SOCIAL RETURN ON INVESTMENT: HEALTH PROMOTION PROGRAMS

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1. INTRODUCTION

Health promotion programs in Thailand consist of many activities, projects, pilot projects, efforts to build capacity, and the conduct of research. Government support for health promotion programs is channeled through many ministries, such as the Ministry of Public Health, Ministry of Interior, and Ministry of Social Development and Human Security, and through two independent agencies: the National Health Security Office, and the Thai Health Promotion Foundation (ThaiHealth).

ThaiHealth is an independent state agency set up according to the Health Promotion Act 2001 and funded by a 2 percent surcharge tax on tobacco, and alcohol excise taxes. ThaiHealth supports projects and programs, such as those promoting reduced alcohol and tobacco consumption and fewer traffic accidents, wellness and healthy lifestyles, reduced environmental risks, and less social exclusion among disadvantaged groups, as well as promotion of support for public policy research. More than a thousand projects and programs are funded by ThaiHealth each year.

This study uses the social return on investment (SROI) method to evaluate selected health promotion programs supported by ThaiHealth. The selected programs include one issue-based program, i.e., food and nutrition, and three target-based programs, namely disabled persons, the elderly, and children and youth.

2. METHOD USED

SROI is a useful method for measuring the social impacts of projects or programs. It enables monetizing the social values of projects through the

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The authors would like to thank the Rockefeller Foundation and the Thai Health Promotion Foundation for financially supporting this study. They are grateful to all stakeholders of the selected projects for sacrificing their valuable time to meet our research team. Full Thai reports can be downloaded at sroi-thailand.wikispaces.com.

use of financial proxies. The method is transparent and based on cost-benefit analysis. This study follows six steps in *A Guide to Social Return on Investment* (Nicholls et al., 2009).

Step 1: Researchers determined the scope of the study and analyzed who are the key stakeholders. The scope of the present analysis is described in the next section. In this stage, the authors studied documents and program reports, which provide information on the number of stakeholders and outcomes of programs.

Stage 2: Researchers developed an outcome map by showing the relationship between inputs, outputs, and outcomes. Inputs include money invested and time volunteered.

Stage 3: Researchers collected data and reviewed the social value of the outcomes. The authors tried to employ secondary data as such data can save time and resources; however, in cases where secondary data do not exist, the authors conducted surveys or interviewed stakeholders.

Stage 4: Researchers evaluated the social impact using the following steps. First, they calculated outcome incidence which is the number of stakeholders multiplied by outcome indicator.

$$\textit{Outcome incidence} = \textit{number of stakeholders} \times \textit{outcome indicator}$$

This equation was calculated annually from 2008 to 2012. Second, the authors calculated incidence after deadweight and the social benefit by using the following formulas:

$$\textit{Incidence after deadweight} = \textit{outcome incidence} - (\textit{deadweight proportion} \times \textit{number of stakeholders})$$

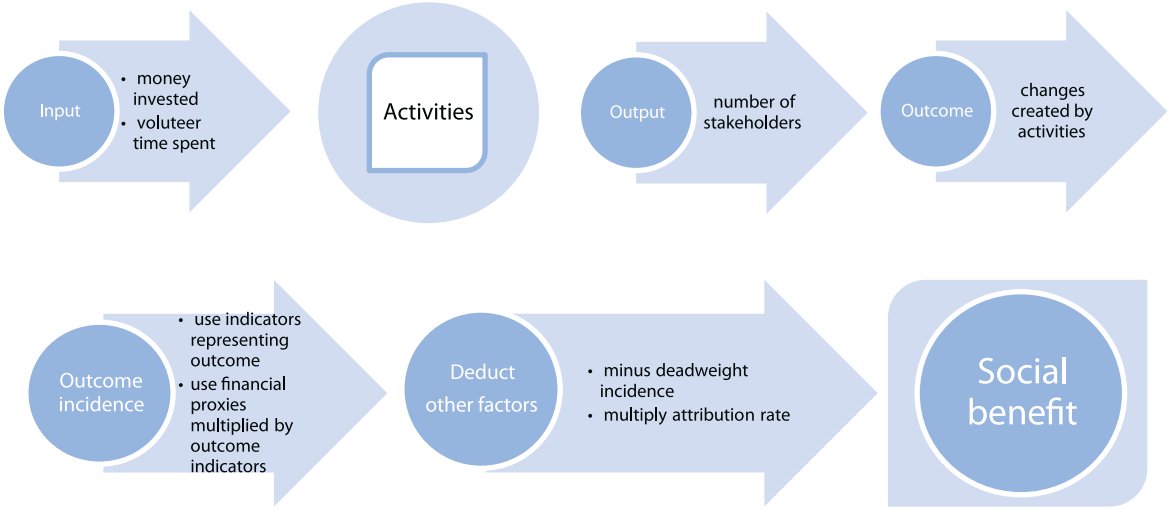
$$\textit{Social benefit} = (\textit{incidence after deadweight} \times \textit{attribution rate})$$

