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## Sustainability and Spread of Community-based Initiatives: A case study of Community Cares, a Children's Hospital's 16 year effort to serve its community

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## Introduction

The challenge to maintain collaborative efforts within and across organizations is well known (Berwick, 2003; Buchanan et al., 2005; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Racine, 2006; Scheirer, 2005). The professional literature addresses the sustainability and spread of innovations, and not surprisingly maintaining such efforts is often found to be elusive, presenting continuous challenges to program leaders. Wiltsey Stirman and colleagues (2012) ask the following question:

All systems and organizations are faced with the challenge of implementing new practices at one time or another, yet many of the innovations that are initially successful fail to become part of the habits and routines of the host organizations and communities. Why do some take root and flourish while others languish? (p. 2)

In fact, depending on the study, 33% to 70% of all innovations are reportedly not sustained, as measured by a number of different organizational design methods (Fleischer, Semenic, Ritchie, Richer, & Denis, 2015). In a massive study effort from the United Kingdom (UK) looking at innovations within the health systems, this elusive goal of measurable sustained change is referred to as the “evaporation of improvements.” This phrase captures the seemingly mysterious inability of many institutions to maintain the enhanced improvement on the team or throughout the organization (Buchanan, Fitzgerald, & Ketley, 2007, p. 22).

A model for conceptualizing sustainability and spread as both multi-dimensional and multi-factorial is presented; this model has several characteristics and preconditions. Using a case study methodology described by Yin (1984; 2004), an explanatory, single-case study describing a 16-year effort to locate primary care health services in traditionally underserved areas within the Houston, Texas, community, Community Cares, illustrates the components of a model for understanding sustainability and spread. The paper will first describe a conceptual framework for sustainability and spread drawn from the human organization literature; next the case study methodology will be described, followed by the description of the Texas Children’s Pediatrics’ Community Cares initiative; and finally, a discussion of this community-based initiative from the standpoint of the sustainability and spread model will be offered.

An explanatory, single-case study methodology described by Yin (1984; 2004) is used to describe a 16-year experience observed within Texas Children’s Pediatrics’ Community Cares in Houston, Texas. According to Yin, an explanatory case study is ideal for answering “how”

questions in which the investigators have little control over the events and in which the focus is on the real-life context of the situation or set of circumstances being described. The criteria for a case study include: 1) a research question, 2) data sources from which to construct the case description, 3) components of the case to describe and analyze, and 4) a discussion of how the description makes sense of the situation/circumstances in the case relative to the initial research question (Zucker, 2001). For this explanatory, single-case study, those criteria are met as follows:

- 1) Research question: How did the community-based primary care medical home health care delivery program, Community Cares, sustain itself over 16 years and spread from one to six sites?
- 2) The data sources for this explanatory, single-case study are two internal evaluation reports conducted on Community Cares<sup>1</sup>:
  - A. Past, Present and Future: Texas Children's Hospital Project Medical Home (2009)
  - B. Community Cares: A Blueprint for Change (2016)
- 3) The components of the case to be described and analyzed are:
  - A. Background
  - B. Community Demographics
  - C. Assessment of Healthcare Need
  - D. Model for Care
  - E. Community Cares Practice Sites
  - F. Performance Evaluation Metrics
    - i. Patient volumes
    - ii. Financial indicators
    - iii. Reduction in non-urgent emergency center utilization
    - iv. Insurance coverage
    - v. Patient satisfaction measures
- 4) The discussion uses the characteristics and preconditions framework for sustainability described by Fleischer et al. (2015) and the spread continuum described by Buchanan et al. (2007).

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<sup>1</sup> Both reports are available upon request from Texas Children's Pediatrics, <https://texaschildrenspediatrics.org>.

## **Sustainability and Spread Conceptual Framework**

The Institute for Healthcare Improvement (IHI) (2008) uses straightforward language to define sustainability as locking in progress while continually building upon that foundation and defines spread as actively disseminating best practice and knowledge about every intervention and then implementing each intervention in every available care setting. (Institute for Healthcare Improvement, 2008). Any discussion of sustainability and spread relates to the concept of innovation. Ideally, it is an innovation which improves care that we hope is sustained and spread throughout the clinical setting. It should be noted that not all innovations are improvements. Rogers (1995) defines an innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 12).

Fraser, Wilson, Burch, Osborne, and Knightley (2002) and Osborne (1998) classify innovations into four categories that are useful for this case study, namely:

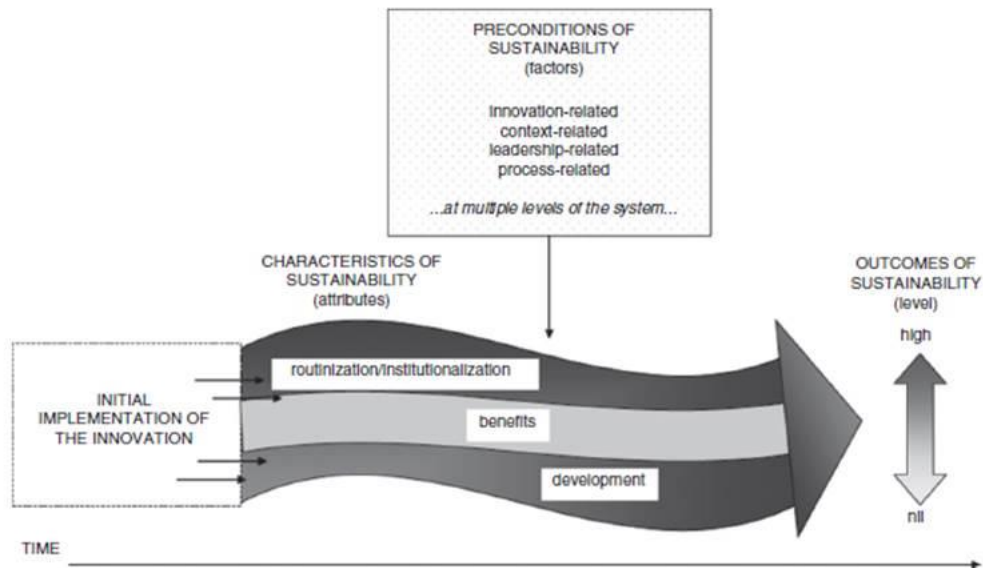
1. Developmental innovations (existing services to a particular stakeholder group are improved or enhanced);
2. Expansionary innovations (existing services are offered to new stakeholder groups);
3. Evolutionary innovations (new services are provided to existing stakeholders); and
4. Total innovations (new services to new stakeholder).

