HEALTHY STEPS AT 15: THE PAST AND FUTURE OF AN INNOVATIVE PREVENTIVE CARE MODEL FOR YOUNG CHILDREN

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ABSTRACT: In 1995, The Commonwealth Fund launched a program called Healthy Steps for Young Children, a model of preventive pediatric care for infants and toddlers up to age 3. The model relies on Healthy Steps Specialists, midlevel professionals with expertise in child development. In 1996, the Fund launched an evaluation of Healthy Steps implementation in 15 pediatric practice sites that had a specialist and staff trained in the model; the results showed excellent clinical outcomes for children in the program. Following the evaluation, many pediatric care facilities began offering Healthy Steps, with a peak of over 60 active sites in 2006, and 50 sites currently. While the specialist's salary has been the primary obstacle in maintaining Healthy Steps, the program can serve as a model of the patient-centered care that recent health care reform was intended to encourage.

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EXECUTIVE SUMMARY

The Commonwealth Fund started Healthy Steps for Young Children in 1995 to develop and test a model of preventive pediatric care for children from birth to age 3 that emphasized child behavior and development. In 1996, the Fund launched a three-year evaluation that included 15 sites in a controlled trial and another nine sites in separate evaluations. The results of these studies have been published in the *Journal of the American Medical Association, Pediatrics,* and other peer-reviewed journals.

In 2001, as the evaluation was wrapping up, it became clear that other pediatric care facilities wanted to offer Healthy Steps, so funders and managers opened participation to additional sites. The new sites were pediatric and family medicine practices, and Healthy Steps managers chose to offer the new sites flexibility to implement the model in ways that were most consistent with their existing practice methods, patient population, and resources. The number of participating sites grew to more than 60, but eventually some sites were unable to find continued funding and had to cease offering Healthy Steps. Today, 50 sites offer Healthy Steps, including pediatric and family medicine practices, Federally Qualified Health Centers (FQHCs), hospital-based clinics, and pediatric and family medicine residency training programs. Those sites that had to discontinue Healthy Steps are universally disappointed; most report that Healthy Steps had a concrete impact on their practice methods by focusing their efforts on child and family behavior and development.

Funding has been the primary difficulty with maintaining Healthy Steps implementations, as there is no steady source of government or other reimbursement for the new Healthy Steps staff. Currently, sites fund their Healthy Steps implementations with government (state or local) funds, grants from philanthropies, or internal funds. Facilities that use their own funds are referred to in this report as self-funded, and there are 19 such sites; these sites are able to provide a median of approximately $50,000 of the roughly $65,500 median annual cost of providing Healthy Steps (including one Healthy Steps Specialist). Leaders at the self-funded sites are aware of the sacrifices they must make in order to secure this funding, in some cases not being able to offer additional compensation for physicians or to hire additional support staff. Their actions clearly reflect their commitment to what they consider high-quality patient care. Other sites have found ways to bill for Healthy Steps in one way or another, using the CPT billing code for developmental screening, for example.

Several sites are funded by new municipal or state taxes. Residents of Dade County, Florida, voted for a property tax increase with revenues to be dedicated to children's programs. The tax first passed by a margin of two to one, but in the statutorily required revote after five years, 83 percent of voters supported the tax. The fact that this self-imposed property tax increase was so overwhelmingly supported during a steep recession is instructive in two ways. The vote suggests that when voters are assured as to how their tax dollars will be spent, they may not inherently be against new taxes, and it offers an idea for additional ways to fund programs for children.

Twenty of the current Healthy Steps sites operate in residency training programs. By providing Healthy Steps services to patients with the Healthy Steps Specialist to model proper use of anticipatory guidance, teachable moments, and developmental screening, a new generation of pediatricians and family physicians is being trained in quality, whole-family, whole-child pediatric care with a focus on behavior and development. Two of the current Healthy Steps training programs are directed by attending pediatricians who trained at Healthy Steps residencies themselves. These two programs are self-funded, which suggests they may be self-sustaining.

The Patient Protection and Affordable Care Act envisions a health care system with a focus on the patient-centered medical home, primary care, teamwork, and quality over volume, making Healthy Steps a natural fit. Indeed, any Healthy Steps site has a head start on becoming a patient-centered medical home, since the model entails both prevention and treatment and engages the whole family in the health of the child. Healthy Steps is based on changing or enhancing practice patterns in ways that already conform with health care reform. As implemented at the 17 currently participating safety-net organizations, Healthy Steps can serve as a model for shifting the current focus of treatment away from treating symptoms toward engaging patients, their families, and a whole care team in the well-being of the child and the family. Federal agencies could look to Healthy Steps when examining how to work a patient-centered, team-care approach into the new and expanding FQHCs provided for in reform legislation.

The patient-centered, team-oriented practice envisioned under reform will benefit greatly from physicians and other staff trained in the team-oriented methods of Healthy Steps, and in particular from the participation of the skilled Healthy Steps Specialists. Healthy Steps is already operating at residency training sites, and is prepared, with the Healthy Steps Training and Technical Assistance Team at Boston University School of Medicine, to expand its residency sites and begin turning out providers with experience in and a commitment to patient-centered, whole-family, team-based care.

HEALTHY STEPS AT 15:
THE PAST AND FUTURE OF AN INNOVATIVE PREVENTIVE CARE MODEL FOR YOUNG CHILDREN

INTRODUCTION

In 1995, The Commonwealth Fund launched Healthy Steps for Young Children. The goal of Healthy Steps was to develop and test a new model of preventive pediatric care, emphasizing child behavior and development, for children from birth to age 3. The initial goal was to enroll between 12 and 15 pediatric practices in a controlled national demonstration. The design of the demonstration called for three years of closely evaluated implementation after which it was hoped that the sites and their local funders would be able to sustain the program. Fifteen sites were enrolled in the original controlled study (and entered the program on a staggered schedule) and another nine in a variety of evaluations of differing rigor. As the national evaluation was winding down in 2001, the program's managers opened the program to new sites.

