NACOG Head Start and the UCLA/Johnson & Johnson Health Care Institute:

A Study of Health Care Savings

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May 14, 2007

This report was prepared by the Arizona Rural Policy Institute, Northern Arizona University, partially funded under award #07-66-05876 from the Economic Development Administration, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the Economic Development Administration or the U.S. Department of Commerce.

Executive Summary

In an attempt to combat health care illiteracy, Johnson & Johnson and University of California, Los Angeles' Anderson School of Management recently began working together in order to develop a method of training parents to diagnose and treat the routine ailments that afflict their children. The result, a program known as the Health Care Institute (HCI), has been implemented through various Head Start agencies across the country. Ten thousand families have undergone this training, and an estimated $4.5 million has been saved annually by families, hospitals, clinics, pediatricians, and insurers.

Head Start agencies send representatives to UCLA to learn the training methods of the HCI. Volunteers are then recruited from the ranks of current Head Start employees. These volunteers in turn recruit parents of Head Start children to participate in HCI training. They conduct pre and post training surveys of these parents to determine attitudes toward child care and the frequency with which their children visit health care facilities. Participating families are then brought together and taught to use a simple guidebook, which teaches them basic diagnosis and care of common and easily-treatable childhood health problems. Following the training, volunteers make three monthly home visits to each family. They gather information to determine how families' habits have changed, and to encourage the continued use of the guidebook.

The Northern Arizona Council of Governments (NACOG), headquartered in Flagstaff, is one of the Head Start agencies that have participated in the HCI. Eighty-six families from around the region were trained in Pinetop and Camp Verde. The overall impact of this program in Northern Arizona has been an annual savings of $15,810 in visits to doctors' offices and clinics, $9,155 in visits to the emergency room, and nearly $17,000 in wages. At a cost of about $121 per family, the HCI program in Northern Arizona has yielded a 402% return on investment.

Additionally, overcrowding of medical facilities has been somewhat lessened, parents are more confident in caring for their children (and experience fewer lost workdays), and children miss less school due to illness.

If this program were to be applied a larger population, the benefit to individuals, businesses, and government programs would be enormous. If it were applied to all 1800 NACOG Head Start families, monetary savings would be well over $500,000 per year.

In 2002, Johnson & Johnson teamed up with UCLA's Anderson School of Management and formed a program called the Health Care Institute (HCI), with the goal of helping parents meet the health needs of their children. The main objective of the HCI is training parents to use a medical reference book to help provide an initial diagnosis and subsequent home care of a sick child. The project has been a remarkable success, resulting in average savings of $447 per family treated per year. When applied to the 10,000 families treated to date, this figure suggests a total annual savings of nearly $4.5 million. These savings are derived from decreases in doctor visits, decreases in emergency room visits, and decreases in lost wages from work absences.

By training families to treat simple childhood ailments at home, the HCI has discovered a way to both relieve pressure on overcrowded medical facilities and to reduce the associated financial costs born by insurance companies, families, and governmental programs.

This report will provide a close look at the HCI program, as implemented by the Northern Arizona Council of Governments' Head Start program. It will hopefully serve as a blueprint for other groups that would like to experience similar results, as well as a point of departure for policy makers and health care professionals.

The UCLA/Johnson & Johnson Health Care Institute

The HCI was created over concerns about the low level of health literacy among the parents of Head Start children. The stated objectives of the HCI are as follows:

- To provide training and information to participating Head Start agencies for the successful implementation of health care literacy programs to their families.
- To enable Head Start parents to become better caregivers to their children by improving their health care knowledge and parenting skills.
- To empower Head Start parents to become better informed decision makers for the health care needs of their children.
- To enhance the self esteem and confidence of the Head Start parents in meeting their parental objectives.
- To actively contribute to the reduction of increasing health care costs in the United States[1].

In order to fulfill these objectives, the HCI trains Head Start workers on the UCLA-Anderson campus. It is then up to individual Head Start agencies to gather willing parents together for a one-day training. The training focuses upon the use of a medical reference guidebook entitled *What to Do When Your Child Gets Sick*, which provides information on over 50 common childhood medical issues. The book is written on an

[1] http://www.anderson.ucla.edu/x682.xml

easily-understandable third grade reading level. After the training, parents should be more able to deal with their children's common medical problems without the use of medical facilities and resources.