Third, the authors convert the social benefit to financial value. Since the impact of the project may diminish with time, the social benefits in later years are multiplied by the drop-off rate.

$$\textit{Value of social benefit} = \textit{social benefit} \times \textit{financial proxy} \times \textit{drop-off rate}$$

The authors organized stakeholder meetings to get their valuation on deadweight proportion, attribution rate and drop-off rate. There is no displacement impact of the selected programs since they do not generate an adverse impact on the others.The flow of these processes is shown in Figure 1.

Figure 1 *Flow of the program outcome and conversion to social benefit*



Step 5: The authors calculated SROI using the following formula:

$$SROI = \frac{\text{Net present values of the value of social benefit}}{\text{Net present values of total investment}}$$

Step 6: The authors reported the results to stakeholders. The results can be used to communicate to the general public how health promotion investment creates social benefits.

3. SCOPE OF EVALUATION

Since ThaiHealth supports hundreds of programs on food and nutrition, disabled persons, the elderly, and children and youth, the authors had to select representative programs based on their size of investment, year of implementation, and data availability. The followings were selected as the programs to be evaluated; a summary of the selected programs is shown in Table 1.

• Food and nutrition programs

In the period 2008-2011, ThaiHealth supported 20 projects and programs on food and nutrition; about 274 million baht[1] was spent on the programs, eight of which were large and cost more than 10 million baht. The programs selected for evaluation are the Sweet Enough Campaign and Healthy Organization for Thai People Flat Belly Program.

• Disabled persons and elderly programs

In 2010 ThaiHealth allocated 293.4 million baht to programs for the disabled and 17.9 million baht to those related to the elderly. Four programs for SROI evaluation are: (a) Entrepreneurial Skill Training for Disabled Persons; (b) Thai Massage Training for the Blind; (c) Medium and Long-term Care for the Elderly in the Community; and (d) Home and Public Building Renovation for the Elderly.

• Children and youth programs

During the period 2009-2011, each year ThaiHealth supported up to 80 programs on health for children and youth and spent about 350 million baht on them. More than half the programs were large, costing more than 10 million baht. Programs selected for evaluation were: (a) Capacity Development of the Child Development Center under Local Administration Organization; (b) Health Promotion for Thairathwittaya Schools; (c) Child Safety Promotion and Injury Prevention; and (d) Children and Youth Capacity Development by Learning from the Local Community.

SROI analysis was used internationally in many of the health-related programs that have social impacts, such as the Food-for-Life Partnership (Kersley and Knuutila, 2011), Food Connect Brisbane (Coellen, 2011), Minnesota Diversified Industries (Da'ar, 2011), Sunderland Home Care Associates (Department of Health, 2010), Older Persons' Advice Project (Maxwell, 2009), Glen Mile Mountain Bike Trail Cumbernauld (Greenspace Scotland et al., 2011), CHANA Programme (International HIV/AIDS Alliance, 2010), and Berkshire Association of Clubs for Young People (Nicholles, 2010).