By 2010, 50 pediatric practices were implementing Healthy Steps. While 10 of the 15 original practices, as well as some of the newer sites, had discontinued Healthy Steps, new sites joined the program and others continue to do so. Moreover, a significant percentage of these pediatric providers self-fund the program, in whole or part. In view of both the tenuous economics of primary care in the United States and the challenges in funding preventive services in health care, it is of some interest to learn more about how these practices and clinics are implementing the program in ways that allow them to self-fund.

METHODS

To collect the data for this study, we prepared an interview guide, identified operating Healthy Steps sites, and interviewed available staff. Finally we reviewed and analyzed the data. We started with lists of sites that were active in 2007 and then acquired the names of additional sites that had trained after 2007. We contacted all identifiable sites by e-mail or telephone, and we were able to develop a list of currently operating sites. Sufficient travel funds existed to interview sites in 10 communities. The sites where in-person interviews were conducted were selected to meet several goals. We wanted to be able to meet personally with some of the self-funded sites, to take advantage of the most sites that were available for in-person interviews, and to travel to communities of interest to funders. Staff at 28 of the 50 known Healthy Steps sites were interviewed in person and the others by telephone. One site was confirmed as participating in Healthy Steps but

did not participate in interviews; no data about this site is included in this report. Telephone interviews took 30 to 40 minutes, while in-person interviews ranged from one and a half to three hours, and covered topics beyond Healthy Steps. Respondents were Healthy Steps Specialists, physicians, administrators, and occasionally other staff who wanted to sit in on in-person interviews or who were asked to provide specific data.

EVOLUTION OF HEALTHY STEPS FOR YOUNG CHILDREN

At the Start

Healthy Steps for Young Children was initiated in response to findings from a growing body of research studies and program innovations documenting the importance of the earliest stages of human development to good health, later life learning, and overall positive mental health and developmental outcomes. Advances in neurobiological, cognitive, and behavioral research have led scholars and practitioners to place greater emphasis than ever on the quality of a child's early experiences. Specifically, caregiving approaches during the early years, including talking and sharing books, cuddling, smiling, and otherwise responding to and interacting with infants and toddlers, have been shown to have a profound effect on emotional development, learning abilities, and the way the child functions in later life.[1]

Healthy Steps represents a new approach to primary health care for infants from birth to age 3, providing child development information and support to parents and other caregivers regarding their child's health and development.[2] Developed by The Commonwealth Fund and the Boston University School of Medicine Department of Pediatrics, and cosponsored by the American Academy of Pediatrics, it has been supported nationwide by the Fund together with some 100 other local and national funders and health care providers. In 2003, the Robert Wood Johnson Foundation became the lead national funder and played that role through 2005.

As conducted by a team from the Johns Hopkins Bloomberg School of Public Health, the evaluation of Healthy Steps involved six random assignment and nine quasi-experimental sites. (Thus, during its evaluation phase (1996–2001), the program was a protocol-driven controlled trial.) The key component of the program is the addition to a pediatric or family medicine practice of a Healthy Steps Specialist, a midlevel professional with expertise in child development who delivers many of the program's components. The specialist also serves as a link between the members of the clinical team and the child and her family. The specialist is trained through the Healthy Steps program, as are the medical and administrative staff.

Components of Healthy Steps During the Evaluation Phase

- Staff offers enhanced well child care through well child office appointments where parents can get answers to questions about child development and take advantage of "teachable moments."
- Healthy Steps Specialists make home visits at key developmental points.
- Healthy Steps Specialists staff a child development telephone information line.
- Staff provides child development and family health checkups, with screens to detect signs of developmental or behavioral problems, identify family health risks, and provide teachable moments.
- Staff provides parents and families with informational Healthy Steps materials.
- Parent groups offer social support as well as interactive learning opportunities.
- Staff provides links to community resources and facilitate parent-to-parent connections.

Post-Evaluation Spread

In 2001, as the data collection phase of the evaluation was ending, it became clear that additional practices wished to offer Healthy Steps. Healthy Steps managers decided to assist practices by providing training, technical assistance, and post-implementation support. The managers also decided to offer sites flexibility so that they could implement Healthy Steps in ways that deviated somewhat from the original protocols but that were most consistent with the site's practice methods, patient population, and resources. For instance, since home visits, however valuable, are not traditionally part of residency training programs, residency training sites are not required to offer that component.

For a pediatric care practice to call itself a Healthy Steps site, the following conditions must be met:

- Clinical and administrative staff time is dedicated for attending Healthy Steps trainings.
- A Healthy Steps Specialist is employed full-time, or nearly full-time.
- Healthy Steps services are provided in tandem with the provision of primary pediatric care.
- Developmental screening is performed, along with necessary referral services.
- Home visiting services are available.
- There is a fully staffed telephone hotline for child development information.
- The site offers Reach Out and Read or an equivalent early literacy program.

- The site makes Healthy Steps reading materials, or their equivalent, available to participating families.

