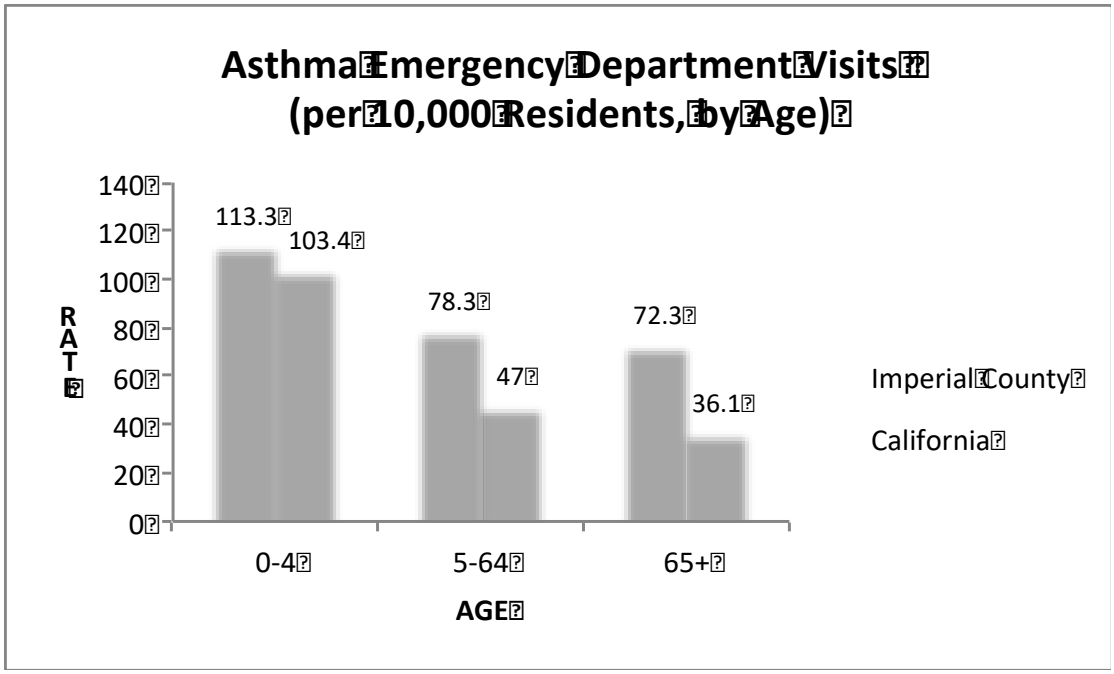
[15] Community Preventative Task Force Members. The Community Guide. Available from: https://www.thecommunityguide.org/task-force/community-preventive-services-task-force-members.

[16] Community Preventative Task Force. Asthma Control: Home-Based Multi-Trigger, Multicomponent Environmental Interventions." The Community Guide. Web. 11 July 2016. https://www.thecommunityguide.org/findings/asthma-home-based-multi-trigger-multicomponent-environmental-interventions-children-and.

[17] Office of Statewide Health Planning and Development, 2014. California Breathing. Available from: http://www.californiabreathing.org/asthma-data/county-asthma-profiles/imperial-county-asthma-profile - activeasthma.

Figure 1: Asthma Emergency Department Visits



According to California Breathing's County Asthma Profile for Imperial County (Figure 2), Medi-Cal is expected to pay for 57.8% of the asthma hospitalizations in the County, as opposed to 46.5% for California overall. With approximately 85% of Medi-Cal now under private insurers through managed Medical plans, there is a strong and growing impetus for Medi-Cal Managed Care plans to reduce the asthma burden in the County.

Figure 2: Income Sources of Asthma Hospitalizations for Imperial County[18]

Expected Source of Payment for Asthma Hospitalizations		
Payment Source	**Imperial County**	**California**
Medicare	19.88%	28.24%
Medi-Cal	57.83%	46.46%
Private	18.67%	20.34%
Other	3.61%	4.96%

datasource: Office of Statewide Health Planning and Development (OSHPD), 2014

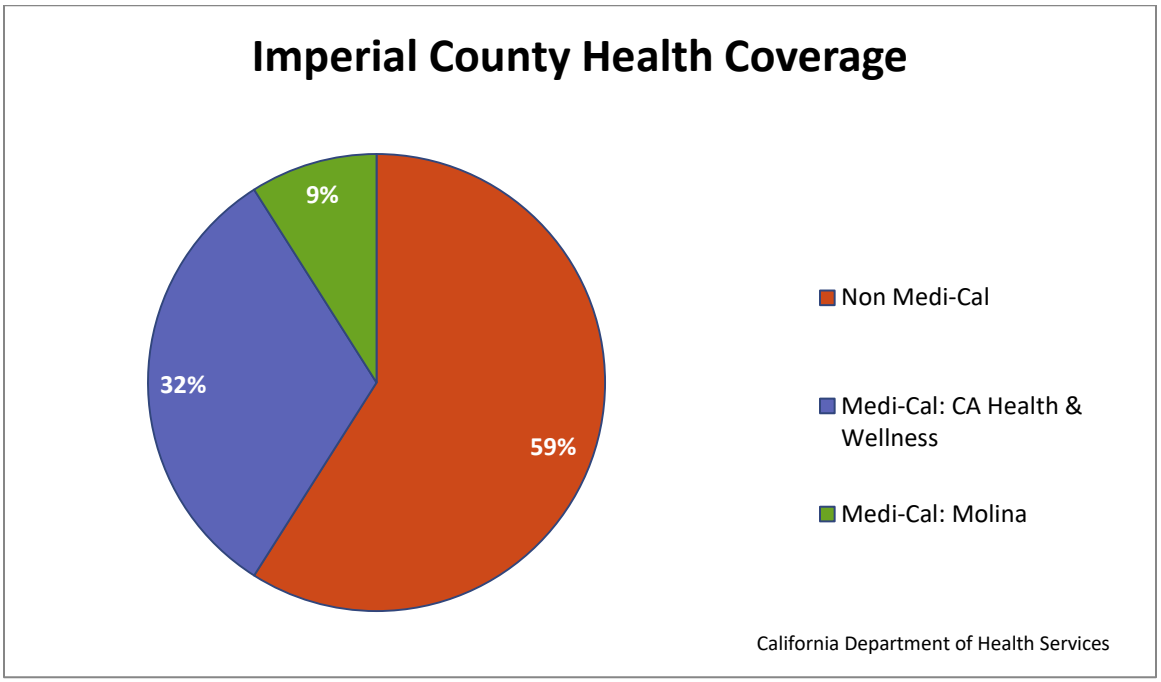
MEDI-CAL MANAGED CARE IN IMPERIAL COUNTY

At one time, all California Medicaid, known as Medi-Cal, followed a Fee-for-Service model. However, in the late 90's, California began to lead the country with a new model of health system called Health Maintenance Organization (HMO). Over the last 20+ years, the HMO model gained greater favor as a method to control escalating healthcare costs. The increasing attractiveness of the HMO was a significant driver in the shift in Medi-Cal from Fee-for-Service to Medi-Cal Managed Care (also known as managed Medi-Cal).

The extremely high rate of Medi-Cal participants in Imperial County, together with the growing number of managed Medi-Cal lives, demonstrates the significant impact this shift has on Imperial County. Figure 2 shows that the percentage of Imperial County residents covered by Medi-Cal (both Fee-for-Service and managed Medi-Cal) in 2014 was 57.8%. As shown in Figure 3, according to August 2016 data from the California Department of Health Services, there are 74,506 lives covered by Medi-Cal Managed Care in Imperial County, or approximately 41% of the County's total population. Of these Medi-Cal Managed Care lives, 58,513 are enrolled (78.5%) in California Health and Wellness plans, and 15,994 (21.5%) are enrolled in Molina plans.