[1] *About US$ 8.77 million (US$1 = 31.24 baht).*

Table 1 *Summary of selected programs*

Project/ work plan	Recipient organization	Implementation period	Budget (millions of baht)	Core activities
Food and nutrition (FN)				
Sweet Enough Campaign Program (second phase)	Dental Health Division, Department of Health	2008-2011	46.8	• Program to reduce sugar consumption through a combination of knowledge development, initiation of Sweet Enough Network to address the health issues related to over consumption of sugar, and development of measures and policies devoted to controlling and preventing excessive sugar intake among children. • Movement to change the notifications of the Thai Ministry of Public Health Nos. 156 and 157. • Advocate for prohibition of the sale of carbonated drinks in public schools. • Collaborate with local networks to advocate for limiting the sale and consumption of unhealthy food.
Healthy Organization for Thai People Flat Belly Project	Bureau of Nutrition, Department of Health	May 2008-October 2009	84.1	• Program to build and strengthen the capacity of local administrative organizations, public and private organizations, and partner networks, in changing health behavior, including food and nutrition, exercise and emotions. • Develop body of knowledge according to the principle of 3Es (eating, exercise, emotions). • Activate social movement on food consumption and exercise behavior.
Disabled persons and the elderly (DE)				
Entrepreneurial Skill Training for Disabled Persons (class 1)	Institute of Health Promotion for People with Disability in coordination with Institute for Small and Medium Enterprises Development	2008-2009	2.7	• Support capacity development for disabled persons that leads to an increase in their accessibility to employment or enables them to start their own enterprises. • Conduct training and other activities involved. • Provide post-training technical support and coordinate support with existing networks, such as securing grants and funding, and sharing knowledge. • Conduct knowledge management and follow up after training.
Thai Massage Training for the Blind	Foundation for Children with Disability	2009-2012	42.0	• Reduce disparity in Thai massage employment accessibility. • Develop training curriculum, manuals and instructional media, such as braille manual, tape lesson and dummy. • Training of trainers on how to effectively communicate with the blind. • Mobilize registration to establish a certified training institution.
Medium and Long-term Care for Elderly in the Community	Foundation of Thai Gerontology Research and Development Institute	2010-2012	21.15	• Mobilize local communities' participation in establishing a health-care center for the elderly. • Provide training for care-givers and systematic support mechanisms to ensure project sustainability.
Home and Public Building Renovation for the Elderly				• Support renovation in homes and public buildings to reduce risk and rate of accidents, which entails further benefits for disabled persons. • Campaign development and practice of innovative design model. • Provide training and knowledge sharing in door-to-door visits, design service and financial support. • Comfy Home for Elderly Contest.
Children and youth (CY)				
Capacity Development of Child Development Center under Local Administration Organization	Department of Local Administration	2010-2012	15.2	• Attendance of teachers and children in 72 child development centers, sharing knowledge and learning from good models. Organize teaching and learning activities, such as in Montessori education and Boy Scout camps.
Health Promotion for Thairathwittaya Schools	Thairath Education Administration's Association	2009-2010	16.5	• Thairathwittaya schools initiate more than 400 activities to improve quality of life of students, teachers, parents, and people in Thairathwittaya's community.
Child Safety Promotion and Injury Prevention	Child Safety Promotion and Prevention Research Center	2008-2010	23.6	• Activities for child safety are initiated in local community, child-care centers, and schools. Manual for child safety is distributed to local community. Promotion of safe playground is organized in many areas. Child safety promotion at the policy level also is supported under this project.
Children and Youth Capacity Development by Learning from Local Community	Youth Local Wisdom Network and Thai Volunteer Service	2008-2011	35.4	• Various activities are initiated under this project, including learning about local herbs and vegetables; local arts and crafts, historic sites in neighborhood areas; learning about local lifestyles, and local wisdom. Children and youth also learn about knowledge management of local wisdom.

4. DATA

Data on input, output, outcome indicator, financial proxy, deadweight rate, attribution rate, and drop-off rate were collected by reviewing documentation, interviewing or meeting with stakeholders, and using questionnaire surveys and national surveys. Input and output data were provided by funded organizations and ThaiHealth; outcome indicators and financial proxies were obtained from both primary and secondary data. Deadweight, attribution and drop-off rates were obtained from stakeholder meetings and interviews.

Questionnaire surveys were used in many provinces, including Trang, Phetchaburi, Chiang Mai, Nong Khai, Bangkok, and Nakhon Ratchasima. Stakeholder meetings were organized in Nonthaburi, Rayong, Phetchaburi, Bangkok, and Nakhon Ratchasima provinces; 132 participants were involved (Table 2). The key objectives of the meetings were to learn how the programs make changes for stakeholders (outcome), what would have changed if there had been no programs (deadweight), how other factors and programs contribute to such changes (attribution rate), and how long lasting are the effects of the programs (drop-off). Table 3 shows indicators used to measure outcomes and financial proxies used to convert outcomes into monetary terms.