One of the factors that led to the spread of Healthy Steps has been the professional literature that developed around the program, particularly the national evaluation findings.[3] The main findings were published in the *Journal of the American Medical Association* by the Johns Hopkins study team in 2003 (see box).[4]

Healthy Steps National Evaluation Findings

AT AGE 3
(From the *Journal of the American Medical Association,* Dec. 17, 2003)

Compared with families receiving traditional care, Healthy Steps mothers are more likely to:

- use positive health practices, such as ensuring that infants sleep on their backs (infants who sleep on their stomachs are at greater risk for sudden infant death syndrome)
- discuss feelings of depression and anxiety with someone in the child's medical practice
- interact with their toddlers in a more positive manner and pay more attention to their child's cues
- use more positive and less harsh discipline strategies (i.e., avoid yelling, threatening, slapping, or spanking their children)

Healthy Steps children are more likely to:

- receive regular developmental screenings
- be up to date on vaccinations by age 2
- continue to receive care at the practice through the first two years of life (continuity of care is important to health)

"What is important about Healthy Steps . . . is that it provides important evidence that by changing the structure and process of pediatric care, one can significantly improve performance in the delivery of pediatric developmental services." — Neal Halfon, M.D., and Moira Inkelas, Ph.D., *Journal of the American Medical Association*

FOLLOW-UP AT AGE 5½
(From *Pediatrics*, Sept. 2007*)*

Compared with families receiving traditional care, Healthy Steps mothers are more likely to:

- be satisfied with the care their children were getting (such as extra support from the pediatrician)
- receive needed anticipatory guidance
- remain in the original practice
- report problems to someone in the practice
- read to their children
- use alternatives to severe discipline like slapping or spanking with an object

"Universal practice-based interventions can enhance quality of care for families with young children and can improve selected parenting practices beyond the duration of the intervention." — Cynthia Minkovitz, M.D. et al., *Pediatrics*

The evaluation found that Healthy Steps families were more likely than control families to practice safer and more responsive parenting, avoid harsh disciplinary tactics, and openly discuss feelings of sadness with a health care professional. Given the importance of feeling loved and safe to a child's healthy development, these findings are powerful indicators of Healthy Steps' highly desirable effects on parental behavior. The study also reported that Healthy Steps children received regular developmental screenings and were more likely to have current immunizations.

Even more impressive, researchers followed Healthy Steps children to age 5 and a half and found that families continued to use more appropriate disciplinary methods and to remain more sensitive to the child's behavioral cues. Parents tended to remain in Healthy Steps practices, ensuring continuity of care.[5]

Healthy Steps is considered an evidence-based early childhood program by U.S. government agencies such as the Substance Abuse and Mental Health Services Administration (SAMHSA). As a result, organizations engaging in SAMHSA grant competitions to develop and provide services to young children can use Healthy Steps as a program model. At the time of this writing in spring 2010, the city of Boston has been awarded significant funds (in excess of $9 million for five years) for the development of programs with elements of Healthy Steps at their core. For example, Boston Medical Center has been awarded a grant to use Healthy Steps to prevent child abuse during the first six months of life. In a controlled trial, this effort will use a Healthy Steps Specialist to help families assess and address their stress levels so as to avoid child abuse. In Illinois, the state agency implementing SAMHSA's Project Launch engages Healthy Steps consultants from Advocate Health Care to train 19 sites in Healthy Steps topics, including "Gauging a Child's Development," "Family Factors Affecting Children," and "Supporting Families." These activities grew out of the Advocate Health Care Healthy Steps group's development of the Enhancing Developmentally Oriented Primary Care program (developed jointly with the Illinois Chapter of American Academy of Pediatrics), which has spun off aspects of Healthy Steps to scores of pediatric practices and clinics that would like to provide some of the services provided in a traditional Healthy Steps practice.

The reasons clinic leaders cite for wanting to offer Healthy Steps, especially quality of care and increased patient satisfaction, are consistent with most facilities' program goals; the most common reasons given are shown in Exhibit 1. Residency training sites that are implementing Healthy Steps cite improved quality of residency training, added program structure, and opportunities for residents to connect with the

families they would typically otherwise have little contact with in a busy continuity clinic. A few sites with Healthy Steps in their residency training curricula believe that including Healthy Steps helps them recruit residents to the program. Interestingly, the next three most common reasons staff valued Healthy Steps—saving physician time, adding revenue and patients—have to do with increasing practice revenue. Saving physician time per visit allows for increased visits in the same amount of time, leading to increased revenue. Self-funded sites frequently report increased provider revenue as one of their reasons for offering Healthy Steps.

Exhibit 1. Reasons for Offering Healthy Steps

Reason	Sites	Percent of sites
Quality of care	35	71.4%
Patient satisfaction	32	65.3%
Enhance residency training	15	30.6%
Save physician time	9	18.4%
Add revenue	8	16.3%
Add patients	5	10.2%
Differentiator of practice	1	2.0%

Source: Healthy Steps site study.

Healthy Steps was developed as a universal program thought to be applicable to and needed by families across the socioeconomic spectrum. The evaluation sample was nationally representative by income, race, and education, and its findings supported the original goal of implementing the program with a broad spectrum of children and families. Similarly, nearly all Healthy Steps physicians and specialists report that Healthy Steps is equally beneficial to families of all socioeconomic levels. However, as Healthy Steps was broadly disseminated, funders (typically philanthropies and state and local agencies) began to want to see the program implemented particularly with low-income or otherwise disadvantaged children; this is a group for which it has been particularly established that early childhood education has tremendous impact on future success. Hence, Healthy Steps' population is now largely, but not exclusively, low-income.

Since 2001, when the national evaluation period ended, and especially since 2007, Healthy Steps has operated with quite limited and continually declining resources. The Healthy Steps Web site continues to be available and the Healthy Steps Training and Technical Assistance Team at Boston University is available to assist practices interested in exploring Healthy Steps and to provide training. The program, however, has made very little effort to solicit new sites or to disseminate information about the program. In that context, the growth of Healthy Steps is perhaps even more impressive.