Appreciating the nuances between each of these forms of innovation are essential to the change management process inherent in sustaining and spreading innovation. Clarity around one’s conceptual frameworks helps in understanding the multivariate factors at play in a complex, unpredictable environment such as exists in healthcare and can assist in anticipating barriers or resistance should they arise. Additionally, Buchanan et al. (2007) from the UK take an ecological or systems-based approach as well. They describe different levels at which change may occur and draw attention 1) to the individual professional, 2) to the specific unit, and more broadly, 3) across the organization with an additional level being 4) outside of the organization into the community or external environment.

Fleischer et al. (2015) describe sustainability as a multi-dimensional, multi-factorial concept that may ideally be viewed as having three characteristics and four preconditions, all drawn from their comprehensive concept analysis (see Figure 1). These three characteristics are: 1)

benefit, 2) routinization, and 3) development. The benefit characteristic is rooted in the understanding that only valuable innovations should be sustained. In considering the benefit of an innovation, we can consider both objective and subjective perspectives, namely 1) objective (quantifiable results that formally confirm the achievement of an outcome) and 2) subjective (perceived value that is more informal in nature that confirms the positive results to involved stakeholders). Routinization refers to the adoption of practices indicating that the innovation has gone from “new” to “accepted” and is now part of the fabric of the setting. And development describes a sense of ownership by key participants who 1) invest in the ongoing work around the initial innovation and who 2) address the need to apply the innovation in evolving changing environments. Openness of the leadership to adjusting and refining an innovation allows participants to recognize that the ideas and improvements are ultimately their own.

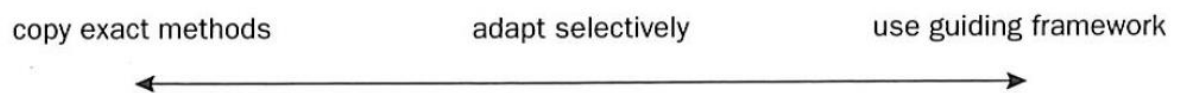
In addition, four preconditions also influence sustainability: 1) innovation, 2) context, 3) leadership, and 4) processes. Innovation relates the “fit” with the mission and its relevance for solving the problem. Context addresses both internal and external aspects of a given setting defined as: 1) internal: organizational culture and project management capacity to implement the innovation and 2) external: policy, regulations, legislation, and financial pressures (i.e., funding or marketplace associated). Leadership relates to skill of the improvement champions and management team to inspire engagement of the participants. And finally, process refers to performance improvement capabilities.



*Figure 1.* Concept analysis for the sustainability of healthcare innovations

(Fleischer et al., 2015; used with permission)

Spread, essentially the adoption of an innovation beyond its original implementation site, occurs across a continuum (see Figure 2): moving from copying the innovation exactly across sites to the other extreme, where the original innovation serves as a guiding framework for action in a different setting (Buchanan et al., 2007).



*Figure 2.* The spread continuum

(Buchanan et al., 2007; used with permission)

## Methodology

### **Case Study: Texas Children's Pediatrics' Community Cares**

**A. Background.** In 2000, Texas Children's Pediatrics launched a program called Project Medical Home, now called the Community Cares program, to support the unmet health care needs of the underserved in the Greater Houston community. Community Cares was designed to emphasize the empowerment of families and community collaboration. Using ongoing evaluation, the management team at Community Cares continues to identify issues related to access to care as well as to issues related to care delivery processes that address new challenges that arise for the underserved families being served.

The Community Cares program provides the larger health system of which it is a part with a unique window onto how the traditional private practice model of healthcare may create challenges for patients, their families, and the healthcare providers who serve them. For the purpose of this case study, the steps that led to the success of our program are examined. These include:

- Developing the medical home concept and establishing six centers in Houston to serve under-resourced communities;
- Understanding the uniqueness of the model to serve poor and low-income children and reducing the incidence of episodic care;

- Partnering with community collaborators to help provide total care for patients. Helping families sign up for health insurance, government assistance, and other programs that may help.

**B. Community demographics.** Program leaders for Community Cares adopted a view that healthy, well-educated children tend to turn into healthy, productive adults and that the healthier and more productive we are collectively, the stronger and more vibrant we are as a city, state, and nation. Thus, these leaders who were designing and implementing Community Cares saw that a collaboration between medicine, public health, and education would be vital to our promoting the health and well-being of the population living in the Houston community. The Houston community has long recognized a need to do more for underserved families and children (Sanborn, Lew, Kimball, Hierholzer, & Neary, 2012). However, the goal of effectively reaching out to diverse populations of poor and near-poor families is a challenging one, even for a large metropolitan area such as the Greater Houston area. Houston is often described as one of the fastest growing regions in the nation due in part to its status as:

- a major port city;
- a hub for the oil and gas industry;
- a hub of air travel ;
- an increasing technological industry;
- the largest medical center in the country; and
- the home to 24 Fortune 500 companies, second only to New York City.

Houston is also one of the most multicultural cities in the nation, with residents speaking more than 145 languages and city leaders encouraging economic opportunities despite occasional downturns. Figure 3 captures data from the Kinder Institute at Rice University on Houston's trends related to ethnicity, age and educational level.