[18] Imperial County Asthma Profiles. California Breathing. Data Source: Statewide Health Planning and Development (OSHPD), 2014. Available from: http://www.californiabreathing.org/asthma-data/county-asthma-profiles/imperial-county-asthma-profile

Figure 3: Imperial County Health Coverage



As discussed above, there has been a tremendous shift from Fee-for-Service to new managed care models for Medicaid, considered value-based approaches. In Fee-for-Service, care providers were paid for each service rendered. Within the value-based approaches, there are several different models, including pay-for-performance, bundled payments and capitation.[19] In value-based approaches, care providers are incentivized to keep patients healthy because payments for

VALUE-BASED APPROACHES

Value-based programs incentivize quality care by rewarding health care providers with incentive payments for the quality, not quantity, of care they provide their patients. These programs also support the three pillars of Triple Aim: better care for individuals, better health for populations and lower cost.[20]

~Centers for Medicare and Medicaid Services

[19] Understanding the value-based reimbursement model landscape. RevCycle Intelligence. Available from: http://revcycleintelligence.com/features/understanding-the-value-based-reimbursement-model-landscape

their services are *not* based on number or volume of services performed.[20]

In May 2015, the Centers for Medicare and Medicaid Services (CMS) proposed a rule to modernize Medicaid services, inviting states to pilot innovative care delivery and payment systems. As a result, California now offers six Medi-Cal Managed Care programs that include variations of value-based approaches and other innovative care and payment models. While principles of quality care, cost reduction, and population health are consistent foundations to all of these Medi-Cal Managed Care models, they are still varied and fluid.

As the shift towards value-based models increases, enrollment in Medi-Cal Fee-for-Service continues to shrink and Medi-Cal Managed Care plans assume a greater role in determining how patient care is delivered. Collectively, these trends are changing the way we deliver care. The Affordable Care Act's (ACA) mandates to improve quality of care, reduce costs, and take a more proactive role in community health also contribute to the shift. Hospitals, health insurers, and accountable care organizations are paying closer attention to preventative care that keeps patients healthy and avoids medical interventions, including using care providers other than physicians when feasible. Under this paradigm, Medi-Cal Managed Care plans exert significant influence over preventative care. This is the primary reason that reimbursement from insurance companies is defined as a significant priority for a sustainable funding mechanism for the provision of in-home asthma services in Imperial County.

COMMUNITY HEALTH WORKERS IN IMPERIAL COUNTY

The Minnesota Community Health Workers Alliance defined community health workers (CHWs) as "trusted, knowledgeable frontline health personnel who typically come from the communities they serve."[21] CHWs have many different titles including health advocates, health advisors, promotores, health educators and others. They perform services such as: interpretation and translation, culturally appropriate health education and information, and other assistance with obtaining needed care.[22] CHWs are currently utilized in many communities around the United States. Two factors have elevated the importance and roles of CHWs in Imperial County. First, the proximity to the US-Mexico border has led to a large Spanish-

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[20] Value-based programs. Centers for Medicare and Medicaid Services. Available from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html

[21] Definition. Minnesota Community Health Workers Alliance. Available from: http://mnchwalliance.org/who-are-chws/definition/

[22] Who are community health workers? Rural Health Info. Available from: https://www.ruralhealthinfo.org/community-health/community-health-workers/1/chws

speaking population impacting how people access medical care; and second, there is a longstanding shortage of physicians and specialists in Imperial County.

Proximity to the US-Mexico border influences healthcare access in Imperial County, where 80.4% of the population identify as Hispanic,[23] and 72.7% of the population speak Spanish at home.[24] According to EFCWest interviews with Imperial County CHWs and health professionals, many residents are not enrolled in health care services in the County, and/or seek health care in Mexico. No official data is available on how many people seek services in Mexico, or the degree to which Mexican healthcare services are utilized, i.e. in combination with health care in the United States.

The Health Resources and Services Administration under the U.S. Department of Health and Human Services has designated Imperial County as Health Professional Shortage Area.[25] In 2015, Imperial County's Local Health Authority (LHA) conducted a survey to assess health care priorities and determined that recruitment of primary care physicians and specialists in service of low income residents was a top priority.[26] While the community has endeavored to attract physicians, nurses and other clinicians, it continues to lack adequate health care staff, especially those who speak Spanish and understand the local culture. Particularly relevant to asthma-related care, there are no local pulmonologists or allergists.

FINANCING CHALLENGES

As the burden of asthma in Imperial County became more apparent, local organizations such as Imperial Valley Child Asthma Program and Comité Cívico del Valle stepped up and expanded their efforts to provide in-home services with Spanish speaking CHWs. However, these and other organizations in Imperial County that provide in-home asthma services to underserved residents face long-standing challenges with financing their services. The continuous, ongoing resources required to seek and apply for grants is especially taxing on small, financially constrained organizations. The uncertainty of future funding creates formidable obstacles to

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[23] Imperial County. City Data. Updated: 1 September 2016. Available from: http://www.city-data.com/county/Imperial_County-CA.html

[24] Languages in Imperial County, California. Statistics Atlas. Updated: April 17 2015. Accessed 1 September 2016. Available from: http://statisticalatlas.com/county/California/Imperial-County/Languages

[25] Shortage Designation: Health Professional Shortage Areas & Medically Underserved Areas/Populations. U.S. Department of Health and Human Services Health Resources and Services Administrations. http://www.hrsa.gov/shortage/

[26] Imperial Local Health Authority. Priorities Survey Results. 20 March 2015.

continuous staffing, organizational planning, and delivering ongoing and comprehensive services to their constituency. Unpredictable funding also impacts continuity of care.

Continuity of care is an essential element of high quality healthcare, and is even more important for an at-risk population such as children with asthma. Mounting evidence demonstrates that continuity of care prevents hospitalizations[27] and reduces healthcare costs for patients with chronic medical conditions[28]. While studies have focused on continuity of care with physicians, Imperial County's physician shortage and history with using CHWs for in-home asthma services introduces a unique, local attribute into the equation.

SUSTAINABLE FUNDING

According to the National Center for Healthy Housing and Milken Institute School of Public Health, "Medicaid-supported coverage of home-based asthma services exists in California, but is limited in scale." A wide variety of mechanisms are used to fund home-based asthma services in California, and in many cases a single program or initiative may rely on multiple funding sources. Funding sources in California include grants from the state or private foundations, hospital community benefit initiatives, social impact financing, and state funding from tobacco tax revenues and a 2005 settlement with BP.[29]

In healthcare, reimbursement is the payment an insurer provides to a physician or other clinician for their services. Reimbursement by insurers is a major driver in services and interventions because it ensures care providers will be paid for their services. Asthma educators are becoming more accepted and welcomed as part of the effort to improve asthmatic patients' outcomes. They are regarded similarly as diabetes educators, who are recognized for their vital role in achieving better glucose control with diabetic patients over the last fifteen years. Currently, asthma educators face the same challenge diabetes educators faced more than a decade ago: with a few exceptions, asthma educators today are not reimbursed for their services. Still, mounting evidence across the United States shows the effectiveness of asthma education, including programs offering in-home services.

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[27] Gill and Mainous. The Role of Provider Continuity in Preventing Hospitalizations. Archives of Family Medicine. Vol 7: 4. November 1998. http://triggered.stanford.clockss.org/ServeContent?rft_id=info:doi/10.1001/archfami.7.4.352

[28] Hussey et al. JAMA Internal Medicine. Continuity and the costs of care for chronic disease. 2014. 174(5):742-748. http://archinte.jamanetwork.com/article.aspx?articleid=1835350

[29] National Center for Healthy Housing and Milken Institute School of Public Health. (2014). Healthcare financing of healthy homes: Findings from a 2014 nationwide survey of state reimbursement policies. Available from: http://www.nchh.org/Resources/HealthcareFinancing/ Snapshot.aspx

Obtaining reimbursement from an insurer requires that a provider establish a relationship and enter into a contract. For example, in the case of a private medical practice, the physician would contact the insurer and provide documentation demonstrating competency and qualifications for the proposed services. Required documentation includes medical license and board certifications for all physicians and other documentation for the practice, such as liability and worker's compensation insurance. For clinicians, contracting with insurers is impacted by their scope of practice, which defines what services clinicians can provide and under what degree of supervision. When non-physician providers deliver care, for example, nurse practitioners or physician assistants, then a scope of practice is established and must be compliant with state law. Currently, there are no state or national standards for scope of practice for in-home asthma services or the practitioners that deliver them.