COST OF OPERATING HEALTHY STEPS

When potential new Healthy Steps sites contact the national program office, one of the first questions asked is how much it costs to implement the model. As seen in Exhibit 3, compensation for Healthy Steps Specialists makes up an average of 81 percent of the total cost of operating a Healthy Steps site (compensation is salary plus fringe benefits, typically about 25 percent of salary). Average Healthy Steps Specialist compensation is $77,520; the median is $62,500. Compensation ranges from $29,800 to $107,500. Other Healthy Steps program costs include materials, transportation, and equipment (e.g., cell phones, computers), which aggregate to a median of $3,000. Combining the medians for Healthy Steps Specialist and non–Healthy Steps Specialist expenses yields a total median cost of about $65,500 for a site with one Healthy Steps Specialist.[6] At the median, specialist compensation is about 95 percent of total cost.

Exhibit 2. Healthy Steps Operating Costs

Cost source	Average cost per site	Percentage based on average	Median cost per site
Specialist compensation:	$77,520	81.0%	$62,500
Salary	$62,142	65.0%	$50,000
Benefits	$15,378	16.0%	$13,104
Nonspecialist compensation costs	$18,150	19.0%	$3,000
Total costs	**$95,670**	**100.0%**	**$65,500**

Source: Healthy Steps site study.

FUNDING HEALTHY STEPS IN CHALLENGING TIMES

As has been noted above, funding remains the primary, if not sole, reason that sites have had to discontinue their Healthy Steps programs. To understand the dynamics of how sites fund their individual programs, it is important to understand how the Healthy Steps program overall is funded.

As indicated in Exhibit 3, Healthy Steps is funded largely from one or more of three sources: philanthropy, state and local government funds, and the sites themselves, referred to as self-funding. A few sites receive funds from a combination of sources (13 sites from two sources and three sites from three sources). During its evaluation phase, Healthy Steps was funded solely by private philanthropy, which remains a significant source of support (30 percent of sites receive some or all of their funds from philanthropy).[7] Over time, alternative sources of financial support have been developed, perhaps the most interesting being funding by the Healthy Steps practices themselves; 19 practices self-fund Healthy Steps in whole or part. The median contribution is $50,000,

ranging from $337,000 by a teaching hospital to $4,500 by a sole practitioner in a sparsely populated rural area.[8] (In most of the self-funding cases, the contribution to Healthy Steps is part of the institution's budget and formally subject to the annual budget process.) Two sites that are currently funded by philanthropies had for several years been self-funded. Most sites are continually seeking outside funding which, when it becomes available, replaces the internal funding. One of the three Healthy Steps sites about to begin operations is self-funded. This is a second site of a large hospital that serves a very needy population and whose first site is foundation-funded. This hospital believes that Healthy Steps enhances care that in the long run will benefit patients as well as the hospital.

Exhibit 3. Distribution of Funding by Source

Funding type	Number of sites	Percent of sites
Philanthropy	21	32.3%
Self-funding	19	29.2%
State/local funds	19	29.2%
Other	6	9.2%
Grand total	**65**	**100.0%**

Source: Healthy Steps site study.

At three of the self-funding Healthy Steps sites, the Healthy Steps Specialist facilitates physician billing that will generate income. This situation works as follows. Typically, the physician would spend 18 minutes per well child visit. Because the Healthy Steps Specialist performs part of the well child visit (that focusing on behavior and development), the physician need spend only 12 minutes on the typical visit. Accordingly, for every three well child visits with Healthy Steps families, the physician can see one non–Healthy Steps family (or 1.5 Healthy Steps families). For this scenario to be tenable, there must be sufficient local patient volume necessary to fill the newly created well child visit slots, and the physician must be willing to see the additional patients. One Healthy Steps physician reports that this substitution of Healthy Steps Specialist for physician time generates about $110,000 in added revenue, which significantly exceeds the total cost of Healthy Steps to this practice. Healthy Steps Specialists have contributed to practice revenues in a number of other ways as well: At one site, a Healthy Steps Specialist established a walk-in clinic for mothers of newborns, an innovation credited with significantly increasing the flow of patients to the facility.

Of interest is the extent to which the managers and physicians appreciate the implications of self-funding Healthy Steps in terms of how those funds might otherwise

be used. Most commonly, interviewees reported that if they were not funding Healthy Steps, they would be using the funds to hire additional staff. Other respondents said they would be purchasing equipment or increasing physician and nurse compensation. Most respondents said that even though they were clear on things they might do with the Healthy Steps funding, the issue never came up for discussion because the program was considered too valuable to discontinue for any reason other than a major budget crisis.

In the last five years, two jurisdictions—Dade County, Florida (Miami and Miami Beach) and the state of Arizona—have passed referenda authorizing dedicated taxes for trust funds to support programs for children. Dade County passed an increase to the county property tax and created The Children's Trust, which currently funds five Healthy Steps sites; two implementations are offered at two sites of a federally qualified health center in Miami Beach, and three are at practices and clinics associated with the Miller School of Medicine at the University of Miami. The property tax originally passed by a two to one vote, but in the statutorily required revote after five years, 83 percent of voters supported the tax. The fact that this self-imposed property tax increase was so overwhelmingly supported during a steep recession suggests another alternative for how to fund programs for children and also suggests that anti-tax sentiment may not be as widespread as assumed when the taxes are used for something voters value. In Arizona, an additional 80-cents-per-pack tax on cigarettes was voted to support First Things First, a statewide program covering a variety of services to children. At present, First Things First supports eight Healthy Steps sites and another is being developed.