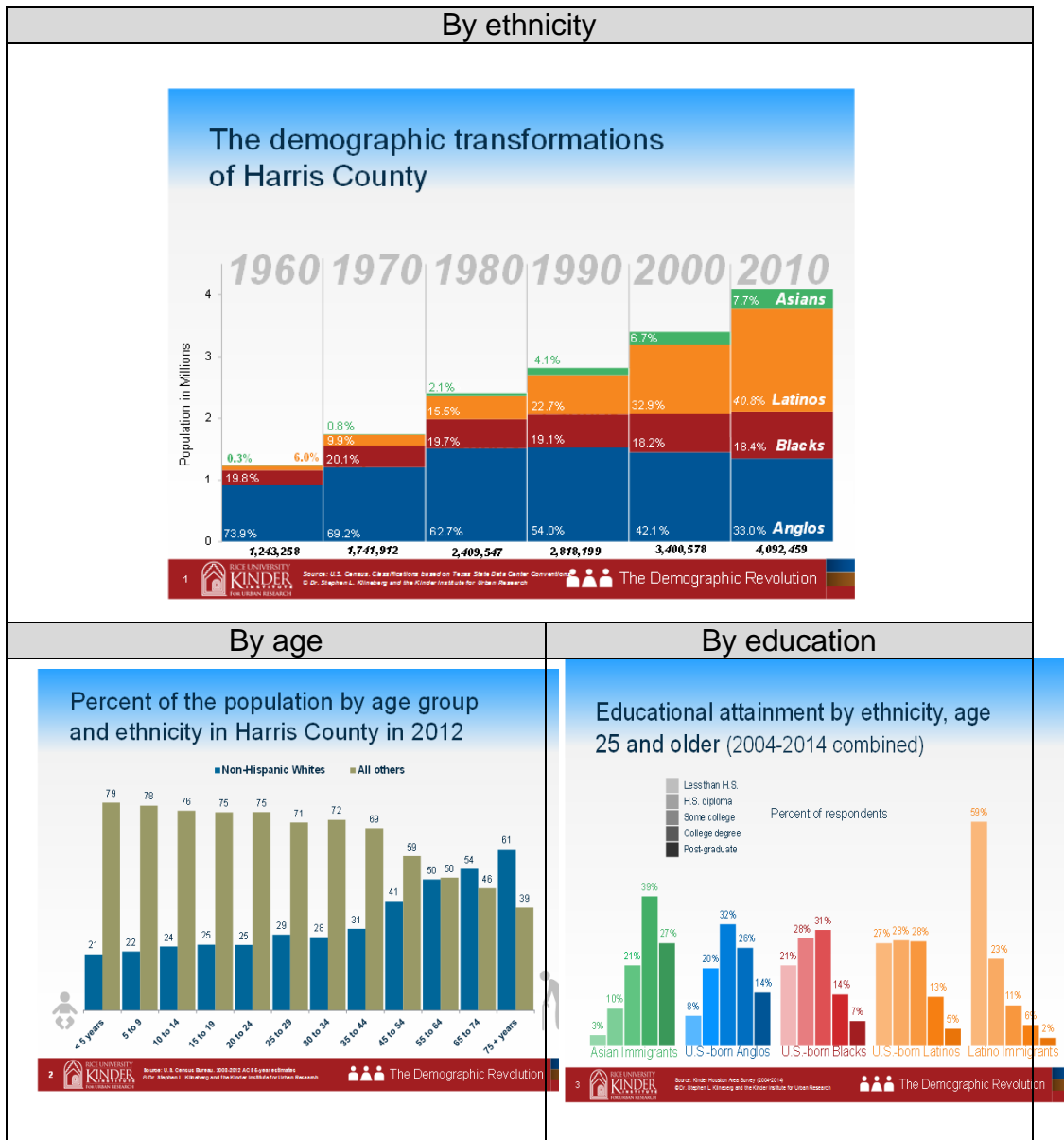


Figure 3. Houston’s demographic trends

(Kinder Institute for Urban Research at Rice University, 2013, used with permission))

Summarizing the demographic data above one can see that over the last 50 years, the US Census data for Houston demonstrates a continuing increase in ethnic diversity. The nonwhite population (67%)



continues to be the fastest growing population in Houston and surrounding areas. In addition, current population data demonstrates a significant age paradox. The population over age 55 is majority white (55%). The population under age 20 is 77% nonwhite and on track to exceed 80% soon. While the nonwhite population is growing in numbers, this same population lags behind in educational attainment. There are significantly more Latino and African American adults with less than a high school education than their white and Asian counterparts and significantly more white and Asian adults with a college or postgraduate degree than their Latino and African American counterparts.

**C. Assessment of Healthcare Need.** In Houston, many of the major threats to children's good health involve both the physical and social environment, including toxic chemicals and materials as well as habit-forming and high-risk human activities. Physical environments and social dynamics also create health barriers, including obesity, stress, low birth weight, adverse behavior, learning disabilities, substance abuse, and sexual promiscuity. These broad-based issues are growing, though the financial and technical resources to address them are limited. Although to some extent children's quality of healthcare has improved, this enhancement has not been evenly distributed across all children in the Houston metropolitan area. Further, in the public arena, children do not have adequate representation to lobby for their needs. Addressing these issues now is imperative because within a decade, today's children will emerge as adults, and many will carry the burden of inadequate health that will impair their ability to function optimally as adults.