Insurers are accepting risk when they enter into contract and provide reimbursement for services. To mitigate that risk and develop confidence in new care providers, care providers need to develop and adhere to scope of practice and standards of care. The programs described in this report that receive reimbursement have collaborated with insurers to develop protocols, standards of care, and scope of practice so that insurers have confidence in the quality of care delivered.

Interviews and research conducted by EFCWest offered several examples of how insurance companies reimburse in-home asthma services delivered by a qualified professional. For example, the West Michigan Asthma Coalition (West Michigan) is currently contracted with five insurers to receive reimbursement for certified asthma educators to visit homes, conduct asthma assessments, implement asthma plans and monitor asthma control. Similarly, the Asthma Start program in Alameda County (Asthma Start), California receives reimbursement for in-home asthma services from the Alameda Alliance for Health, the primary Medi-Cal Managed Care plan in that community.

PROJECT DESCRIPTION AND METHODOLOGY

EFCWEST AND EPA PARTNERSHIP

The U.S. Environmental Protection Agency (EPA) asked EFCWest to help asthma organizations in Imperial County develop long-term sustainable financing strategies for organizations that provide in-home care. EFCWest is a member of the Environmental Finance Center Network, which is comprised of university and nonprofit centers throughout the United States. Housed in the Barowsky School of Business at Dominican University of California, EFCWest works to encourage industry to implement sustainable and financially sound business practices and to help communities and government promote sustainable approaches.

INFORMAL INTERVIEWS

EFCWest and EPA, under a cooperative agreement, developed a strategy to conduct informal interviews and discussions with multiple stakeholders throughout Imperial County, the state of California, and across the United States. The purpose of this agreement was to assess the potential for financial sustainability, primarily through interviews. A list of interviewees is included in Appendix A. Interview participants included direct asthma service providers (e.g., the Imperial Valley Child Asthma Program), asthma technical support organizations and agencies (e.g., Imperial County Public Health Department), and asthma funders (e.g., Imperial County Children and Families First Commission). EFCWest developed interview questions with significant input from EPA.

Over 30 informal interviews were conducted and another round of post-workshop interviews were conducted with five of the initial interviewees and one new contact. Throughout the interviews and project, questions were customized to the specific interviewee. Subsequent to the informal interview process, EFCWest and EPA hosted *Beyond Grants: Imperial County Asthma Finance Workshop* (the Workshop) on June 6th, 2016.

WORKSHOP

The Workshop provided an opportunity to bring critical stakeholders together to gain a better understanding of how they could work together toward implementing a long-term asthma financing strategy, especially for in-home care. The workshop began with the premise that reimbursement from health care plan providers is the best opportunity for sustainable funding. The objectives of the workshop were three-fold:

1. Develop an analysis that identified critical strengths and weaknesses in existing services,
2. Prioritize financing gaps based on need and existing and future resources, and

3. Identify next steps.

Participants represented Imperial County and non-Imperial County asthma-focused nonprofits and health care professionals; County and city officials; County, State and federal agencies; a health plan provider, and an academic institution. The attendees were as follows:

- Lorene Alba, California Department of Public Health
- Esther Bejarano, Comité Cívico del Valle
- Joel Ervice, Regional Asthma Management and Prevention (RAMP)
- Helina Hoyt, San Diego State University, Imperial Valley Campus
- Leticia Ibarra, Clínicas de Salud del Pueblo
- Ashley Kissinger, Esperanza Community Housing
- Kathleen Lang, CA Health and Wellness
- Aide Munguia-Fulton, Imperial Valley Child Asthma Program
- Luis Olmedo, Comité Cívico del Valle
- Christina Olson, Imperial County Public Health Department
- Priyanka Pathak, EPA Region 9
- Brad Poirez, Imperial County Air Pollution Control District
- Collett Vasquez, San Diego State University, Imperial Valley Campus
- Cheryl Viegas-Walker, City of El Centro

The workshop began with an overview of EFCWest research results and analysis of financing in-home asthma care in California and the US. This was followed by three morning presentations:

- *Current Asthma Activities in Imperial County* by Elaine McCarty and Sarah Diefendorf,
- *Community Health and Asthma* by Christina Olson, and
- *HEDIS, Health Plan Benefits and ROI* by Dr. Kathleen Lang.

The day concluded with afternoon activities, which encompassed development, analysis and prioritization of local strengths and weaknesses, as well as next steps.

The workshop provided a day for diverse stakeholders to work together on an issue that has challenged health care providers across the United States. For CHW-based organizations, sustainable in-home asthma care financing has been elusive and complex, often requiring significant time and capacity devoted to cultivating multiple funding sources rather than responding to the health care needs of their communities.

The workshop included presentations by Imperial County experts about drivers for community health models. Due to the introduction of the ACA and the adoption of quality measures such as Triple Aim and Healthcare Effectiveness Data Information Set (HEDIS), health care plans are equally challenged to reduce costs while offering an improved community health model that provides significant patient care and monitoring beyond the traditional approaches. As a result, CHWs and health plan providers need each other to provide coordinated asthma care that includes better medication management, reductions in environmental asthma triggers, reduced emergency room visits and hospitalizations, cost reduction, and improved quality of life. The box below provides an overview of Triple Aim and the ACA.[30,31] For details of the workshop presentations, including the relationship of Triple Aim, Healthcare Effectiveness Data Information Set (HEDIS) and current asthma activities in Imperial County, see *Beyond Grants:*

TRIPLE AIM AND THE AFFORDABLE CARE ACT[30,31]

The Institute for Healthcare Improvement (IHI) launched Triple Aim in 2008, as an approach that addresses healthcare costs, quality of services, and population health. The ACA, passed in 2010, created mandates that reinforced Triple Aim. The founder of the IHI, Dr. Donald Berwick, became the Administrator for the Centers for Medicare and Medicaid Services in 2010, reinforcing the role Triple Aim played in the ACA. Some aspects of the ACA that drive healthcare reform and asthma prevention and treatment include:

- **MEDICAID/MEDICARE:** Under the ACA, Medicaid eligibility was expanded. As of 2016, 32 of the 50 states have accepted the Medicaid expansion, including California. Medicare also switched from fee for service to bundled payments.
- **MANDATED COVERAGE:** A goal of Triple Aim and the ACA is to reduce the per capita costs of healthcare. By mandating insurance coverage, more people are covered, distributing costs over a larger population. Preventative care is free for the patient, which drives patients towards wellness practices and earlier disease intervention. More covered benefits reduce patient costs and improves the experience and quality of care.
- **ACCOUNTABLE CARE ORGANIZATIONS (ACOs):** The ACA encouraged hospitals to come together with physician groups, primary care physicians, specialists and other care providers to form ACOs. ACOs are jointly responsible for quality and costs of care delivered, and savings are passed on to all providers. Thus, all care providers are incentivized to provide quality over quantity. For example, a physician is motivated to diagnose asthma and treat chronic disease such as asthma so that emergency department visits or hospitalizations are avoided.

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[30] 7 Years in, Triple Aim Transcends Jargon. June 22 2015. Available from: http://www.healthleadersmedia.com/health-plans/7-years-triple-aim-transcends-jargon

[31] Wikipedia. Patient Protection and the Affordable Care Act. Available on: 29 November 2016. Available from: https://en.wikipedia.org/wiki/Patient_Protection_and_Affordable_Care_Act

Workshop Summary for Financial In-home Asthma Care in Imperial County.[32]

As the workshop demonstrated, the path to financial sustainability in Imperial County through reimbursement strategies is complex and not always clear. Initial research and interviews as well as the workshop and a lengthy discussion of weaknesses made it clear that there are three critical barriers facing Imperial County stakeholders:

1) lack of data,
2) return on investment (demonstration of), and
3) quality of care.

Lack of Data Required by Health Plans: Health plan providers must be able to obtain critical and consistent patient data from across the healthcare spectrum to demonstrate that they are complying with healthcare standards and legal requirements, such as Health Insurance and Portability Accountability Act (HIPAA) and the National Committee for Quality Assurance (NCQA). In Imperial County, much of this data is either not currently collected, or is collected in inconsistent formats by CHW organizations, hospitals, and clinics. Moreover, providers historically require evidence that a certain practice or intervention provides results in their specific geographic region. While there is a growing amount of national data regarding the efficacy of in-home asthma services, data from other communities are not normally recognized by providers as sufficient at the local level. As a result, there is a need to develop a county-wide data collection infrastructure so that all providers can understand if and how modern standards and requirements are being met.