Other Healthy Steps implementations funded in part by state or local funds include county-based clinics and facilities supported by state Medicaid funds that provide incentive payments for quality enhancements. However, the fiscal crisis now affecting states and municipalities around the country has not missed Healthy Steps. Two county-funded programs in Oklahoma perceive themselves to be in great peril,[9] and The Children's Trust has lost millions of dollars as the property value base of the tax has fallen; Dade County, though, is committed to supporting Healthy Steps.

Over time, foundations that had been funding Healthy Steps tend to end their support—as funding cycles end and funding priorities change—while new ones join the program. In most cases, managers of new Healthy Steps sites seek foundation support, but on occasion a foundation seeks out the program. For example, a foundation in the Midwest approached both the national Healthy Steps program and local health care providers, and that foundation's leadership helped to develop and currently supports three sites.

Other interesting sources of support exist. For nearly 10 years, Healthy Steps and Parents As Teachers (PAT, a national, intensive home-visiting program) have had a partnership in Kansas City, Kansas, under which PAT provides support for roughly half of the Healthy Steps Specialist's salary. Over time PAT and Healthy Steps management have discussed ways to expand the partnership, but thus far to no avail. The limited resources of the Healthy Steps national program office and the state-level management of PAT have contributed to the inability to achieve what both parties have considered a natural fit.

A final, and in some ways very interesting, source of support is direct reimbursement for Healthy-Steps-related services by third-party payers. The Achilles heel of Healthy Steps has always been funding. The program is by design a part of the pediatric care delivery system, and it provides services that are considered essential to quality pediatric care. Reimbursement from private and public insurers would seem the natural solution to the funding problem, but this is not as straightforward as it might seem to be.[10] Briefly, the hurdles to successful reimbursement for Healthy Steps include:

- Among nonphysicians, reimbursement is typically only available to registered nurses (RNs), licensed clinical social workers (LCSWs), and a few other mental health professionals, but *not* to people with degrees in child development, education, psychology, or social work (without a license); these are fields that provide a large number of Healthy Steps Specialists.
- Some Healthy Steps services, such as home visits, are not billable in most situations.
- Key Healthy Steps services such as developmental screening are often bundled with other preventive care services and reimbursed in one lump sum. Despite the fact that the service might not have been provided without the Healthy Steps Specialist, separate, additional reimbursement is usually unavailable.

From time to time, state Medicaid programs have provided support to local Healthy Steps sites. This occurred in Iowa and North Carolina, and Medicaid managed care funds are currently helping to support a Healthy Steps site in Kansas City, Kansas. And, despite the obstacles, there is some reimbursement available for Healthy Steps services:

- Five sites bill CPT Code 96110 for developmental screening under the physician's billing number; reimbursement amounts are $7.32, $16, $25, or $37 per screen.

- One site uses CPT Code 99350 for Healthy Steps Specialist home visiting, and bills the state Medicaid program using the physician's billing number. Reimbursement is $148 per visit.
- A Healthy Steps Specialist at one site serves as an early intervention provider for a local agency and is reimbursed $60 per visit.
- In Illinois and Ohio, Medicaid provides bonuses to physicians' offices that achieve certain developmental screening goals (in Illinois, $20 per child if 25 percent of patients are screened) or goals for immunizations and well child visits.

The life of a Healthy Steps site is precarious, depending as it does on consistent sources of funding in a health care environment in which revenues are continually being squeezed as costs rise. For example, at one clinic that has been supporting Healthy Steps with external funds, a 2009 budget squeeze caused the layoff of one physician and one RN, and a 10 percent across-the-board salary cut. Of the existing sites for which we have data on length of funding, three-fourths are funded through some or all of this year (2010). This is not atypical: most programs expect to be refunded, and 17 percent of sites are already funded through 2013 or beyond. A few, however, wait anxiously.

This study was conducted in the winter and spring of 2010. The effects of the "Great Recession" and attendant cuts in both employer-sponsored health insurance and state and local government spending on health is palpable. Providers report increases in patients seeking Medicaid and in the number of patients with no insurance coverage, both phenomena likely resulting from unemployment or reductions in employer-sponsored health insurance. This situation will surely worsen as the economic stimulus programs of 2008–09 are phased out and federal Medicaid funds are reduced before new health care reform funds begin to be disbursed. In addition, the uncertainty regarding how the federal government will ultimately deal with the required 21 percent reduction in physician Medicare payments has caused tangible uncertainty and stress to several practices.

A PROFILE OF EXISTING HEALTHY STEPS SITES

Since 2001, new Healthy Steps sites have been opening regularly, with the number of sites reaching more than 60 in 2007 and 2008. At the same time, the financial difficulties discussed above have caused many facilities to cease offering the program, so that currently there are 50 Healthy Steps providers. Among the active implementations, four are at private pediatric practices and one is at a family medicine practice; there are a total of 17 programs operating out of FQHCs or other safety-net clinics, eight hospital-affiliated clinics, and 16 on-site hospital clinics. Four clinics fell into our "other" category, one operating out of an HMO and the other three operating as "community-

based." These three programs are at sites operated out of a medical facility or community organization, from which the Healthy Steps Specialist can accompany patients to their physician's office. This model allows families in areas with widely dispersed populations who are treated by a large number of physicians to receive Healthy Steps services. There are also 20 Healthy Steps implementations in pediatric and family medicine residency training programs across all facility types, although most are based in on-site hospital clinics.