Evaluation by Texas Children's Pediatrics' parent organization, Texas Children's Hospital, identified prior to the launch of Community Cares that there were large concentrations of at-risk children with special healthcare needs residing in neighborhoods less than 10 miles from the hospital's emergency center. The definition of children at risk, as taken from the US Department of Health, Bureau of Maternal and Child Health, encompasses those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally (McPherson, et al, 1998). Multiple sites throughout Houston were assessed in terms of the level of being medically underserved communities. According to the National Health Services Corps (n.d.), "Medically Underserved Areas/Populations are areas or populations designated by Health Resources and Services Administration (HRSA) as having: too few primary care providers, high infant mortality, high poverty and/or high elderly population." The potential Community

Cares sites were further refined through an analysis by Texas Children's Hospital and Texas Children's Pediatrics based on ZIP Code data within these areas that also showed high emergency room utilization for non-emergent care. According to hospital data, more than 80% of these visits did not result in in-patient admission, suggesting relative lower acuity that could have been met in a less intense setting than in a full-scale, hospital-based emergency department. The average cost for treatment of Level I and II visits in the hospital's emergency center at the time of the assessment (16 years ago) was \$406, which represented facility fees only and not professional services. Level I and Level II visits are defined as urgent but non-emergent care needs that could be responded to if one had a relationship with a primary care provider (such as within a functioning medical home). By contrast, the average cost for care within a pediatric practice at that time was \$125 per acute/sick care visit. During this same time, Texas Children's Hospital emergency center utilization was growing at 5% to 8% per year, a rate which was considered unsustainable. The number of patients seen annually at that time exceeded 70,000 while the emergency center capacity remained around 35,000. In light of this information, Texas Children's Hospital was supportive of Texas Children's Pediatrics establishing the initial Community Cares first location as it was specifically designed to address the non-emergent care needs in an effort to reduce inappropriate emergency center utilization.

Prior to entering the community and opening its first location, Community Cares developed an operational philosophy also grounded in what has become consistent with the approach supported by the Bureau of Maternal and Child Health codified in their 2010 Guidelines (U.S. Department of Health and Human Services, 2013), which state the following:

- All children and adolescents will receive regular, ongoing comprehensive health care within a medical home.
- All children and adolescents will have adequate private and/or public insurance to pay for health care services.
- All children and adolescents will have early and continuous health care screenings.
- All health care services for children and adolescents will be organized efficiently and effectively to allow better access for patients and their families.

- All families will participate in making health care decisions for their children and adolescents and each family should be satisfied with the services they receive.
- All youth will receive services necessary to make appropriate transition to all aspects of adult life, including adult health care, work and independence.  
(U.S. Department of Health and Human Services, 2013)

**D. Model for care.** A system-based approach to high-quality care would be essential if Community Cares were to achieve the Bureau of Maternal and Child Health's guiding principles and goals listed above—a model in which families would be served in their own communities and in which they could obtain high-quality, continuous care for their children, regardless of their ability to pay. Toward that end, the US Department of Health and Human Services' Agency for Healthcare Research and Quality (AHRQ) defined the medical home concept as “a home base for a child's primary care and non-medical care needs” (Agency for Healthcare Research and Quality, 2016). According to the American Academy of Pediatrics, “A medical home is not a building or place; it extends beyond the walls of a clinical practice. A medical home builds partnerships with clinical specialists, families, and community resources. The medical home recognizes the family as a constant in a child's life and emphasizes partnership between health care professionals and families” (American Academy of Pediatrics, 2016). Guidelines were outlined by AHRQ and adopted by the National Committee for Quality Assurance (NCQA), a recognized national accreditation body for healthcare quality, which utilizes measurable standards of care to determine program effectiveness. NCQA defines a medical home as:

- **Patient-centered:** A partnership among practitioners, patients and their families ensures that decisions respect patients' wants, needs and preferences, and that patients have the education and support they need to make decisions and participate in their own care.
- **Comprehensive:** A team of care providers is wholly accountable for a patient's physical and mental health care needs, including prevention and wellness, acute care and chronic care.
- **Coordinated:** Care is organized across all elements of the broader health care system, including specialty care, hospitals, home health care, community services and support.

- **Accessible:** Patients are able to access services with shorter waiting times, after hours care, 24/7 electronic or telephone access and strong communication through health technology innovations.
- **Committed to quality and safety:** Clinicians and staff enhance quality improvement to ensure that patients and families make informed decisions about their health. (AHRQ, 2016)


The medical home approach was seen as a positive contribution to communities surrounding the Community Cares practice sites and as a significant benefit for these families and for the community at large, since many of the children from these communities were receiving episodic care through emergency centers and not receiving routine healthcare or immunizations optimal for both individual and public health.


**E. Community Cares practice sites.** In 2000, the first Community Cares medical home opened to address the needs of economically disadvantaged children and deliver medical services to underserved communities in Houston. Since then, Community Cares has grown to include six centers (as of 2016). Although the mission, goals, and objectives of all six Community Cares centers are the same, each center has its own unique history and characteristics, as described in Table 1. While each of the six of the Community Cares sites share a common philosophy, purpose, and quality standards, they are not intended to be absolute replications of one another. This is important from the spread perspective recalling Figure 2 above, which describes a continuum of dissemination of innovations moving from exact copying to using the original site as a general guide. Community Cares is somewhere in the middle where elements are copied but other aspects are guided while being uniquely designed to reflect the hosting community. Each center maintains a network of collaborating agencies to assist families with related healthcare needs, including oral, mental, behavioral, physical, and rehabilitative health needs. As critical partners in the Project Medical Home program, these collaborating agencies support and participate in the development of community health initiatives and as such play a central role in determining the quality of children's and adolescents' health. Project Medical Home goals are to provide cost-effective medical care and ongoing support for families through the inclusion of programs focusing on the broad social, health, educational, and spiritual needs of children and



adolescents in a collaborative manner within the healthcare setting. As each community presents unique needs and challenges, the mix of additional services offered within each Project Medical Home site is also unique. Despite these variations, all collaborating agencies within Project Medical Home share certain core values:



- **Community-based:** resources that are known to the community and are culturally sensitive to the needs of the families accessing the Project Medical Home site;
- **Collaborative:** resources that recognize and value the role of interagency collaboration and communication to fully coordinate care; and
- **Committed:** resources that understand and incorporate a family-centered approach to health and wellness and an interest in improving the overall health of the communities in which they operate.