Table 2 *Data sources*

Stakeholder	Primary data (number attending)		Secondary data (sources)
	Field survey	Stakeholder meeting	
Students/children and youth	1,238	12	• Surveys conducted by the National Statistical Office, including Survey on Social Conditions and Culture (2008), Socio-Economic Survey (2009), and Health and Welfare Survey 2011. • Thailand's Child Watch Survey 2008-2009. • TDRI research paper by Kannika and Worawan (2012). • Survey conducted by Sweet Enough Campaign Program. • Survey conducted by Healthy Organization for Thai People Flat Belly Project. • Final program reports. • Institute for Small and Medium Enterprise Development 2011 project evaluation report. • Foundation for Thai Gerontology Research and Development. • Telephone interviews with Manarom Hospital, Ramathibodi Hospital and Thanyarak Institute.
Parents	238	20	
Disabled persons	51	6	
Elderly people	147	3	
Care-givers/family members	136	5	
Employees	147	4	
Employers	-	1	
Teachers/child care staff/child attendance	49	15	
People in communities	1,185	19	
Funded organizations	101	28	
Organizations for the blind	5	6	
Thai massage instructors	8	3	
Local government	3	10	
Total	**3,308**	**132**	

Table 3 *Outcomes, indicators and financial proxies*

Stakeholder	Outcomes	Indicators	Financial proxies
Student/ children and youth (FN, CY)	• Improved physical health	Increased exercise or participation in sport activities (hours/person/year) (FN, CY)	Opportunity cost of exercise (calculated from average daily wage per person): 32 baht/person/hour
	• Improved mental health	Proportion of children having sleeping problem due to depression decreases (CY)	Cost of depression treatment (16 sessions in one year): 1,775 baht for outpatient care.
	• Changes in food consumption behavior	Reduced consumption of carbonated soft drinks (times/person/year) (FN, CY)	Average expenditure on soft drinks per person per year: 9 baht/person/time (FN), average expenditure on "pop": 1,124 baht/year (CY)
	• Improved learning effectiveness	Proportion of children who like to go to school increases (CY)	Average education expenditure: 2,178 baht/year
	• Improved use of spare time	Proportion of children playing on-line or computer games decreases (CY)	Average expenditure for Internet use: 1,745 baht/year
	• Reduced drug addiction	Proportion of children seeing drug use in school decreases (CY)	Cost of drug detox: 13,146 baht/person/year (inpatient)
Parents (FN, CY)	• Improved child physical health	Reduced prevalence of dental visits in children (times/person/year) (FN)	Parents' out-of-pocket dental expense: 146 baht/person/time
	• Reduced child-care burden	Increased frequency of family travel (times/household/year) (FN)	Household's average expenditure on family travel per trip: 4,542 baht/household/trip
	• Improved trust for child safety (feel safe to go to school)	Proportion of children feeling safe when going to school increases (CY)	Average education expenditure: 2,178 baht/year
Disabled persons (DE)	• Able to sustain business and expand	Disabled earn more income (DE)	Earnings increased on average: 972,800 baht/person/year
	• More vocational skills and sustainable employment	Disabled receive higher wages (DE)	Wages increased on average: 25,040 baht/person/year
	• Higher grants and funding accessibility	Disabled investment amount (DE)	Investment increased on average: 220,700 baht/person/year
	• More confidence in doing business	Participation in business activities (DE)	Expenses on social activities: 1,734 baht/time/person
	• Able to apply in real life	Number of times leaving the house (DE)	Expenses on travel: 1,002 baht/time/person
Elderly (DE)	• Better health	Number of times elderly travel to hospital (DE)	Expense for travel to hospital on average: 128 baht/time/person
	• Fewer accidents	Number of accidents (DE)	Medical expense following accident on average: 221 baht each time
	• Higher self-confidence	Participation in social activities (DE)	Expenses on social activities: 162 baht/time/person
Caretaker/ family member (DE)	• More personal relaxing time	Number of family's relaxing time and recreation activities (DE)	Expenses on relaxation amusement and recreation: 1,375 baht/time/household (Disabled program), 642 baht/time/person (Elderly program)
	• Save expenses	Volunteer assistance (DE)	Care-taker fee on average from community: 238 baht/day
Teacher/child attendance (CY)	• Improved child-care capacity	Proportion of teacher or child attendance having better child-care capacity increases (CY)	Income from employment: 92,630.50 baht/year
Employee (FN)	• Improved physical health	Increased exercise or participation in sport activities (hours/person/year) (FN)	Opportunity cost of exercise (calculated from average daily wage per person): 32 baht/person/hour
Employer (FN)	• Increased employee' productivity	Reduced days of sick leave due to obesity and related diseases (days/person/year) (FN)	Average daily wage per person: 254 baht/person/day
Funded organization (FN, DE, CY)	• Improved life satisfaction	Proportion of staff satisfied with their life increases (FN, DE, CY)	Value of life satisfaction from assisting people in need (baht/person/year): 371,640 baht/year
People in communities (FN, DE, CY)	• Increased livability in local community	Increased participation of local residents in community activities (times/person/year) (FN, CY)	Opportunity cost of participating in community activities (calculated from average daily wage per person): 254 baht/person/day
	• Reduced cost of organizing community events	Saving on cost of organizing community activities (baht/community/year) (FN)	Reduction in community expenditure on organizing religious events: 1*
	• Harmonious society, help each other in the community	Community volunteers gain more care-taking skills (DE)	Care-taker fee on average: 7,200 baht/person/year
	• Community feels proud in helping improve quality of life for elderly	Community funding support for renovation activities (DE)	Community funding support increased: 60,083 baht/community/year