New sites are regularly joining the program—three will begin operations over the next few months. Other sites have not been able to sustain the cost of the Healthy Steps Specialist's salary, and have had to discontinue the program; recently, more facilities have been leaving the program than joining. Virtually all sites that have ceased to employ a Healthy Steps Specialist report significant positive practice changes in communication and teamwork, and a stronger focus on child behavior and development, even after the specialist has left the clinic. As one respondent put it, "we try to do everything we used to do, but we don't have a Healthy Steps Specialist."

Healthy Steps Services Offered

As noted earlier, Healthy Steps evolved to provide a set of core program elements that would be central to Healthy Steps but would be adaptable to the needs and circumstances of individual facilities. We have observed that, at some sites, patients did not use certain of the required Healthy Steps components that the clinics had offered initially. In particular, many patients have not taken advantage of home visits or the telephone information line, and some staff suggested that the significant numbers of undocumented immigrants being served at safety-net clinics may be reluctant to allow strangers into their homes.

Exhibit 4 presents the number of sites that offer each component of Healthy Steps. Thirty-eight sites provide home visiting (which, again, is not required of the 20 residency training sites), and all sites provide developmental screening.[11] The most widely used screen, the Ages and Stages Questionnaire is used at 38 sites; nine sites use Denver Developmental Materials Test II, and seven use the Parents' Evaluation of Developmental Status. Twenty sites give the Modified Checklist for Autism in Toddlers at 18 months, and 15 sites use the Edinburgh Postnatal Depression Scale to screen for postpartum depression.

Exhibit 4. Healthy Steps Components Currently in Use

Component	Number of sites
Home visits	38
Developmental screening	49
Enhanced well child visits	49
Written materials	46
Telephone information line	41
Parent support groups	24
Links to community resources	48

Source: Healthy Steps site study.

Exhibit 5 shows the cumulative number of Healthy Steps components offered at all active sites on which we had data; notably, 34 sites offer either all or all but one of the program components (counting an early-literacy program as a component). As discussed above, Healthy Steps managers did not require that the original design be maintained as the program expanded beyond the original evaluation sites. Nonetheless, the number of sites offering more than the minimum number of components is impressive.

Exhibit 5. Cumulative Number of Components Offered

Number of components	Number of sites
8	19
7	15
6	11
5	4
Total	**49**

Source: Healthy Steps site study.

Populations Served

Today the overwhelming majority of Healthy Steps families served—about 81 percent—are judged to be low income by site personnel. Health insurance coverage parallels the income status: the (patient-weighted) average Medicaid prevalence across sites is 74 percent, with another 8 percent of patients uninsured; across all sites, 17 percent of patients have private insurance. Another indicator of the types of populations served is the number of languages clinic clientele use; this information was roughly estimated by interview respondents based on their clinical experience. Nearly one-third of respondents reported needing English and Spanish to communicate with their patients, and nearly as many sites report serving patient families who use five or more languages. Right now, the

facilities use translators and translation services, but several medical facilities in heavily Hispanic communities are moving as quickly as possible to have fully bilingual and bicultural clinical staffs; this move represents a significant shift from 1996, when the author began visiting sites and bilingual clinicians were rare.

Medical Practice Types

Exhibit 6 shows the types of practices that implement Healthy Steps. The 15 on-site hospital clinics are residency training facilities, with four of the other five residency training sites located in hospital-affiliated and safety-net clinics (one program is in a private practice). Two of the current Healthy Steps training programs are directed by attending pediatricians who trained at Healthy Steps residencies. These two programs are self-funded, suggesting a self-sustaining Healthy Steps training system for physicians.

Exhibit 6. Healthy Steps Sites by Practice Type

Practice type	Total
FQHC/safety-net clinic	17
On-site at hospital/medical center	15
Hospital-affiliated clinic	8
Private practice	5
Other (community-based)	4
Grand total	**49**

Source: Healthy Steps site study.

Healthy Steps is offered at 17 federally qualified health centers and similar safety-net facilities, and there are five traditional private practices offering the program. This lower representation of private practices reflects the preferences of both philanthropies and state and local authorities for funding providers who are most likely to serve low-income patients. In fact, the five private practices (which tend to serve more affluent patients) are largely self-funded, and three have been able to provide Healthy Steps for nine years or more. Three of the practices in the "other" category are community-based and one is based in an HMO; the HMO implementation dates from the program's second round of evaluations and makes maximum use of telephone contacts with large numbers of families. Nearly three-fourths of Healthy Steps practices are pediatrics-based and 14 percent employ both pediatricians and family physicians; about 12 percent of sites are family practices.

One thing that was clear across all sites, both in this study and a previous one, is that a successful, sustainable Healthy Steps implementation requires a facility champion—someone with a strong early childhood knowledge base, an understanding

that early childhood experiences definitively impact adult health and mental health, and a commitment to making early childhood development an integral part of primary pediatric care.[12] The champion, by definition, has the drive and fundraising ability to see the Healthy Steps vision become and remain a reality.

THE HEALTHY STEPS SPECIALIST

The Healthy Steps Specialist is generally thought of as the central feature of the model and the "glue that holds everything together." This is as true today as it was a decade ago when Healthy Steps was being intensively studied. The education and fields of the 65 Healthy Steps Specialists for whom we have complete data are shown in Exhibit 7.

Exhibit 7. Healthy Steps Specialists by Education Level and Field

Education level	Field						
	Child development	Education	Nursing	Psychology	Social work	Other	Grand total
A.A.	1					1	**2**
B.A.	1	7	7	3	2	4	**24**
M.A.	8	4	3	2	13	2	**32**
Ph.D.				3			**3**
Other						4	**4**
Grand total	**10**	**11**	**10**	**8**	**15**	**11**	**65**

Source: Healthy Steps site study.