By using Head Start agencies for delivery of the trainings, the HCI has reached thousands of families since its inception. By the end of 2006, nearly 10,000 families from across the country had undergone the training, with positive results. On average, the primary care-giving parent in each family missed 42% fewer days of work due to a child's illness after completing the training. The children themselves missed 29% fewer days of school. Visits to doctors' offices and clinics by the trained families were reduced by 41%, and visits to the emergency room decreased by 58%[2].

Northern Arizona

The Northern Arizona Council of Governments (NACOG) was among the Head Start agencies that participated in these trials. Eighty-six families were trained by NACOG Head Start during one-day meetings held in Camp Verde and Pinetop. Of these, only three failed to complete the entire program.

NACOG followed the basic HCI formula. Five staff members attended initial training at UCLA where they were taught how to organize and execute the program in their home region. Current NACOG employees were then recruited as volunteers, and each convinced five Head Start families to enroll in the program. The volunteers visited the homes of each family during the month prior to training, gathering information and providing encouragement. Meetings were held in Camp Verde and Pinetop. Providing transportation proved to be necessary in order to maximize attendance. The staff members trained at UCLA explained the program in detail and taught participants to use the book through a series of learning exercises. The organizers provided numerous prizes and incentives that kept the process fun and interesting for all involved. A translator and audio headsets were provided for Spanish-speaking parents. Following the training, volunteers made three monthly visits to the participating families, encouraging them to use what they had learned, and collecting data on the changes that occurred.

Benefits of this program

Cost-Benefit Analysis
The cost of the program is small in relation to the benefits derived from it. Not only do the participating families save money, but numerous social programs, insurance companies, and health care organizations realize significant cost reductions. Additionally, the program lessens the burden on health care facilities. The initial NACOG program provides an excellent example of the proven cost benefit to rural Arizona.

[2] Health Care Institute Summary Report 2002-2006

The total return on the investment made by NACOG Head Start is estimated at 402% annually. The cost per family trained with the program was approximately $121, of which $50 was attributed to "incentives" that can be reduced or eliminated. For each of the successful trainees, about $505 was saved through medical services and wages. Nearly 97% of participants completed the program. Training 100 families at a time reduces the cost to $117, raising the return per family to 430%. If 95% of participants complete the program, total return would be nearly 408%

Costs

The return on the program depends on the way costs are allocated. Some, such as expenses associated with the initial training at UCLA, can be allocated according to the total number of families trained by a single agency over time. Other costs, such as facilities, transportation, and translation services, will vary depending upon the number and location of families participating in a specific training. Depending on such variables, the total estimated cost per family will be between $115 and $150.

Table 1 breaks down the cost of the program into its component parts. This table was compiled based on NACOG's initial 86-family sample. Many of these costs are rough estimates, and similar programs will differ widely based upon variable expenses.

Table 1 – Estimated Training Costs from NACOG's Initial 86-Family HCI Program

Cost	total cost		unit cost	per participant
UCLA Training	$ 172	Variable costs, depends on total participants in all trainings	$ 2	$ 2.00
Supplies	$ 860	Variable cost, depends on number of participants	$ 10	$ 10.00
Training Costs				
Spanish Head Sets	1,000	Fixed cost per training	1,000	11.63
Translator	60	Fixed cost per training	60	0.70
Translator Other	40	Fixed cost per training	40	0.47
Drivers	308	Fixed cost per training	308	3.58
Gas	60	Fixed cost per training	60	0.70
Food	1,462	Variable cost, depends on number of participants	17	17.00
Facilities	400	Variable cost, depends on number of participants	200	4.65
Total Training Costs	$ 3,330			$ 38.72
Incentives				
Raffles	300	Fixed cost per training	300	3.49
Parent Incentives	2,150	Variable cost, depends on number of participants	25	25.00
Trainer Incentives	722	Variable cost, depends on number of trainers	42	8.40
Awards	258	Variable cost, depends on number of participants	3	3.00
Incentive Points	258	Variable cost, depends on number of trainers	3	3.00
Site Incentives	602	Variable cost, depends on number of participants	7	7.00
Total Incentives	$ 4,290			$ 49.89
Home Visits	$ 1,484	Variable cost, depends on number of participants	$ 17.25	$ 17.25
Marketing	$ 300	Fixed cost per training	$ 300	$ 3.49
Total	$ 10,436			$ 121.35

Savings

Savings on direct care in medical facilities are estimated based on the results of NACOG's original study, and applied to cost estimates provided by Flagstaff-based health care providers.