Stakeholder	Outcomes	Indicators	Financial proxies
Organization for the blind (DE)	• Improved training efficiency	Lower expense for producing training materials (DE)	Expenses for producing training materials reduced: 1,667 baht/organization/year
Thai massage instructor (DE)	• Standardized training	Fewer training hours (DE)	Thai massage instructor fees on average: 300 baht/person/hour
Government/ local government (FN, DE, CY)	• Reduced health-care expenditure attributable to obesity	A decline in number of obese patients (persons/year) (FN)	Health-care expenditure attributable to obesity: 2,343 baht/person/year
	• Reduced social burden (health-care cost)	Children's opportunity to become sick declines (CY)	Health-care expenditure: 245 baht per visit for outpatient and 7,459 baht per episode for inpatient (including transportation expenditure)
	• More employment in the community	Number employed in the community (DE)	Earnings from more employment on average: 2,670,000 baht/year
	• Higher priority for elderly	District government authorities integrate elderly project in community development plan (DE)	Budget allocation for projects on elderly increased by average of 53,333 baht/district/year

Notes: FN, DE, and CY refer to food and nutrition; disabled person and the elderly; and children and youth programs, respectively.

** Given that the cost saving from not serving carbonated soft drinks at community religious events is already in a monetary term, no financial proxy is required. Therefore, the number "1" is used.*

5. RESULTS

The SROI calculation uses the formula shown in section 2. The timeframe for the SROI analysis is five years (2008-2012). Discount rates used for calculating the net present values (NPV) are 3, 4 and 10 percent, respectively. It is assumed that all investment from ThaiHealth and other sources are spent in the first year and the number of outputs from each program remains constant over five years.

Total investment on selected programs on food and nutrition is 131 million baht. The NPV of social benefits is 1,765 million baht. The SROI ratio is 13.49, using a 3 percent discount rate. One baht invested in food and nutrition programs provides a social return of 13.49 baht.With higher discount rates of 4 percent and 10 percent, the SROI ratios are 13.14 and 11.35, respectively (Table 4).

Investments in selected disabled persons and elderly programs are 45 million baht and 21 million baht, respectively. The social benefit from the disabled program is equivalent to 9 million baht in the first year[2] and increases to a total of 59 million baht by the end of the sixth year. Given a discount rate of 3 percent, the SROI ratio is 1.18. Every baht invested in disabled programs provides a social return of 1.18 baht. Moreover, investment in programs for the elderly provides social benefits worth 14 million baht in the first year, accumulating to 68 million baht at the end of the fifth year. With a 3 percent discount rate, the SROI ratio is 2.95. Every baht invested in elderly programs provides a social return of 2.95 baht.

Investment in children and youth programs is 97 million baht. The social benefit in the first year is worth 227 million baht. At the end of the fifth year, the social benefit accumulates to 718 million baht. The NPV of the social benefit is 667 million baht. Using a 3 percent discount rate, the SROI ratio is 6.87. An investment of one baht on children and youth programs gives a social return of 6.87 baht. If the discount rate increases to 10 percent, the SROI ratio is 5.87.