Return on Investment: Return on Investment (ROI) is a performance measure used to evaluate the usefulness of an investment or to compare the efficiency of a number of different investments. To calculate ROI, the benefit (return) of an investment is divided by the cost of the investment; the result is expressed as a percentage or a ratio.[33] Health plan providers must show that they are making efforts to reduce costs and improve their ROI. While there is national and statewide research that offers evidence that in-home asthma support and education provides a $5-14 return on investment, there is no localized research in the County providing the same conclusion. According to *Case Studies in Healthcare Financing of Healthy Homes Services* from the Milken Institute for Public Health, insurers prefer and may require ROI

[32] *Beyond Grants* can be downloaded at www.efcwest.net.
[33] Return on Investment in Healthcare – ROI. Healthinformatics. Available on: 4 November 20016. Available from: https://healthinformatics.wikispaces.com/Return+on+Investment+in+Healthcare+-+ROI

data on a specific population rather than published data from other communities.[34] Based on interviews with West Michigan, the Alameda Alliance for Health, and health care providers, in order for reimbursement to become an option, ROI at a local, county level must be determined and documented.

Quality of Care: As the workshop participants determined when assessing the County's weaknesses, there is concern over ensuring the quality and standardization of in-home care provided by CHWs. Health plan providers need to understand exactly what information is provided to patients and that no lines are crossed between environmental and medical education, i.e. follow an agreed upon scope of practice. In response, ongoing standardized training for all in-home asthma workers should be provided. One immediate remedy may be found in the asthma certificate courses currently offered by CDPH. However, the curriculum has not yet been reviewed by the two Imperial County health plan providers, California Health and Wellness and Molina, who will need assurances that any in-home training complies with the national and statewide standards that oversee and rank patient care.

WORKSHOP NEXT STEPS

The workshop was an important step towards identifying strengths and weakness and bringing critical stakeholders to the table. The greatest strength within the County is clearly a committed and engaged community that is dedicated to reducing the impact of asthma.

The immediate next steps were to further explore asthma financing in those communities that have already been identified as successful in accessing reimbursements. Researchers for this report needed to gain a better understanding of what and how data should be collected and what assurances health plan providers need in order to work with CHWs. In addition, further analysis looked at how cost reduction and ROI has been demonstrated and achieved at the community level.

This additional research was critical to developing a roadmap for the County's providers to pursue reimbursements as a viable strategy towards sustainable asthma financing.

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[34] Mary Beth Malcarney, et al. *Case Studies in Healthcare Financing of Healthy Homes Services.* Milken Institute for Public Health, George Washington University. September 2016. Available from: http://www.nchh.org/Portals/0/Contents/Case-Studies-in-Healthcare-Financing-of-Healthy-Homes-Services_Summary.pdf

FURTHER RESEARCH CONDUCTED

After the workshop, additional interviews were conducted to more deeply understand the path to reimbursement and the structure of CHW programs that receive reimbursement, as well as to learn about progress and activities in Imperial County since the workshop. Most importantly, the follow up interviews included an in-depth assessment of West Michigan and Asthma Start, as well as others.

West Michigan uses certified nurse educators (CNE) for their in-home asthma services. CHWs sometimes accompany CNEs on visits to assist with tracking down and/or locating families and talking about community resources. Asthma Start deploys licensed social workers (LSWs) for asthma education, conducting assessments, and discussing triggers and medication. Asthma Start utilizes CHWs for similar purposes as West Michigan, i.e. to help arrange rides for patients, to help track down patients, and to work on the social determinants of health. The Asthma Start program utilizes the US Department of Housing and Urban Development's Healthy Homes program and associated funding to address environmental triggers. In Alameda, workers from a different agency and under separate funding conduct home visits for environmental triggers. However, it is done with close collaboration and coordination with the Public Health Department to compile patient information, track visits, share information and follow a clear scope.

OVERALL STRATEGIES FOR REIMBURSEMENT

While Imperial County possesses unique and important attributes, it is worthwhile to learn from other successful programs that have achieved reimbursement and sustainable financing. While both West Michigan and Asthma Start programs serve more urban/suburban communities with larger populations, they are excellent examples of programs that have accessed a variety of funding options for in-home asthma services including reimbursement. These organizations capitalized on the resources of the entire community, working together to access larger, more sophisticated funding. This cooperation allowed them to develop the systems needed for reimbursement, while enabling success with supplemental funding. Programs like Asthma Start also intend that efforts for reimbursement pave the way for funding through Pay for Success models (see sidebar, page 23).

As previously mentioned, programs researched for this project that are successfully deploying in-home asthma services depend on a variety of funding sources, of which reimbursement is just one part. Existing programs in Imperial County have been funded on a grant-to-grant basis, hence the goal of this project was to identify and provide a road map for more sustainable funding opportunities. The following initiatives are the most current and relevant funding mechanisms to Imperial County. These programs offer the opportunity to either bridge funding while establishing systems to achieve insurance reimbursement, or may supplement in-home asthma services even once reimbursement is achieved.

HOW PAY FOR SUCCESS (PFS) WORKS

Pay for Success is an innovative contracting model that drives government resources toward high performing social programs. PFS contracts with local government agencies to track the effectiveness of programs over time to ensure that funding is directed towards programs that succeed in measurably improving the lives of people most in need.

- **GOVERNMENT** identifies a critical social issue with historically poor outcomes such as chronic homelessness or early childhood education.
- **PRIVATE FUNDERS** such as foundations, banks and businesses, provide upfront capital to a high-performing social service provider that is helping a specific at-risk target population.
- **SERVICE PROVIDERS** deliver services to key at-risk communities, in an effort to reach or exceed predetermined outcomes for success.
- **EVALUATORS** rigorously measure outcomes to ensure providers achieve impact.
- **GOVERNMENT** repays private funder's initial investments, including interest only if the project is successful in achieving positive outcomes.

- Third Sector Capital Partners[36]

Accountable Communities for Health Initiative: The Accountable Communities for Health (ACH) Initiative is a $157 million pilot program funded at the federal level by the Centers for Medicare and Medicaid Services. California receives $5.1 million of the federal grant as the California Accountable Communities for Health Initiative (CACHI) grant. In July of 2016, Imperial County's Public Health Department announced they were one of six (CACHI) grant recipients. The grant award to Imperial County offers $850,000 over three years to develop innovative approaches to improve community health, with asthma as the focus.[35]

[35] County Health Department to Receive $850,000 from state health initiative. Desert Review. Press Release. July 20, 2016. Available from: http://www.thedesertreview.com/imperial-county-public-health-department-to-receive-up-to-850000-from-the-california-accountable-communities-for-health-initiative-to-implement-innovative-population-health-initiative-in-imperial-co/

Whole Person Care Pilot – In May 2016, The California Department of Health Care Services announced the Whole Person Care Pilot and its ambition to pilot local initiatives that combine physical health, behavioral health and social services to serve high users of health systems that still have poor outcomes.[36] Initial applications for this five-year program were due in July 2016. In October, the California Department of Health Care Services announced another round of application opportunities. If stakeholders in Imperial County develop a collaborative network, they can be poised to apply when the next opportunity arises. This grant seems suited to fund work to establish systems (i.e. database/data collection) and CHW visits when multiple conditions including asthma are involved.

Pay for Success – With Pay for Success (PFS), interventions that have demonstrative effectiveness and a potential return on investment (ROI) are leveraged to attract private funders, so that successful programs can scale and service a greater community.[37] Funders may include banks incentivized through the Community Reinvestment Act and other investors interested in both financial and social returns on investment. PFS requires several steps and the first step, Coalition Building, is captured in this report's roadmap.