Healthy Steps Specialists are highly educated and relatively evenly spread among the fields of child development, education, nursing, psychology, and social work. The last is the modal field, with nearly all social workers having a master's degree in social work (M.S.W.). Note, however, that an M.S.W. is an academic degree and is not the equivalent of L.C.S.W., a state license that is often required for reimbursement by third-party payers.

Exhibit 8 shows the length of time specialists have been in their positions; not all specialists reported their tenure. As is evident, the tenure of Healthy Steps Specialists is impressive, particularly given that 43 percent of sites are less than four years old. About one-third of Healthy Steps Specialists have been on the job for more than five years. Nearly 70 percent of Healthy Steps Specialists work full time and most of the remainder nearly so. Finally, 12 Healthy Steps Specialists are reimbursable, using the codes discussed earlier. Looking at the fields of the Healthy Steps Specialists makes it easy to see the problem with reimbursement. Among providers who are not physicians or nurse practitioners/physician's assistants, only psychologists and, sometimes, L.C.S.W.s and R.N.s are reimbursable in most instances. Few Healthy Steps Specialists are R.N.s, and

few of the social workers are L.C.S.W.s, creating the situation that the work being done is not reimbursable.[13]

Exhibit 8. Healthy Steps Specialist Tenure

Years of tenure	Number of Healthy Steps Specialists	Percentage
<1	9	18%
1	11	22%
2–4	14	28%
5–9	8	16%
10+	8	16%
Total	50	100%

Source: Healthy Steps site study.

HEALTHY STEPS IN A REFORMED HEALTH CARE SYSTEM

Perhaps the most significant event in health care policy since the 1960s was the passage of the Affordable Care Act in March 2010. Over the next few years, health care reform is expected to achieve significant increases in coverage of the uninsured and make major changes in the health care marketplace. Of most relevance to Healthy Steps, health reform seeks to make major changes to practice patterns, while increasing prevention and the provision of primary care.

Designers of the reform hope that delivery system changes will flow from the continuing demonstration and development of innovations like payment bundling, accountable care organizations, pay-for-performance, and the widespread implementation of the patient-centered medical home. These processes will require cooperation and teamwork among physicians, hospitals, and other providers who thus far have inadequately done so. New incentives for cooperation will be provided.

Healthy Steps is built on the notion of communication and teamwork. While Healthy Steps has, to be sure, not had to solve the vexing issue of sharing revenue among physician groups, or the technical challenges of communication among disparate parties, it has, with proven success, integrated midlevel professionals into primary care while enhancing patient satisfaction and clinical outcomes. Healthy Steps has been a model for successful change in pediatric primary care achieved through team-based multidisciplinary training. Therefore, within pediatrics and family medicine, across the demographic spectrum, Healthy Steps could readily serve as a model for the delivery of high-quality, team-based pediatric care.

Similarly, as new FQHCs are developed and existing ones grow, the 17 FQHCs and other safety-net providers offering Healthy Steps can serve as models for the organization and delivery of services to underserved populations. The Bureau of Primary Health Care within the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services could take advantage of these FQHCs to serve as leaders in learning collaboratives and technical assistance providers for safety-net clinics that have not offered team-based preventive care. The Healthy Steps philosophy and the program's operations fit similarly well with the community-based collaborative care network program included in health care reform. Elements of Healthy Steps, particularly its ability to achieve practice change through team-based training, could be adapted for use in Medicaid demonstration projects.

Given how Healthy Steps both requires and demonstrates the value of the kinds of patient-centered, cooperative health care delivery systems that health care reform embraces, the more Healthy Steps pediatricians and family physicians there are the better. In their training, these physicians observe the value and operational efficiency of the Healthy Steps Specialist. They could become the vanguard for the practice patterns that are needed—imagine a new generation of physicians who want to practice in a team-oriented, patient-centered way. Accordingly, expansion of Healthy Steps to other residency training programs would be a valuable way to ensure that pediatric care meets the requirements of health care reform.

A first step in this direction would be for HRSA's Bureau of Health Professions and its Children's Hospital Graduate Medical Education program to provide information, technical assistance, and even financial incentives to non-Healthy Steps residencies to adopt the program in whole or part. The Healthy Steps Web site (www.healthysteps.org) provides extensive information and contacts and several examples of how Healthy Steps is used in residency training. The Healthy Steps Training and Technical Assistance Team at Boston University School of Medicine could play a significant role in the organization and presentation of the rollout of Healthy Steps in residency training. This team would be ably supported and extended by physicians and Healthy Steps Specialists in residency training programs across the country that have been operating Healthy Steps sites and training others to do so. These individuals are highly committed and the combination of the Boston University technical assistance team and Healthy Steps-trained residency training staff would immediately provide a highly committed cadre ready to develop and spread the necessary training and technical assistance.

Health care reform seeks to make widespread the implementation of the patient-centered medical home, a health care setting that provides comprehensive care through a partnership of patients and their families with physicians and other staff. Healthy Steps' whole-child, whole-family approach, and the close relationship between practice and family that it fosters, is highly consistent with the medical home model. Indeed, of the current 50 Healthy Steps sites, six are in the process of formally becoming medical homes, 11 are in the discussion or planning stage, and another seven consider themselves to be a medical home. The existing health care reimbursement system does not provide payment based on the kind of quality enhancement provided by Healthy Steps, but under the Affordable Care Act it will be possible to receive support for training and implementation associated with medical homes, and state health plan exchanges will have incentives to encourage the implementation of medical homes; there will also be grants to community health systems for the same purpose. As a result, it may be that the Healthy Steps model combines with the patient-centered medical home to secure reimbursement for the high-quality care Healthy Steps delivers.