Table 1  
*The Six Community Cares Sites as of 2016*

Name and Community Connections	Description
<p><b>Texas Children’s Pediatrics Cullen</b></p>  <p><b>Community Collaborators</b></p> <ul style="list-style-type: none"> <li>• Total Woman’s Health</li> <li>• Cullen Care Pharmacy</li> <li>• K &amp; N Pediatric Rehabilitation Center</li> <li>• ABC Dental</li> </ul>	<p>Opened in 2000, Texas Children’s Pediatrics Cullen’s first expansion/relocation was in 2005, and its second will be in 2017. The center serves the Third Ward, Sunnyside, and South Park communities of southeast Houston, which are predominantly African American, with an increase in Hispanic families relocating in the area. As the first Community Cares practice, Cullen firmly established the collaborative models with local schools and community leaders. The center is located in a professional plaza, which includes other providers who also serve the pediatric population. Services include pharmacy, pediatric dentistry, and a woman’s health clinic. This location has been very successful with developing internal programs that expand the primary care practice, including mental health assessment, early literacy promotion, and preventive screening for depression and suicide among youth. These are but a few of</p>

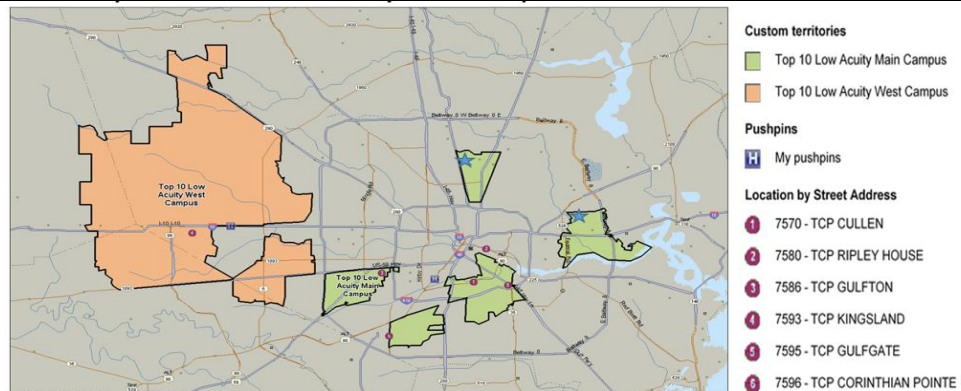
	<p>the unique services that are part of the center’s total wellness approach.</p>
<p><b>Texas Children’s Pediatrics Ripley House</b></p>  <p><b>Community Collaborators</b></p> <ul style="list-style-type: none"> <li>• NCI Charter School Without Walls</li> <li>• Houston Council on Drug and Alcohol Abuse</li> <li>• Mental Health and Intellectual Disability Authority</li> <li>• Health Information Center (HIC)</li> <li>• Ambassador’s International Ballet Folklorico</li> <li>• Houston Police Department</li> <li>• Family Services of Greater Houston</li> <li>• Mexican-American Legal Defense and Educational Fund (MALDEF)</li> </ul>	<p>Opened in 2002, Ripley serves an established Hispanic community. The clinic is close to the Fifth Ward, a predominantly African American community; however, cultural barriers limit African American patient families accessing Ripley House (a challenge currently being addressed). Ripley House has multiple community services ranging from an on-site charter school to programs for senior citizens to mental health services and the Community Cares practice. It serves as a hub for resources and activities for the community. Ripley House continues its outreach into the community. Community Cares has recently expanded its physical space within the facility to accommodate increasing patient volume.</p>
<p><b>Texas Children’s Pediatrics Gulfton</b></p>	<p>Opened in 2005, Gulfton is located in southwest Houston and serves a diverse population from various developing countries. The majority of its residents speak Spanish and have incomes below 100% of poverty level. Fifty-four percent of families with children under 18 years of age have incomes less than \$30,000 annually. This location is recognized for serving families who are new immigrants and seeking health services for their</p>

 <p><b>Community Collaborators</b></p> <ul style="list-style-type: none"> <li>• TRIAD Program of the Chimney Rock Youth Facility</li> <li>• Amigos Por Vida Public Charter School</li> </ul>	<p>children. Both documented and undocumented families utilize the health services at this practice.</p>
<p><b>Texas Children's Pediatrics Gulfgate</b></p>  <p><b>Community Collaborators</b></p> <ul style="list-style-type: none"> <li>• George I. Sanchez High School (GIS)</li> <li>• Casa Phoenix</li> <li>• The Dinosaur Project (DiNo)</li> <li>• Project Tejas and Federal Probation</li> <li>• Minorities in Action Program (MAP)</li> </ul>	<p>Opened in 2006 on the Association for the Advancement of Mexican Americans (AAMA) campus, this location was previously called Texas Children's Pediatrics AAMA. In 2012, the practice relocated and changed its name to Texas Children's Pediatrics Gulfgate. The current population mix includes Hispanic, Vietnamese, Middle Eastern, African American, and Caucasian families. This multiethnic population is a reflection of the diversity of the changing community as well as the accessibility and visibility of this location inside a popular shopping center.</p>
<p><b>Texas Children's Pediatrics Corinthian Pointe</b></p>	<p>Opened in 2009, this practice is part of a middle- to low-income master-planned community in southwest Houston. Kingdom Builders Center of Houston, Inc., a service center for a prominent African American church in the community, led the implementation of a comprehensive revitalization effort in an economically distressed area of southwest Houston. The Corinthian Pointe</p>