In the early stages of this effort, a local government entity determines what health issue is important to their community and what the intervention will be. Data is gathered over time to demonstrate the effectiveness and value of the intervention. This stage requires engagement from all stakeholders—public health, insurers, care providers, hospitals, community, policy-makers, etc. The second step for a community requires the establishment of a Health Impact Fund and contract agreements with investors. ROI for the investors will depend on the success of the program. Efforts that lay the foundation for PFS are currently underway in Alameda County, and Imperial County may consider utilizing PFS in the future as it can help fill the financing gap between reimbursement and real costs for services.[38]

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[36] WPCA Application Webinar. California Department of Health Care Services. May 19, 2016. Available from: http://www.dhcs.ca.gov/services/Documents/WPCApplicationWebinar.pdf
[37] What is Pay for Success? Third Sector Capital Partners. Available from: http://www.thirdsectorcap.org/what-is-pay-for-success
[38] Impact 4 Health. Pay for Success in Healthcare. Available from: http://www.impact4health.com/pay-for-success-in-healthcare/

THE ROADMAP TO REIMBURSEMENT

This section identifies and describes a series of concrete steps that asthma stakeholders in Imperial County can take to achieve sustainable funding for in-home asthma services. These steps are based on informal interviews, findings from the June 6, 2016 *Beyond Grants* workshop, and additional research. EFCWest identified two programs that achieved reimbursement—Alameda Asthma Start and West Michigan Asthma Coalition.

These programs demonstrate that reimbursement provides a consistent and knowable funding tool, while also serving as a continuous reminder to insurance companies of the value of these services. CMS has announced its intention to move to value-based models, which place quality over costs. These types of programs only recently emerged, and are demonstrating success by providing patients the care they want and need within reasonable costs.[39] The ACA and Triple Aim are now directing all healthcare providers towards these value-based models that emphasize costs reduction while improving population health. This is stretching healthcare systems to be creative, as they strive to achieve cost savings without compromising health. Based on the experiences of Asthma Start and West Michigan, achieving reimbursement is the foundation of the roadmap presented in this document because a sizable amount of in-home asthma services can be covered by reimbursement.

With reimbursement as a foundation, EFCWest distilled the best practices of these two programs, weaving in the experiences of other successful programs and the unique attributes and resources of Imperial County to develop the Roadmap to Reimbursement for Imperial County Asthma Service Providers ("Roadmap") that can be phased in through 2018. While this Roadmap was developed specifically for Imperial County, the framework may also be used by other communities seeking to establish sustainable financing for in-home asthma services through reimbursement.

Figure 4 offers an overview of the six elements and timeframe of the Roadmap, while the sections that follow provide more detail on each of these elements. The six elements are:

- Building a coalition,
- Defining standards of care,

[39] What is value-based care? Dartmouth Hitchcock website. Available from: http://www.dartmouth-hitchcock.org/about_dh/what_is_value_based_care.html

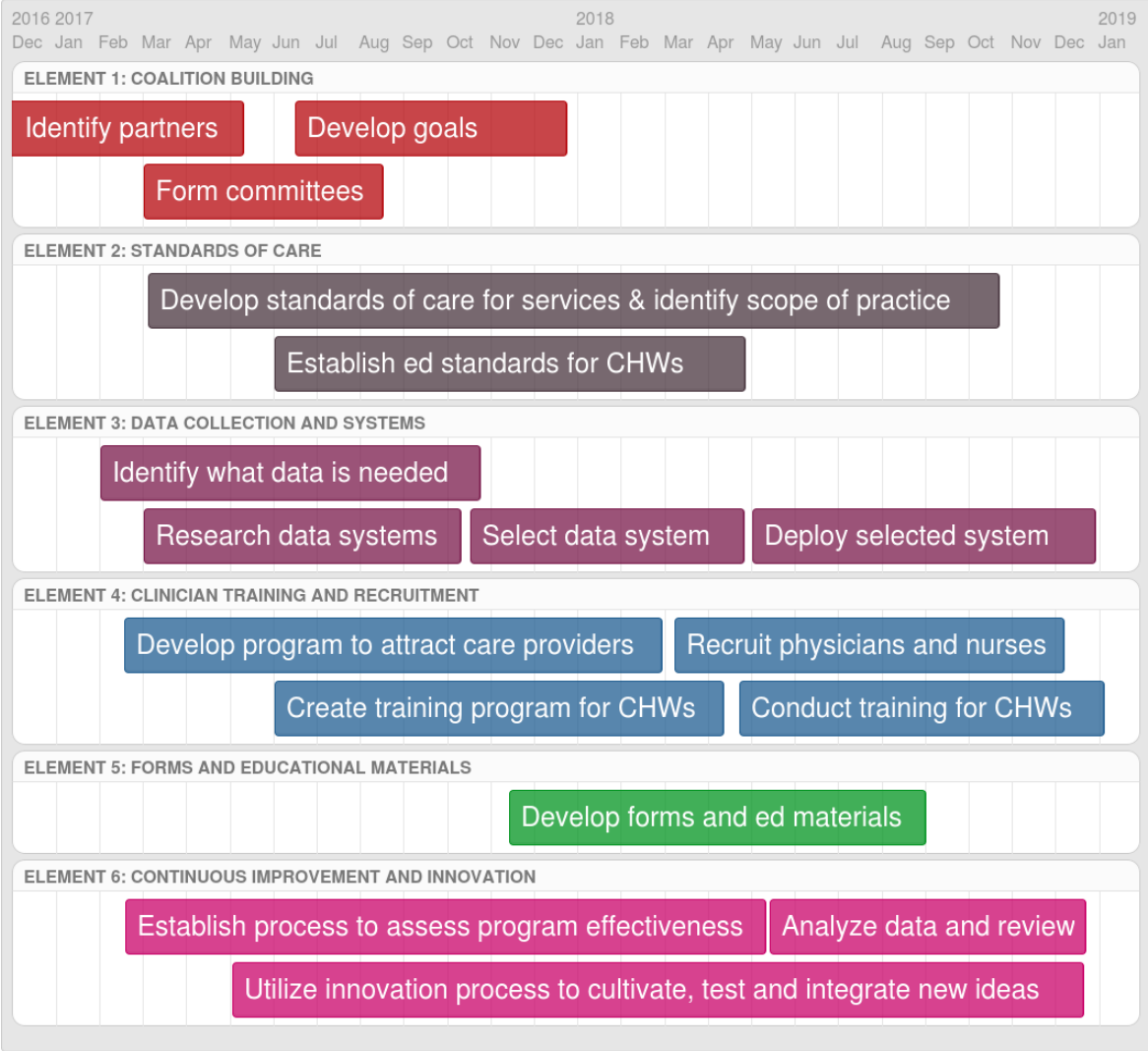
- Implementing data collection and data systems,
- Providing clinician training and recruitment,
- Developing forms and educational materials, and
- Establishing triggers for continuous improvement and innovation.

While this map proposes a period beginning in December 2016 and going through March 2017, it is important to note that many of these proposed steps began as early as 2014 when the County formed the Local Health Authority (LHA) and its Commission. Further collaboration across stakeholder groups will be essential in determining how Imperial County will address the burden of asthma and achieve sustainable funding for the vital services provided by these partners. It should be noted that while each element of the roadmap may call for engaging different individuals or organizations to varying degrees at different steps along the way, we recommend that all stakeholders have the opportunity to engage at all points of the roadmap. We also recommended that all stakeholders engage with the LHA on a regular basis to remain informed and be involved in the final work products of the roadmap.

Given the tremendous collaborative foundation in Imperial County with the work of the LHA over the last two years, many committed asthma stakeholders, leadership from the County's Public Health Department, and the recent award of the $850,000 CACHI grant, Imperial County is already on a fast track to succeed with this Roadmap.

THE ROADMAP OVERVIEW

Figure 4: Roadmap to Reimbursement for Asthma Service Providers in Imperial County



ELEMENT 1: COALITION BUILDING

While Imperial County has already created a strong coalition for community health, it will need to continue to grow this coalition, especially in the area of in-home asthma services.

Addressing a community health problem such as asthma cannot work if organizations work in a silo – it requires a systemic approach that includes stakeholders working together. While these stakeholders may be associated with or employed by different organizations, they need a platform from which they can work towards a single, unifying mission. For example, in support of improving asthma in Imperial County, members of a coalition can:

- support each other's programs, advocate for policy change,
- leverage one another's resources,
- utilize diversity to include all perspectives, and
- engage their community collectively,[40]

Efforts with strong coalitions can achieve far more than a single group working alone.