The Affordable Care Act also seeks to increase the amount of home visiting and in general to enhance the quality of maternal and early childhood health care. Clearly, Healthy Steps has much to offer in this regard. The extent to which Healthy Steps can serve as a model for the funds appropriated in this area will depend on the decisions made by the government regarding the details of allowable program design.

CONCLUSION

Healthy Steps for Young Children was initiated to develop a primary pediatric care intervention that provided a clinically proven, evidence-based model to increase the quality of care while enhancing patient and provider satisfaction. It has met and surpassed these goals. The evaluation phase ended with the extension of Healthy Steps to new sites, even as original sites could no longer participate. Ten of the original 15 evaluation sites had to discontinue Healthy Steps because of lack of funding, but the other five still operate, and 45 more have opened since the evaluation ended. Newer sites were given the flexibility to offer only some of the model's components if others did not fit the practice's or clinic's overall care delivery program.

Funding for Healthy Steps is uncertain, and many sites are eventually unable to sustain the Healthy Steps Specialists' salaries, which comprise nearly all of the program's overall cost. But the fact that 40 percent of Healthy Steps sites are self-funded in whole or in part indicates that the program can operate even in difficult economic times when outside funding is all but impossible to obtain. Ultimately, however, Healthy Steps

cannot grow to scale without funding from the health care system, which is just beginning to be available. It remains to be seen whether the formal health care delivery system of the United States will support Healthy Steps in the long term, but the fact that the program fits so naturally with the goals of health care reform as enacted offers some hope. Funding difficulties notwithstanding, the program continues to attract those who wish to provide quality pediatric care.

Medical practices seeking further information on Healthy Steps for Young Children may contact Margot Kaplan-Sanoff, Ed. D., national program director, at Sanoff@bu.edu and visit www.healthysteps.org.

NOTES

[1] J. P. Shonkoff and D. Phillips, eds., *From Neurons to Neighborhoods: The Science of Early Childhood Development* (Washington, D.C.: National Academies Press, 2000).

[2] B. Zuckerman, S. Parker, M. Kaplan-Sanoff et al., "Healthy Steps: A Case Study of Innovation in Pediatric Practice," *Pediatrics,* Sept. 2004 114(3):820–26.

[3] For a list of publications, see "Healthy Steps Peer-Reviewed Publications" at http://healthysteps.org/. In addition to professional literature, other channels through which practitioners learn of Healthy Steps include word of mouth and Healthy Steps mention in Bright Futures' material (see, for example: http://brightfutures.aap.org/pdfs/newsletters/BrightIdeas41.pdf).

[4] C. S. Minkovitz, N. Hughart, D. Strobino et al., "A Practice-Based Intervention to Enhance Quality of Care in the First 3 Years of Life: Results from the Healthy Steps for Young Children Program," *Journal of the American Medical Association,* Dec. 17, 2003 290(23):3081–91. See also, N. Halfon and M. Inkelas, "Optimizing the Health and Development of Children," *Journal of the American Medical Association,* Dec. 17, 2003 290(23):3136–38.

[5] C. S. Minkovitz, D. Strobino, K. B. Mistry et al., "Healthy Steps for Young Children: Sustained Results at 5.5 Years," *Pediatrics,* Sept. 2007 120(3):e658–e668.

[6] There is a wide range in cost for services not related to the Healthy Steps Specialist, because a few sites—typically hospitals and academic medical centers—allocate full managerial support labor and substantial overhead costs to Healthy Steps. Using the median tends to provide a useful cost number by avoiding this distortion, which is only relevant to certain types of organizations. Several sites report not breaking out their non-Healthy Steps Specialist costs, considering them donations. In such cases, based on the guesses of interviewees (which is roughly corroborated by sites for which we have data), we assigned a value of $2,000 annually for non-Healthy Steps Specialist costs.

[7] None of the original philanthropic funders is currently funding Healthy Steps, although four continued to provide support to the original site and/or to a new site at one time or another.

[8] Based on experience in collecting cost data during the Healthy Steps evaluation, it is not atypical for teaching hospitals to allocate significant management salary and overhead costs to Healthy Steps. The site whose cost and self-funding amounts are noted in the text is clearly an outlier even among the academic medical centers and hospitals in this study.

[9] Indeed, as this report was being edited, we learned that one of the Oklahoma counties ceased to fund Healthy Steps. The data on that site is still included in this report.

[10] For discussion of the funding problems faced by Healthy Steps, see M. C. Barth, "Reimbursement for Healthy Steps," June 19, 2007, at http://healthysteps.org/, Publications and Related Links, Healthy Steps Publications, Other Publications, accessed Aug. 3, 2010.

[11] American Academy of Pediatrics Committee on Children with Disabilities, "Developmental Surveillance and Screening of Infants and Young Children," *Pediatrics,* July 2001 108(1):192–95. Accessed July 29, 2010, at http://aappolicy.aappublications.org/cgi/content/full/pediatrics;108/1/192.

[12] M. C. Barth, "A Low-Cost, Post Hoc Method to Rate Overall Site Quality in a Multi-Site Demonstration," *American Journal of Evaluation,* March 2004 25(1):79–97.

[13] Given the range of fields of Healthy Steps Specialists, the question arises of whether those trained in different fields practice differently. While that was not a subject of this study or of the national evaluation, the anecdotal information on the subject has been consistent over time.

Individual Healthy Steps Specialists, as would be natural, emphasize their strengths, but all do so in the context of providing the core Healthy Steps services and information. In sites with specialists from different fields, there has typically been sharing of information and expertise (a form of cross-training), yielding two or more broadly based specialists.