Before the training, the average child visited the doctor .3072 times per month, and went to the emergency room .0656 times per month. After the training, doctor visits were reduced to .1851 times per month, a reduction of 40%. Emergency Room visits were reduced by 58% to .0273 times per month. Estimating the cost of a doctor visit at $130, each family trained would save $117 per year on visits to the doctor. Minimum emergency room (ER) cost estimates of $240 equal an annual savings of $147. Table 2 illustrates the savings on treatments through medical facilities.

Table 2 – Medical Treatment Cost Savings

Average Cost of Medical Treatment	
Estimated Cost Doctor Visit	$ 130
Estimated Cost ER Visit	$ 240
Average Monthly Visits	
Dr/Clinic pre-training	0.3072
Dr/Clinic post-training	0.1851
Dr/Clinic Difference	0.1221
ER pre-training	0.0656
ER post-training	0.0273
ER Difference	0.0383
Savings	
Monthly Dr/Clinic Savings	$ 15.87
Monthly ER Savings	$ 9.19
Annual Dr/Clinic Savings	$ 190.48
Annual ER Savings	$ 110.30
Total Annual Savings	$ 300.78

Together, these savings on the use of medical facilities add up to about $300 per child. During the first implementation of the program, when NACOG trained 86 families, all but three continued to participate. Annual savings realized through the remaining 83 families are estimated at $24,965. At clinics and doctors' offices, a total of $15,810 in charges was avoided. Unnecessary emergency room charges of $9,155 were also avoided.

Table 3 – Savings from Reduction in Office Visits

	monthly		
Doctor/Clinic	$ 15.87	yearly	sample (83)
ER	$ 9.19	$ 190	$ 15,810
Total	$ 25.07	$ 110	$ 9,155
		$ 301	$ 24,965

Savings in Lost Wages

Parents who participated in the HCI missed fewer days of work due to their children's illnesses. The NACOG study found that after training, parents missed an average of .49 days of work per month. This figure is 39% less than the .8 days missed before training, a benefit of .31 days of wages per month. Monthly earnings for a NACOG Head Start family average $1,192. Daily wages are calculated at $55, based on a 5-day work week. Wage savings can then be estimated at $17.01 per month. Over the year, the training will lead to saved wages of $204. These figures are broken down in Table 4.

Table 4 – Wage Savings

Wages	
Average Monthly Wages	$ 1,192
Average Work Days per Month	22
Average Daily Wage	$ 55
Monthly	
Days Missed pre-training	0.80
Days Missed post-training	0.49
Difference	0.31
Wage Savings	
Monthly Saved Wages	$ 17.01
Annual Saved Wages	$ 204.07

Total Monetary Savings from the program

Considering the three areas of savings identified above, the total annual return on NACOG's original trainings was nearly $42,000. Training 100 families would yield savings of about $48,000. The savings are illustrated in Table 5.

Table 5 – Total Savings of the Program

Per Family	
Dr/Clinic	190
Emergency Room	110
Wages	204
Total	**505**
95% success	$ 480
83 Families	
Dr/Clinic	15,810
Emergency Room	9,155
Wages	16,938
Total	**41,903**
100 Families	
Dr/Clinic	19,048
Emergency Room	11,030
Wages	20,407
Total	**50,485**
95% success	$ 47,961

As shown in Table 6, NACOG's $10,436 investment yielded an annual return of $41,903, a rate of 402%.

Table 6 – NACOG's ROI

83 Families	
Dr/Clinic Savings	$ 15,810
Emergency Room Savings	$ 9,155
Wage Savings	$ 16,938
Total Savings	$ 41,903
Cost	$ 10,436
ROI	402%

Who Saves with the Program?

The beneficiaries of medical cost savings are estimated using NACOG's 2006 insurance figures. Seventy-two percent of children served by Head Start during that year were covered by Medicaid. About 16% of the children had some other form of insurance and the remaining 12% had none.