 <p><b>Community Collaborators</b></p> <ul style="list-style-type: none"> <li>• Corinthian Pointe Commercial Park</li> <li>• Kingdom Builders Family Life Center (KBC)</li> <li>• The National Aeronautics Space Administration (NASA)</li> <li>• The Leader's Academy</li> <li>• Kingdom Builders Corinthian Pointe Community</li> <li>• Jean Hines Caldwell Elementary</li> <li>• YMCA</li> <li>• ABC Dental</li> </ul>	<p>Residential Community consists of affordable homes, schools, a YMCA, and a commercial shopping center where the Community Cares practice is located. With the local development surrounding the center, the economic status of this population includes middle-class families as well as economically disadvantaged families. Supportive collaborative relationships exist with adjacent services including a dental clinic, a speech therapy center, and a pharmacy.</p>
<p><b>Texas Children's Pediatrics Kingsland</b></p>  <p><b>Community Collaborators</b></p> <ul style="list-style-type: none"> <li>• Katy Independent School District (ISD), Royal ISD, Alief ISD, CyFair ISD, and Fort Bend ISD—works with school nurses in vaccinating uninsured and insured kids</li> </ul>	<p>Opened in 2014, our newest Community Cares practice is located in Katy/West Houston near Texas Children's Hospital West Campus. Although surrounded by middle-/upper-middle class neighborhoods, this practice services a growing population of economically disadvantaged families, including immigrants from Central and South America, who lack access to convenient and affordable care.</p>



- KCM—Katy Christian Ministries
- Pregnancy Help Center
- Christ Clinic—Katy (charity clinic for uninsured parents of our patients)
- National Charity League—Katy
- Early Childhood Intervention (ECI) Project TYKE
- Katy YMCA



Texas Children's six Community Cares Practice sites are strategically located in key neighborhoods of poor and medically underserved families situated in areas less than ten miles from Texas Children's Main Campus and Texas Children's West Campus. The additional shaded areas have been identified as additional underserved areas with high TCH EC utilization and are considered as potential sites for future centers. The stars 59N and I-10 East are potential Community Cares Practice sites.

Each of the six Community Cares practice sites has been designed with a comprehensive level of care in mind, and these resources are meant to be easily accessed by patients and staff either in-house or through partnering organizations nearby. The six sites provide ongoing community and organizational support for family-focused health services that address the broad social, health, educational, and emotional needs of children. To that end, the goal of each site is to provide:

- Wrap-around services that eliminate logistical, cultural, and social barriers to access care;
- Counseling and educational services with emphasis on risk behaviors;
- Outreach services to address complex care issues and promote compliance;

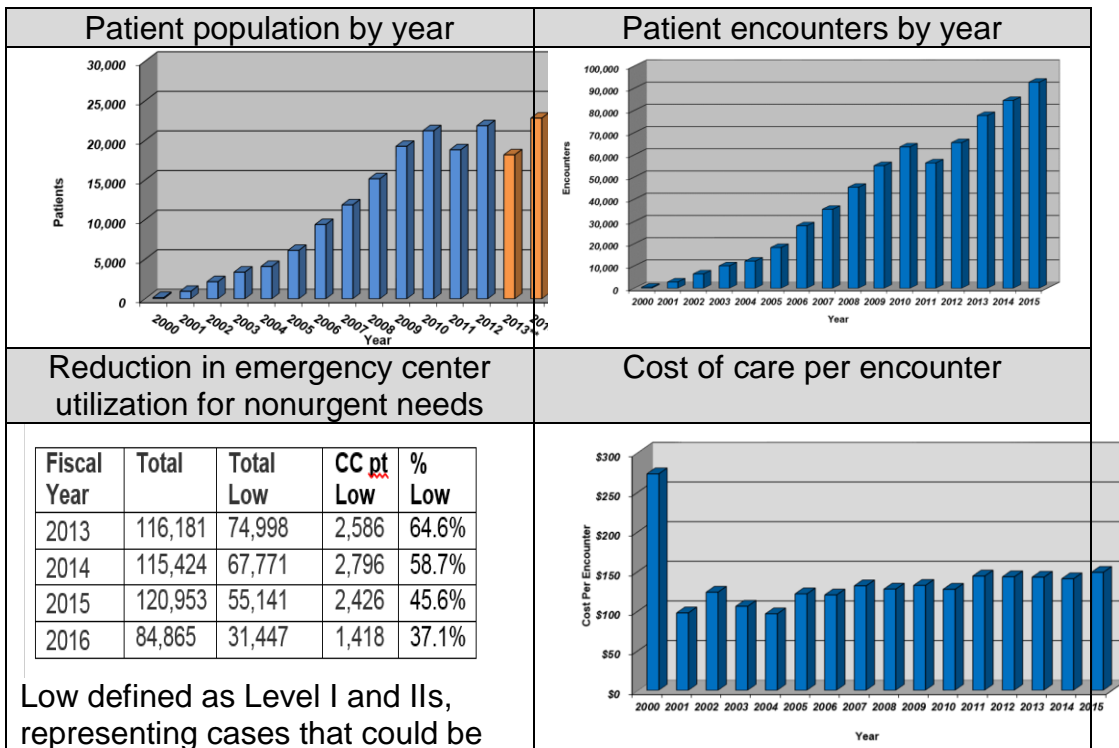
- Case management services that link individuals with community health providers and other services; and
- Social services that address socioeconomic factors that impact access to care.

#### **F. Performance Evaluation: What do the numbers say?**

Community Cares is a primary-care medical home model designed to address access issues as well as to improve the quality of life for some of Houston's most vulnerable communities over a 16-year period of time. Figure 4 demonstrates a set of data related to an evaluation of progress toward achieving the desired impact of the Community Cares program. The Community Cares practice sites have experienced a steady increase in growth, with approximately 25,000 patients currently being treated at the six locations. Total encounters for the same period have increased steadily, with those 25,000 patients generating more than 90,000 patient encounters in 2015. Based on the current rate of growth, it is projected that in 2020, utilization will exceed 40,000 patients and 160,000 encounters per year. Examining the impact that the Community Cares program may have on reducing the utilization of the hospital's emergency centers for nonurgent care, data from fiscal years 2013-2016 reflect a downward shift in low acuity visits (Levels I and II) to the emergency center among all patients, especially among patients who live in ZIP Codes served by Community Cares practice sites.