The County has already made significant strides with coalition building and in recent months has expanded participation within the asthma community, especially in preparation for the CACHI grant. Imperial County's work on building a coalition began with the establishment of the LHA in June 2014 by Ordinance of the County of Imperial's Board of Supervisors, as presented in the Workshop by the Imperial County Public Health Department (Figure 5). Although formed by the County, the LHA is its own legal body, governed by the LHA Commission. From the formation of the LHA, numerous significant collaborations have occurred between the LHA Commission and local stakeholders that resulted in important achievements. The most notable milestones include: the creation of the Community Health Assessment and Community Health Improvement Plan (CHA-CHIP) and the award of the CACHI grant.

Community Health Assessments, the "CHA" in CHA-CHIP, are conducted by local health departments to collect information for problem identification, resource allocation, policy development, program implementation and assessment.[41] The Community Health Improvement Plan, the "CHIP" in CHA-CHIP, is the plan a local government develops to improve its community health, using the CHA. In other words, CHA-CHIP is a model that allows local public health departments to use their own local data and evidence to prioritize and address their unique

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[40] Coalitions, State and County Interventions. Best Practices for Comprehensive Tobacco Control Program. ftp://ftp.cdc.gov/pub/fda/fda/user_guide.pdf

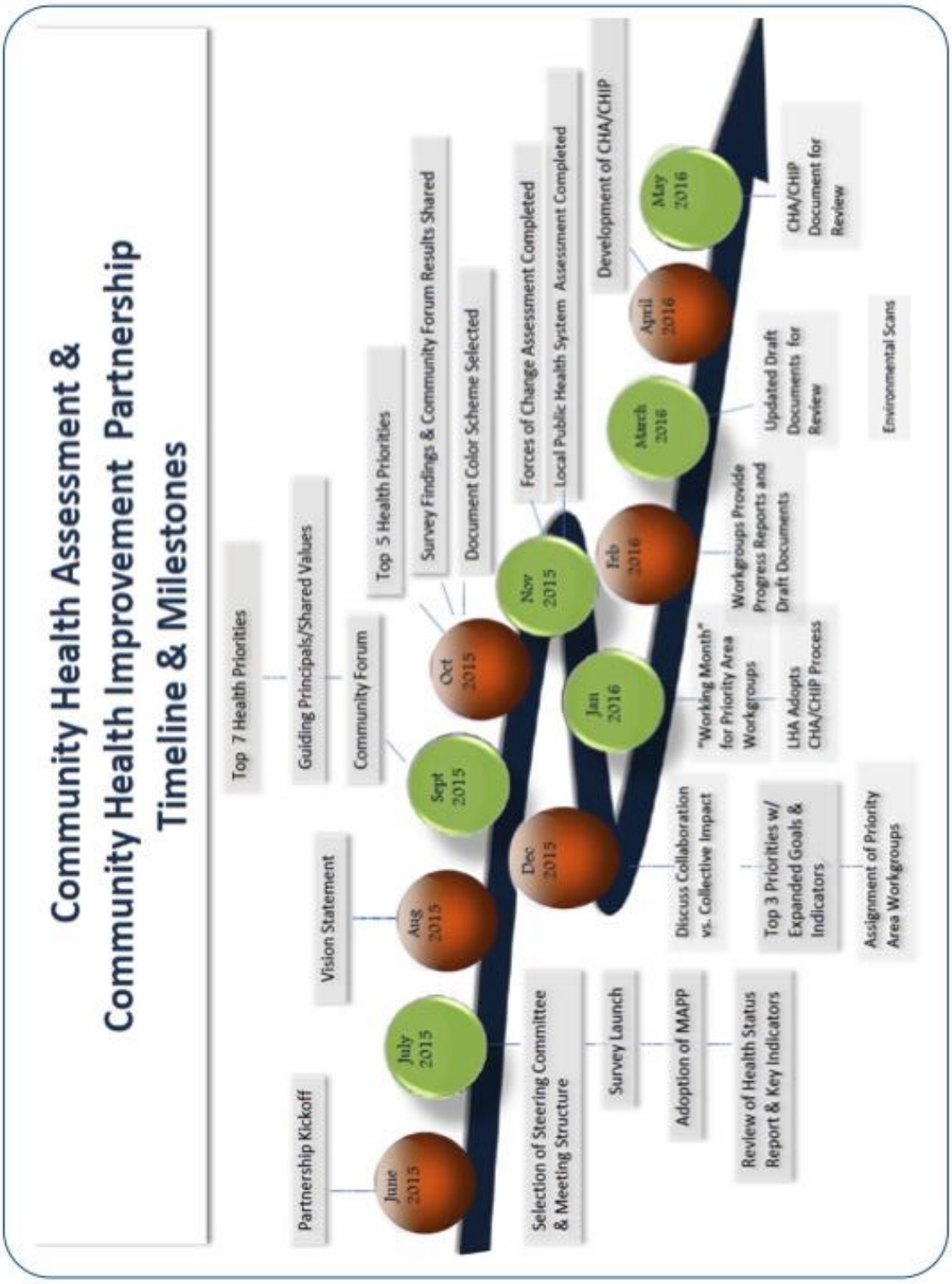
[41] Community Health Assessment and Improvement Plan. National Association for County and City Health Officials. Available from: http://www.naccho.org/programs/public-health-infrastructure/community-health-assessment

programs. In Imperial County, developing the CHA-CHIP plan in 2015 brought together stakeholders to evaluate and prioritize the community's health issues, including asthma. Over the next year, the partnership worked through a series of steps, including community engagement, to develop and deliver the CHA-CHIP Plan in May of 2016.

Around this same time frame, the proposal for the CACHI was also submitted, and the County was notified that it was awarded the grant in July 2016. Award of the CACHI grant brought attention to the County's efforts and opened the opportunity for the California Leadership Academy for Public Health, with four commissioners from the LHA participating in the Leadership Academy.

Local in-home asthma service providers that serve difficult-to-reach populations at home, such as the Imperial Valley Child Asthma Program and Comité Civico del Valle, are well-positioned to contribute to building a strong coalition focused on financing asthma as they have over fifteen years of experience working in different levels of partnership. Since the early 2000s, they have utilized a variety of funding streams and leveraged resources from various organizations, including academia, as well as local, state, and federal agencies. Such examples of collaborations that have positively impacted asthma in the community include the Asthma Initiative partnership, the Community Action to Fight Asthma, the Border Asthma and Allergy Study (BASTA) Study, the Respira Sano Study, and the Imperial Valley Community Air Monitoring Study. Implementation of the sustainable financing strategy shared in this report will depend heavily on the level of meaningful engagement between Imperial County asthma stakeholders from both the governmental and non-governmental sectors. All groups should consider joining and fully participating in the LHA.

Figure 5: CHA-CHIP Timeline and Milestones



ELEMENT 2: STANDARDS OF CARE

In Element 2, Imperial County stakeholders should establish acceptable standards of care and scope of practice for asthma educators and CHWs.

Medical bodies, government agencies, accrediting organization, disease specific non-profits, and many others, review medical literature to develop standards of care and best practices for many medical conditions. According to the Medical Dictionary for Healthcare Professionals and Nurses, standard of care is a legal definition meaning, "the ordinary level of skill and care that any health care practitioner would be expected to observe in caring for patients".[42]

In the asthma realm, Expert Panel Guidelines (EPR)-3 serve as one reference for standards of care. The National Asthma Education and Prevention Program (NAEPP), through an expert committee commissioned by the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health, developed the guidelines to cover four aspects of asthma care:

- assessment and monitoring,
- patient education,
- control of factors contributing to asthma severity, and
- pharmacologic treatment.

Subtopics were developed for each of these four broad categories.[43] Other resources for best practices, guidelines, educational materials and more include: the CDC, WHO, and the National Institutes of Health.