By dividing the estimated savings from above among these insurance options, we can determine what total savings each group realizes. As shown in Table 7, Medicaid saved $17,926 due to the initial program. Other insurance programs saved $4,020, and $3,018 was either saved by the families or the medical facilities and aid programs that would otherwise have absorbed the costs.

Table 7 – Beneficiaries of Medical Facilities Avoidance

Beneficiaries		
Funding Source	% Covered	Savings
Medicaide	72%	$ 17,926.32
Other Insurance	16%	$ 4,020.33
Other	12%	$ 3,018.09
total	100%	$ 24,964.74

Non-Monetary Benefits

In addition to monetary savings, The HCI improves the lives of those involved in several ways. The children themselves miss less school due to illness. Parents gain a great deal of confidence in their own childcare abilities. Hospitals, clinics, and physicians spend less time treating simple and routine ailments.

School

The results of HCI training on school attendance is a 26% reduction in the amount of days missed. Before training, the average number of days missed per month was 1.58, and after training the number was 1.17. During a nine-month school year, children will miss an average of 3.69 fewer days due to their parents' new knowledge and skills.

Table 8 – School Days Gained After Training

	Days Missed Per Month			Days per Year
	Pre	Post	Difference	Annual (9 months)
School	1.58	1.17	0.41	3.69

Parental Confidence

Surveys filled out by parents before and after the training exhibit the increased confidence parents developed through this program. In the NACOG program specifically, parents were asked "When your child is sick, where do you first go to get help?" The percent who stated that they go first to the doctor decreased from 61% to 12%. The percent that first went to the emergency room reduced from 3.7% to 0%. The percent who reported first consulting a medical publication rose sharply from 5% to 77%. Similar results were reported in programs nationwide.

Overcrowding facilities

Health care providers from around Flagstaff offered up estimates of the number of visits they receive from children with conditions that would be better treated elsewhere. These facilities would benefit from a reduction in unnecessary visits in a number of ways.

Clinic

The North Country Community Health Center (CHC) serves the medical needs of residents of residents of Northern Arizona. Only two-thirds of the patients at the CHC are fully insured. The remaining third, either uninsured or underinsured, pay for their care on a sliding fee scale. The cost of medical care for the latter group is supplemented by the CHC with state and federal funds. In 2006, the CHC had roughly 60,000 patient visits at its 8 locations, roughly 13% of which were children under 12 years old. The main benefit that a reduction in visits to this clinic would provide is savings for insurance companies and for the clinic itself, which uses government grants to supplement patient fees.

Pediatricians

Pediatricians face substantial overcrowding in their offices. Particularly during the winter months, they can be overwhelmed by children with simple illnesses such as colds, coughs, and sore throats that can easily be treated in the home.

Mountain View Pediatrics of Flagstaff reports patient levels exceeding capacity nearly every week of the year. During winter, six to ten children are sent to the emergency room each week simply because the clinic cannot accommodate them. Of the roughly 700 children who visit the clinic in the average week, an estimated 30% are admitted for

conditions that are easily treatable at home. That works out to 210 unnecessary visits weekly, a number that easily rises to 270 during the winter.

Mountain View, which receives no federal funding of any kind and whose customer base is nearly 100% insured, would be eager to reduce the customer load, both in order to admit those who are in need of attention and to reduce stress on the staff.

Emergency Room
Emergency rooms routinely experience a high volume of unnecessary usage. As mentioned above, patient volume at Mountain View Pediatrics regularly forces a number of families to seek basic care for their children at the ER. Basic ER costs for children generally range between $240 for an ear infection, and $700 for a laceration, both of which would ideally be treated in the clinic or doctor's office. Unlike other sources of care, the ER is required to treat patients upon arrival, regardless of their ability to pay. When the ER is inundated with patients whose conditions are better treated elsewhere, the more urgent cases are less likely to receive care as quickly. Costs are also much higher than they would be at a clinic or pediatrician's office. Emergency rooms are often forced to absorb the costs of uninsured patients with non-emergency medical issues.

Theoretical Mass Implementation

The success of NACOG's initial project raises questions about the possibility of extending the HCI to a much larger group of people in Northern Arizona and statewide. If the process were applied to a larger population, could many more families receive this training, at a cost that would be more than justified by the enormous savings?