The sustainability of practice locations depends on many factors, but financial viability and cost structure figure prominently in any such discussion. Over the past 10 years, despite rapidly rising healthcare costs across the industry, the cost per encounter at Community Cares practices has remained relatively flat (the 15-year average is \$135 per visit). This finding shows a level of efficiency that is consistent throughout the Community Cares centers and demonstrates the ability to sustain this model of care within the overall Texas Children's system of care. Related to finance is the payer mix and insurance coverage of any practice. The Community Cares program is committed to caring for all patients, regardless of resources or insurance. However, having insurance coverage—in and of itself—is an important determinant of health (Sullivan & Stoll, 2007). Studies repeatedly show that the uninsured are less likely to receive preventive care and services for major health conditions and chronic diseases, according to the Kaiser Family Foundation (2016). A major longitudinal study from the Keck School of Medicine at University of

Southern California recently found that uninsured children had the most insufficient levels of care and the most unstable medical home experiences. The uninsured subgroup also had the children in most need of constant, high-quality care. Although commercial insurance coverage has declined steadily in our patient population, our rate of uninsured patients has dropped significantly due to large increases in Medicaid coverage. Community Cares practices employ social workers and administrative support staff to help all families who qualify sign up for Medicaid, CHIP, and other appropriate plans. In the early 2000s, more than 35% of patients receiving care in Community Cares were uninsured. Today, less than 5% of Community Cares patients are uninsured, and the rate continues to decline. Finally, quality is important, and the National Committee for Quality Assurance (NCQA) recently awarded all six Community Cares practices with its highest Patient Centered Medical Home Recognition. NCQA is a private, nonprofit organization dedicated to improving healthcare quality and helping consumers make more informed healthcare choices. Built on evidence-based, nationally recognized clinical standards of care, this recognition indicates that clinicians and practices support the delivery of high-quality, cost-effective care.



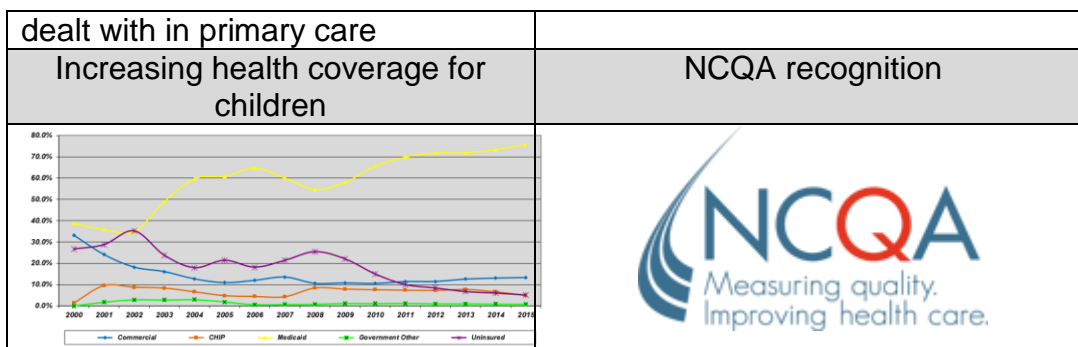


Figure 4. Performance measures

In assessing the success of a primary care practice, measuring elements of the patient experience is also important (Institute for Healthcare Improvement, 2016). In the pediatric practice setting, satisfaction surveys distributed to the child's parents are the typical approach to measuring how satisfied they are with the care received. Patient satisfaction surveys have been conducted in the Community Cares sites since their inception. Between the years 2000 and 2013, a satisfaction measuring tool that focused upon overall satisfaction with the care received as well as "courtesy and friendliness of the receptionist" and "satisfaction with the length of time to see the doctor" was used through the five Community Cares sites. Beginning in 2014, a different measuring tool that was more comprehensive in scope was adopted system-wide, and Community Cares migrated to this new measuring system. Therefore, the caregiver satisfaction measurements from the first 13 years are not directly, one-for-one comparable to the satisfaction measurements for the most recent 3 years, 2014 through 2016. Using the original tool, the satisfaction scores for Community Cares averaged 94% and ranged from a high of 98.34% and a low of 90.34%. These scores compared favorably to the other pediatric practices within the Texas Children's Pediatrics network, demonstrating a relatively high degree of satisfaction and indicating the establishment of positive relationships with the patients and families being served. Moving toward the newer measurement system, the scores reset to a lower level both within Community Cares as well as within the other pediatric practices throughout the network. Using this newer, more comprehensive tool, the satisfaction scores for the Community Cares sites in 2014 through 2016 averaged 89% and ranged from a high of 89.76% to a low of 89.23%; these new, reset scores again compared favorably with the other pediatrics practices. The program staff view these relatively favorable scores as indicating that through efforts to

establish and build relationships with the patients and families, there is a better understanding of the unique circumstances of the children and families being served.

In the traditional private practice healthcare model, the well child evaluation is used as a benchmark for the child's health and development, and information is provided to the family based on this reference point. The standard approach to acute illness and chronic conditions is to evaluate, prescribe treatment, and provide health education to promote wellness as a general model. Moving beyond the traditional model toward a more comprehensive, health-promoting model, Community Cares, in addition to covering the basics of well and sick child care, seeks to use every visit as an opportunity to engage in dialogue with the family and support the child's total health and well-being. The professional staff recognize that many of the Community Cares patients and their families are dealing with significant obstacles to health and well-being such as:

- Poverty or low income—may lack health coverage or be unable to make copays, unable to take off work to be with sick children or take them to doctor's appointments, or have transportation difficulties, food insecurity, job insecurity, or housing insecurity;
- Health issues—parents or children with mental or behavioral health issues, obesity and nutritional issues, or environmental factors that may influence respiratory disease;
- Limited education/lack of support for education—health issues causing frequent absenteeism, unaddressed literacy issues or learning disorders, or lack of parent education and understanding related to holistic development; and
- Stressful social dynamics—language barriers, legal issues, bullying, peer pressure, lack of support at home, abuse, or neglect.