Standards of care are essential in healthcare to create evidence-based practices, to facilitate collaboration between health care providers and to delineate roles. Communities with successful in-home asthma services develop clear guidelines on what CHW educators can or cannot do during home visits. Programs are also careful to document what qualifications are required of CHWs. In the case of in-home asthma visits, the education, credentials, and qualifications of the person conducting the visit dictate what he/she can or cannot discuss. For example, Asthma Start and West Michigan does not allow CHWs who are not nurses to review

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[42] Standard of care. The Free Dictionary. Medical Dictionary for the Health Professions and Nursing ©Farlex 2012. Available from: http://medical-dictionary.thefreedictionary.com/standard+of+care

[43] EPR Guidelines on Asthma, Full Report. National Heart, Blood and Lung Institute. Updated August 2007. Available from: http://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines/full-report

proper use of inhalers or administration of medication. In some circumstances, asthma triggers may only be reviewed by a specific type of care provider.

Unlike existing in-home asthma service providers in other regions that have more sustainable funding, Imperial County faces a challenge that there is no existing standard for CHWs to provide care. Programs in other counties and states almost exclusively use licensed and/or certified professionals: Asthma Start uses licensed social workers, while West Michigan uses licensed respiratory therapists, licensed social workers, and licensed nurses.

There are possible solutions on the horizon. Through The National Asthma Educators Certification Board, non-licensed professionals such as CHWs in Imperial County can obtain certification, but they first have to demonstrate 1,000 hours of patient care experience. Additionally, the California Department of Public Health is currently developing a training program for asthma community health workers. This training program may gain wide acceptance and create an opportunity for training CHWs in the County; however, it will also be important for this program to be accepted and approved by insurers and primary care providers in the County.

While the lack of providers in the County is a significant challenge, it also offers a unique opportunity to pilot and demonstrate how a hierarchy of care can be successful. In recent years, hierarchy of care together with standards of care and best practices has allowed physician's assistants, nurse practitioners, registered nurses, registered dietitians, and other professionals to play a more significant role in care. The proposed Imperial County asthma coalition can lead the way in incorporating CHWs into a care hierarchy for in-home asthma services.

Element 2 may include development of ongoing professional training requirements for documentation of training. This phase will also inform the overall structure of in-home asthma services in the County.

ELEMENT 3: DATA COLLECTION AND DATA SYSTEMS

Imperial County stakeholders should determine the data they must collect to demonstrate standards of care, scope of practice, and return on investment. Imperial County stakeholders should also establish an efficient data collection system because the collected data will only be valuable if it is relatively easy to extract, and can be analyzed and reported.

DATA COLLECTION

All in-home asthma programs must collect data on patients and the visits. This data will demonstrate the impact of their intervention on their patients and in their community, their

adherence to scope of practice and standards of care, and the program's return on investment. All programs studied currently collect information at the point of services on paper (hard copy) forms, using standardized forms.

Careful thought should be used in identifying what data to collect since data collection is resource intensive. Existing programs such as Asthma Start offer a great starting point on which the County can model its data collection system. Examples of forms, education materials for Asthma Start can be found in Appendix B. Intake forms, progress notes, assessment quizzes, planning documents and educational materials can be created for different stages of visits and may vary depending on who visits, the caregiver's credentials, and the purpose of the visit. In other words, data collected and the systems for doing so are closely tied to standards of care and scope of practice that are developed in Element 2, Standards of Care. When all care providers are familiar with and use the same materials, and then properly document the visits, efficiencies will be achieved, duplication of efforts will be avoided, and trust in the quality of care will be solidified.

Based on interviews and review of documentation from Asthma Start, West Michigan and other programs, the most basic data from an initial assessment includes:

- demographic information: parent's name, age, address, phone number, etc.;
- whether an Asthma Action Plan exists and is followed;
- what medications the patient takes, how the patient is taking them; and
- whether the patient has missed school, visited an emergency room, or been hospitalized.

When developing documents and systems for data collection, consideration should be given to several factors, including:

- What is the desired outcome of the program?
- How will it be measured?
- What is the ease of extracting information so that outcomes are easily tracked, analyzed and reported?

The development of outcome measures for public health programs requires research and input from experts in public health. Several different agencies and organizations offer assistance in developing measures and metrics to assess quality and program effectiveness. The Agency for Healthcare Research and Quality (AHRQ) provides research and data analysis on healthcare quality issues to the Department of Health and Human Services, hospitals, health systems, universities and more. AHRQ offers two types of quality measures: process measures and

outcome measures. Process Measures reflect provider-patient performance, impact actions to be taken, and are in the control of the provider. Outcome Measures are related to the patient's health status. Examples of each are provided in Table 1.[44]

Table 1: Asthma Process and Outcome Measures[45]

Process Measures	Outcomes Measures
Asthma severity assessment	Limitation on activities
Asthma Management Plan	School/work days missed due to asthma
Asthma education (triggers and other)	Frequency and use of inhalers
Planned physician visits	Hospitalizations due to asthma
% of population that receives asthma education	ER visits due to asthma
% of population exposed tobacco smoke	Days free of asthma symptoms

Insurance plans need to know that money spent on any service delivers results. In the health care reform environment and with government drivers such as the ACA, there is a mandate for health plans to show they are decreasing costs. As health plan providers in the United States are pressed to become more cost-effective, insurers that serve low-income populations are incentivized to adopt successful programs that provide a positive return on investment, such as in-home asthma education. Generally, the data collected over time will help demonstrate that in-home asthma services improve patient outcomes while decreasing costs, thus providing ROI.

Insurance companies analyze the direct costs of asthma to determine the effectiveness of treatment. CHWs must demonstrate that their programs can reduce these direct costs to show a positive ROI for insurers and achieve reimbursement. Organizations that have succeeded in achieving reimbursement, such as Asthma Start, are familiar with the difficulties of providing the

[44] Asthma Care Quality Improvement. Module 4: Measuring Quality of Care. http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/asthmaqual/asthmacare/module4.html

[45] Dimensions of Asthma Care Improvement. Agency for Healthcare Quality and Research. Available from: http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/asthmaqual/asthmacare/table4-1.html

care and collecting the data that can demonstrate a positive ROI, and their experience will prove a vital resource to Imperial County as it progresses with its efforts.

As shown in Table 1, asthma related hospitalizations and ED visits are important outcome measures. Decreases in both hospitalizations and ER visits occur when individuals obtain better asthma control through proper management of symptoms, use of medication, and elimination of asthma triggers. The Asthma Control Test was developed to efficiently and effectively assess how a patient is managing his/her asthma. By recording and tracking the results of this questionnaire over time, providers can report changes in patient asthma control.

It is worth noting that a substantive challenge in healthcare now lies in assessing indirect costs, and considering how to quantify qualitative benefits of programs and interventions. In healthcare, indirect costs are "defined as the expenses incurred from the cessation or reduction of work productivity as a result of the morbidity and mortality associated with a given disease."[46] They include individual, business and societal impacts of disease and illness such as lost wages, worker turnover and decreased economic output. For example, in the case of childhood asthma, programs might eventually want to identify and quantify how a child's asthma impacts a parent's ability to work. Both the CDC and the World Health Organization (WHO) are paying more attention to indirect costs.[47,48]

Organizations providing in-home services do not require access to insurance company claims data, but it is helpful for in-home care providers to understand which claims data are evaluated by insurance companies. Asthma education programs may obtain access to claims data over time by collaborating with insurers, hospitals, and medical practices in their community. In other words, claims data is not a prerequisite to reimbursement; however, it does help programs analyze and better understand the impact they are having, and can be a long-term goal in this process.

DATA SYSTEMS

Data sharing becomes more complicated as the number of partner organizations and people involved in the delivery of in-home asthma services increases. Data sharing also becomes more

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[46] Stephen J. Boccuzzi. Indirect Healthcare Costs. Cardiovascular Health Care Economics. 2003. P 63. Available from: http://link.springer.com/chapter/10.1007%2F978-1-59259-398-9_5

[47] Wang LY, Zhong Y, Wheeler L. Direct and indirect costs of asthma in school-age children. Prev Chronic Dis [serial online] 2005 Jan [date cited]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/

48 World Health Organization. The Economics of Social Determinants of Health and Health Inequalities. 2013. http://apps.who.int/iris/bitstream/10665/84213/1/9789241548625_eng.pdf

imperative to ensure continuity of care between different care providers. The data and documentation must also be filed, stored, and protected (the latter in compliance with HIPAA requirements).