With over 1,800 families, NACOG Head Start will be used to illustrate the theoretical implementation of a large-scale training project.

Such limiting factors as parental apathy and problems with coordinating the participation of parents and volunteers require a conservative approach to how many families would participate. It will be assumed, then, that 80% of families can be trained. It will also be assumed that 95% of those trained will successfully complete the follow-up to the program[3].

By training 100 families at a time, this process would require 15 separate trainings. Nearly 1,500 participants would be reached. If we assume a 95% success rate, this project will benefit 1,397 families and over 2,800 children[4].

The NACOG region covers nearly one-quarter of the state and its families are geographically disbursed. This facilitates a revolving series of trainings that would take place on the first Saturday of each month. While the trainers themselves would travel

[3] Based loosely on the 83 successes out of 86 trained (96.5%) as demonstrated in the initial program.
[4] Based on an estimated 2.03 children per family.

from site to site in order to teach, volunteers unique to each area would recruit, survey, and follow-up with individual families for only their local trainings. Table 9 illustrates how five locations could be used to train 1,500 families in 15 months.

Figure 1- Number of Families Trained per Area per Month

		Area				
		A	B	C	D	E
Training Date	1-Jan	100				
	1-Feb		100			
	1-Mar			100		
	1-Apr				100	
	1-May					100
	1-Jun	100				
	1-Jul		100			
	1-Aug			100		
	1-Sep				100	
	1-Oct					100
	1-Nov	100				
	1-Dec		100			
	1-Jan			100		
	1-Feb				100	
	1-Mar					100

The commitment for the trainers would be one Saturday per month. Individual volunteers would recruit a new selection of families every five months. This spacing would allow ample time to convince new families to join the program and prevent volunteers from becoming overloaded with commitments.

Table 9 – Costs of Training 1,500 Families in 15 Separate Training Sessions

Training #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	total
UCLA Training	$ 216	216	216	216	216	216	216	216	216	216	216	216	216	216	216	$ 3,246
Supplies	$ 1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	$ 15,000
Training Costs																
Spanish Head Sets	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	15,000
Translator	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	900
Translator Other	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	600
Drivers	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	4,620
Gas	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	900
Food	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	25,500
Facilities	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	6,000
Total Training Costs	$ 3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	$ 53,520
Incentives		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raffles	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	4,200
Parent Incentives	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	35,000
Trainer Incentives	840	840	840	840	840	840	840	840	840	840	840	840	840	840	840	11,760
Awards	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	4,200
Incentive Points	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	4,200
Site Incentives	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	9,800
Total Incentives	$ 4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	$ 69,160
Home Visits	$ 1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725	$ 25,875
Marketing	$ 300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	$ 4,500
Total	$ 11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	11,749	$176,241

Table 10 assumes that each volunteer would be responsible for recruiting five participants. Twenty volunteers in each area would be sufficient. Because Head Start volunteers are current employees with other duties, five is a manageable number.

Table 10 – Annual Return on training of 1,500 families

Families Trained	1,500
Dr/Clinic Savings	$285,714
Emergency Room Savings	$165,456
Wage Savings	$306,105
95% Success Rate	$719,411
Rate of Return	408%

Table 11 lists the financial benefits of the mass training. In just 15 months, 1,500 families would be trained in child health care, and the cost savings would be four times the investment.

It should be noted that Head Start is a program with strong ties to the families it serves. Much of the success of this program comes from the rapport it has with parents. To follow this example, such trust and understanding is important. Learning materials, such as the book itself, must be written at the appropriate literacy level. For example, the book used by the HCI is written at a third-grade reading level, in order to accommodate readers of all backgrounds and abilities.

Conclusion & Further Examples

UCLA & Johnson & Johnson's Health Care Institute is a brilliant and successful approach to easing some of the burden on health care facilities, cutting costs for insurers and families, and empowering parents to care for their children. If widely deployed, these methods have the potential to improve the lives of many people and significantly reduce the operating costs of various healthcare-related businesses. Insurers, service providers, and government agencies could all benefit from further investigating the possibility of implementing a similar program.