Although many of these challenges are not strictly health-related, they can powerfully impact a child's health and development and are carefully considered in the medical home model. The physicians and staff are trained to be attentive to potential issues and to respond appropriately, and every Community Cares location has a social worker on site to help address issues and find resources that can help.

### **Discussion/Conclusion**

At the most basic level, sustainability refers to when a valuable quality innovation that improves care moves from being seen as "new" to

becoming part of the standard of delivering care. Spread, in equally simple terms, is when that improvement moves from the original developers to other areas, and eventually to every available care setting, within a healthcare organization or system (Institute for Healthcare Improvement, 2008). Applying these definitions to the Community Cares program, the reader sees that the medical home concept that underpins it has moved from being new to being a model used in well-run practice sites now going on for 16 years and that this model, with local modifications, has moved from the original practice site to now being delivered in six locations.

Harkening back to the sustainability and spread frameworks displayed in Figures 1 and 2, the Community Cares case study has the characteristics and preconditions associated with sustainability and spread discussed above.

The sustained innovation, now a standard of care within Texas Children's, is fundamentally connected to the value or benefit perceived by the clinicians and practice leaders on the original team. The guiding principles and goals are viewed as valuable, as a standard of care that is measured and reported upon to the care teams and is owned by the various administrative and clinical team members who embrace the change as vital to the health and well-being of the community and its children and families. Additionally, the sustained Community Cares program fits well within the mission of the various care teams, occurs in a data-driven, high-performance administrative context that responds to both internal and external factors, is led by effective leaders, and is modified and operationalized by teams well versed in quality improvement processes and techniques. Sustaining innovation is not easy as the literature demonstrates but those innovations that have the highest chances for success tend to share the characteristics and preconditions described. Sustained improvements should be spread or disseminated in a planned formal manner to other teams and throughout the organization. The 16-year history of the Community Cares program represents this formal planning and data-driven approach. Of course, depending on the community context, the spread occurs along a continuum from making an exact replica of the innovation elsewhere to seeing the innovation as a general framework or guiding principle that can be embraced, modified, and applied to a variety of different clinical and community settings.

We began this case report recognizing that the "evaporation of improvement" seems common and ever present. Clearly, no magic bullet exists to meeting the needs of an underserved community. Even great ideas and initiatives are not automatically sustainable nor widely spread. Instead, taking one's time, conducting a detailed needs assessment, and

being clear what the value of the initiative would be to both the community to be served as well as to the sponsoring organization are essential. Ideally, the planning and implementation teams do need to be sensitive to the characteristics and preconditions associated with sustained improvement as well. The medical home concept was a key ingredient in the success of this case report in that this approach to primary care was uniquely suited to achieve the aims, principles, and goals of the organization and at the same time meet the identified need in the community that was to be served. An initiative that actually meets, in a measurable manner, the needs of both the community and the sponsoring organization (that is listening to the community it seeks to serve) will likely diminish the evaporation of improvement, since, the good work and the data that measure its success can condense around the tangible benefit supports, continued energy, investment, and motivation of all the stakeholders involved.

One of the characteristics of sustainability and spread was the notion of being open to development and change. Toward that end, we conclude this case report with the plans for the future of the Texas Children's Pediatrics' Community Cares program. The program leaders continue to promote Community Cares as a Center of Excellence for ideal delivery of primary care to underserved communities. This can be accomplished through establishing several additional goals that will be used to monitor the progress. These additional goals include:

- Maintaining patient satisfaction surveys at or above the current level;
- Evaluating improved health outcomes by having a local and national benchmark to serve as a basis of comparison;
- Establishing a standard for community involvement, which is based on the needs being identified and met;
- Continuing parent/patient engagement, which includes education and family participation in actively maintaining good health;
- Refining a model for cost-efficiency and, as such, continuing to identify other sources of funding, including increased reimbursements and external sources of funding to offset rising costs and allow for additional program development; and
- Obtaining additional public health support and dollars to continue spreading the medical home activities throughout the communities being served and those that remain in need of such a model.

As this case shows, Texas Children's Hospital and Texas Children's Community Cares program are being successful in addressing the health needs of a number of our Greater Houston's most vulnerable children. The benefits as outlined in the 16-year evaluation data, as well as future projections, are only the beginning to change current systems to create viable and affordable high-quality healthcare for our children and families, both here and across the nation. This successful model must continue to expand and spread to other pockets of need in our community to further impact the lives of children and families. This will also create real change and opportunity within the community as well. Only through the implementation and careful follow-through as demonstrated by this case study will we truly be successful in making a change in the lives of our children and our community. Without the continued commitment to sustain Community Cares via attention to the characteristics and preconditions essential for long-term success, we are at risk of failing to address the health of our community that is possible as the young population today become the adult population tomorrow. Over the years, the Community Cares program is not just a health system and its healthcare professionals looking to treat an illness, but instead we are part of a community identifying gaps and needs and helping to create a path to good health in adulthood. This is a long-term effort, and it involves working within an organization as well as across a community of stakeholders to position each one for the role it plays in achieving child and family outcomes. When the community's children grow into healthy, productive adults, this translates into improving the health and well-being of an entire community. Of course, a program can't do things in isolation; instead, collaboration internally within the sponsoring organization as well as externally with other community partners is necessary to help empower vulnerable children and communities and to ultimately ensure that no one falls through the cracks.



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