Successfully funded community health programs share databases with existing providers or government agencies through which they share basic patient information and achieve some efficiencies. The in-home asthma programs that EFCWest studied possessed significant limitations on the usefulness and/or ease of use of shared data across organizations, so they depended primarily on the systems they created internally. Overall, these shared systems either lacked customization to track individual program metrics, or involved too many barriers to accessing and exporting the data. Since the needs for asthma programs are not met with these shared systems, they have developed their own systems.

At Asthma Start, asthma educators use custom-created forms for home visits to collect patient data. Then, a clerical worker inputs the data from paper forms into an Access database customized to Alameda County. This is a low-cost, temporary solution for data collection; however, it possesses obvious inefficiencies and limitations attributed to paper systems. Learning from these programs, a more strategic approach for Imperial County stakeholders is to establish a data collection system that meets the needs of all stakeholders.

ELEMENT 4: CLINICIAN RECRUITMENT

Imperial County stakeholders should continue to recruit and maintain a wide range of clinicians, in addition to CHWs.

Throughout interviews and the June 6th workshop, participants reinforced the need for physicians, including specialists, in Imperial County. To date, there are a handful of primary care physicians in El Centro and no asthma specialists (such as pulmonologists or allergists). Interviews also indicated that even when recruitment efforts resulted in physicians moving to Imperial County, those physicians often lacked Spanish-speaking skills.

Despite the challenges of an 80% Hispanic population, and shortage of all types of clinicians, CHWs have helped fill the gap for asthma education. CHWs are able to relate to and communicate with patients, with a shared language and culture. Identifying community members that have an interest or experience in clinical education and training, such as nursing, licensed social work, or respiratory therapy, could further bridge the gap between supply and demand of clinicians. The LHA Priorities Survey identified this as the third most important topic area to address.

ELEMENT 5: DEVELOP STANDARDIZED FORMS AND EDUCATIONAL MATERIALS

Imperial County stakeholders should develop forms and education materials that are mutually agreed upon and standardized.

By standardizing forms and educational materials, all stakeholders will better understand what information and education patients receive in their in-home visits. This will create more trust within the Imperial County asthma community and help with communication. By standardizing forms, in-home care providers can ensure they are consistently collecting the right data and all stakeholders are assured that standards of care are met. Concerns of health insurers, physicians, and other stakeholders that quality measures are in place and scope of practice is followed will be alleviated by creation and use of standardized documents.

ELEMENT 6: CONTINUOUS IMPROVEMENT AND INNOVATION

Imperial County stakeholders should continue to build on existing and new collaborations and innovations to promote continuous improvement in their asthma care efforts.

A cornerstone of effective continuous improvement is the development of metrics and methods to assess program effectiveness. Outcomes and outputs need to be predetermined to understand if the roadmap is on the correct trajectory or veering off-course. Indicators of success, such as number of reductions in emergency room visits and hospitalizations or reduction in missed school days, should be regularly tracked, analyzed and reviewed so that Imperial County has baseline and ongoing metrics to continuously improve outcomes.

Finally, innovation should be integrated into the roadmap as Imperial County moves forward. Stakeholders will likely discover new approaches that surpass and improve upon original methodologies as the County progresses with its collective efforts to control asthma. The regular convening of stakeholder groups to work on the CACHI grant, CHA-CHIP and this roadmap will allow consistent input from program partners. These collaborations will promote innovation and further develop the leadership and trust of asthma stakeholders in Imperial County.

CONCLUSION

As evidenced through interviews and the workshop, Imperial County is a close-knit community that cares deeply about the health of its residents and possesses essential assets for making significant strides to reduce the impact of asthma. Imperial County has creatively evolved its own resources to address the asthma burden, and in recent years has demonstrated a deep commitment to seek asthma solutions from public, private, and nonprofit sectors. Key

partnerships are already in place, and new collaborations can quickly build on these existing relationships. The LHA and the CHA-CHIP Partnership have already shown positive results and other stakeholders in the community are invited to get involved.

As a small, rural community, Imperial County is breaking new ground in the reimbursement arena and may set the path for other rural counties to follow in the future. Working with limited resources, the County's public health department, the LHA and various County stakeholders providing essential services have coalesced as a community, leveraged their strengths and overcome their weaknesses. The roadmap emerged from the experience of West Michigan and Asthma Start and supports the CMS strategy for better care for individuals, better health for populations, and lower cost.[49] Equally important, the elements of the map were identified by the Imperial County stakeholders who were interviewed and who participated in the June 6th workshop. Therefore, the County is already well positioned to follow the roadmap. By completing the six elements, in-home asthma service providers can achieve reimbursement and establish a foundation that will offer long-term sustainable funding for essential services.

[49] What are the value-based programs? CMS Value-based Programs. Centers for Medicare and Medicaid Services. Available from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs.html.

APPENDIX

APPENDIX A: IMPERIAL COUNTY ASTHMA FINANCING INTERVIEWEE LIST

ORGANIZATION	NAME	TITLE
Alameda County Public Health Department	Brenda Yamashita	Program Director
Alliance Healthcare Foundation	Nancy Sasaki	Executive Director
Alliance Healthcare Foundation	Michele Silverthorn	Program Officer
Asthma Network of West Michigan	Karen Meyerson	Manager
Border Philanthropy Partnership	Andy Cary	Executive Director
California Health and Wellness	Kathleen Lang	Vice President Operations, Imperial County
California Department of Public Health (CDPH)	Judith Balmin	Health Program Specialist, California Breathing
California Department of Public Health (CDPH)	Lori Copan	Chief, Community Participation and Education, California Breathing
Central California Asthma Collaborative	Kevin Hamilton	Executive Director
Clínicas de Salud del Pueblo	Dr. Afshan Nuri Baig	Chief Medical Officer
Clínicas de Salud del Pueblo	Leticia Ibarra	Director of Programs
Comité Cívico del Valle	Luis Olmedo	Executive Director
Esperanza Community Housing	Ashley Kissinger	Project Manager
Flathead County Health Department	Dr. Hillary Hanson	Deputy Health Officer
Health and Human Services	Dr. Betsy Thompson	Acting Region Health Administrator
US Department of Housing and Urban Development	Karen Griego	Healthy Homes Representative
Impact Assessment, Inc. & California Department of Public Health	Deanna Rossi	CA Breathing Contractor
Imperial County Air Pollution Control District	Brad Poirez	Air Pollution Control Officer
Imperial County Children and Families First Commission	Julio C. Rodriguez	Executive Director
Imperial County Public Health Department	Janette Angulo	Deputy Director, Community Health
Imperial County Public Health Department	Amy Binggeli-Vallarta	Planning and Evaluation Specialist
Imperial County Public Health Department	Robin Hodgkin	Department Director

ORGANIZATION	NAME	TITLE
Imperial Valley Child Asthma Program	Aide Munguia-Fulton	Director
Imperial Valley Community Foundation	Bobby Brock	President and CEO
New England Asthma Innovation Collaborative	Stacey Chacker	Director, Asthma Regional Council at Health Resources in Action
Pioneers Memorial Hospital	Robyn Atadero	Chief Nursing Officer
Regional Asthma Management and Prevention (RAMP)	Anne Kelsey Lamb	Director
Regional Asthma Management and Prevention (RAMP)	Joel Ervice	Associate Director
San Diego State University	Nadia Campbell	Research Manager, Imperial County Asthma CER Project (RESPIRA)
San Diego State University, Imperial Valley Campus	Helina Hoyt	Nursing Coordinator
US EPA Border Environmental Health Initiative	Jeremy Bauer	Regional Coordinator
US EPA Asthma Initiative	Melanie Hudson	Contractor
US EPA Region 10	Erin McTigue	Tribal Air Quality Specialist
Washington State Asthma Initiative	Gillian Gawne-Mittelstaedt	Executive Director, Partnership for Air Matters
New England Asthma Innovation Collaborative	Stacey Chacker	Project Director
Centers for Medicare and Medicaid Services, Health and Human Services	Cynthia Lemesh	Lead Case Worker, Region IX

APPENDIX B: ALAMEDA ASTHMA START MATERIALS

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[Due to file size limitations, Appendix B is posted separately]