Arizona Head Start

If Arizona's entire Head Start program were to follow the example set by NACOG, the savings would be substantial. Currently, an estimated 21,500 families are serviced by Arizona's 30 Head Start agencies. In terms of a statewide training initiative, this equals an average of 717 families per organization; this approach is justified by the assumption that organizations with fewer families can establish collaborative training cohorts, while larger organizations such as those within cities may require more than one. Under these assumptions, six monthly trainings conducted by each Head Start program could effectively reach 80% of the total population in half a year.

As in the NACOG estimates, trainers would train 100 families, once a month, in varying locations. The cost of training 80% of the total Head Start families would be $2,177,717. If 95% of those trained completed the program, the result would be an annual savings of

$8,258,836, a rate of return of 379%. This rate is less than the return to NACOG, because under the stated assumptions, fewer families would be treated in each area. Even so, this estimate of statewide savings should be an encouraging indicator of the potential for such a program.

The after-cost savings of this program would be over $6 million in the first year. Families would earn over $3.3 million in extra wages. Savings of $3.1 million in visits to clinics and doctor's offices, and $1.8 million in visits to the ER would benefit a variety of entities.

Table 11 – Financial Benefits of Training All Head Start Families

Total Savings	
Total Families	16,359
Dr. or Clinic	$ 3,115,997
Emergency Room	$ 1,804,463
Wages	$ 3,338,376
Total Savings	$ 8,258,836

Arizona Health Care Cost Containment System

Another potential population for HCI training is the Arizona Health Care Cost Containment System's (AHCCCS) Kids Care Program, with a current enrollment of 61,478 children. Since this program provides these children with medical coverage at little or no cost, it would benefit from offering HCI-style training to the families of these children. Historical figures suggest that the average household with children in the Kids Care Program has 1.65 children enrolled. This rate can be used to determine that 37,259 families have children in the program.

Following the previous assumption that 80% of a population would participate, roughly 30,000 families would be targeted. This would require 300 trainings, each serving 100 families. Twenty-five training "teams" could complete this goal in one year, if each conducted one training per month. Teams would be modeled after the NACOG employees and volunteers that conducted the original study.

The return on the training of this population would be 406%. Total costs would be $4,249,247, while annual total savings would equal $17,265,860.

Table 12 – Financial Benefits of Training the Families of Kids Care Children

Total Savings	
Total Families	28,500
Dr. or Clinic	5,428,566
Emergency Room	3,143,664
Wages	5,815,986
Total Savings	14,388,216

As shown in Figure 12**,** wage earners would save $5.8 million, ER visit reductions would save $3.14 million, and doctor and clinic fees would be reduced by $5.4 million.

Children at Poverty Level

Many social programs, including Head Start, serve people living on sub-poverty-level incomes. According to the census bureau, 314,093 Arizona children lived below the poverty line in 2004. Dividing this number by 2.03 children per family indicates that 154,726 families with children live below the poverty line. Educating 80% of these families in the use of a health book would require training capacity of 123,781. Continuing with the previous strategy of training 100 families at a time, this would require 1,238 training sessions.

Admittedly, a project of this scope would introduce many unseen costs beyond what have already been mentioned. However, for the purposes of estimating the impact of training, the same assumptions presented earlier will apply to this population. To simplify calculations, the population will be reduced to 120,000, thereby requiring 100 training teams. Each team would offer 12 monthly trainings, each of which would serve 100 families.

Doctor and clinic visit savings would be nearly $22 million. Unnecessary ER charges would be reduced by $12.5 million. Parents' incomes would increase by $23 million as a result of the training. Figure 13 compiles these figures into a total of over $57.5 million.

Table 13 – Annual Financial Benefits of Training Families with Children below the Poverty Line

Total Savings	
Total Families	114,000
Dr. or Clinic	21,714,264
Emergency Room	12,574,656
Wages	23,263,946
Total Savings	57,552,866

Under these estimates, the rate of return would be 406%. The program would cost $14,164,156, and save a total of $57,552,866.

These are only a few examples of possible applications of HCI-style programs. Many other populations in the state could benefit from such a program. The methodology would certainly vary, as would costs. Despite these differences, however, it is clear that any such program would be worth pursuing, due to the positive financial outcomes as well as the benefits to children's education, parents' confidence, and the informed use of health care services.