The authors tested how the analysis is sensitive to the subjective parameters, such as deadweight and attribution rates. This analysis uses quite conservative parameters to avoid over-claiming. For the deadweight rate, two scenarios are considered:

[2] *The 8.56 million baht benefit was from the Entrepreneurial Skills Training for Disabled Persons project alone. The Thai Massage Training for the Blind project began the next year.*

Table 4 *Social return on investment*

Discounted rate (%)	Social return on investment			
	Food and nutrition	Disabled persons	Elderly	Children and youth
3	13.49	1.18	2.95	6.87
4	13.14	1.15	2.87	6.71
10	11.35	0.96	2.44	5.87

Note: Estimations are available upon request.
Source: Authors' calculation.

one in which the estimates of the deadweight rate increase by 10 percentage points for all outcomes, and the other in which the estimates of deadweight increase by 20 percentage points for all outcomes, holding other assumptions constant. For the attribution estimates, two scenarios are considered: one in which the estimates of attribution for ThaiHealth decline by 10 percentage points for all outcomes, and the other in which the estimates of attribution for ThaiHealth decrease by 20 percentage points for all outcomes, holding other assumptions constant. An increase in deadweight or a decrease in attribution means that the selected programs would have smaller impacts on outcomes.

Table 5 summarizes of the results from the sensitivity analysis. For food and nutrition programs, sensitivity analysis demonstrates that SROI results do not have a high degree of sensitivity, when the estimates of deadweight are increased by 10-20 percentage points for all outcomes, or when the estimates of attribution are reduced by 10-20 percentage points for all outcomes, the SROI ratios are between 6.88-10.83 and 7.30-11.08, respectively.

SROIs range between 0.58 and 0.95 for programs on disabled persons and 1.24 and 2.40 for programs for the elderly, when adding 10-20 percentage points to deadweight. Decreasing attribution by 20 percentage points for disabled person and elderly programs was not considered.[3] However, when the attribution rate is reduced by 10 percentage points, the SROI ratios for disabled person programs are 0.60-0.74 and 1.27-1.53 for elderly programs, respectively.

SROI for children and youth programs is 5.25 when 10 percentage points are added to deadweight across the board. SROI reduces to 3.64 when 20 percentage points are added to all deadweights. SROI is less sensitive to attribution. When 10 or 20 percentage point attributions are reduced, SROIs are between 3.82 and 5.35, respectively. SROIs move in the same direction when the discount rates are 4 or 10 percent.

[3] *Some types of stakeholder reveal that the maximum attribution rates from ThaiHealth are 20 percent. In this case, the authors did not recalculate SROI when the attribution rate was reduced by 20 percentage points.*

Table 5 *Sensitivity analysis*

Issue	Additional 10-20 percentage points deadweight			Reduction of attribution by 10-20 percentage points		
	3%	4%	10%	3%	4%	10%
1.Food and nutrition	8.17-10.83	7.96-10.55	6.88-9.11	8.68-11.08	8.46-10.80	7.30-9.33
2.Disabled and elderly						
- Disabled	0.71-0.95	0.69-0.92	0.58-0.77	0.74*	0.72*	0.60*
- Elderly	1.50-2.40	1.46-2.33	1.24-1.99	1.53*	1.49*	1.27*
3.Children and youth	3.64-5.25	3.55-5.13	3.11-4.49	3.82-5.35	3.74-5.22	3.28-4.57

**Some stakeholders revealed the maximum attribution rate to be 20 percent.*
Source: Authors' calculation.

6. CONCLUSIONS AND POLICY RECOMMENDATION

It was found that social investment provides positive returns to the general public. Programs focusing on food and nutrition can cover a wide range of the population with low investment. The return is about 10 baht for each baht of investment. Programs on children and youth provide about half that of programs on food and nutrition. These programs differ in nature; comparison of the impact should be done cautiously.

Programs on children and youth can provide long-term returns because children and youth are expected to live for a long time. On the contrary, programs for the disabled and older people provide a shorter benefit period because the beneficiaries have a shorter life expectancy and are volatile to any changes. Health promotion programs for disabled persons and the elderly were started off later than the other two programs. The return on their investment was low when the program had just taken off. Low return does not mean that the program should be terminated. But, ThaiHealth should invest carefully to these disabled and elderly to improve their attribution rates and, consequently, SROI.

SROI can be used to monitor and indicate how to improve program implementation. SROI is a useful tool for measuring the social impact of projects or programs. Applying this tool requires that the program manager collect data on input and output and create a clear framework for an outcome map.

It is important that in the future social investment using public funding sources such as ThaiHealth should be able to show returns on investment. To do so, managers of social projects should develop a database which contains information on project activities, outputs and outcome indicators. To evaluate the changes that have occurred or the benefits generated by the projects, it is important that data on outcome indicators be collected from the beginning and throughout the project. In addition, benchmark data, i.e., the value of outcome indicators at the national level, should also be systematically collected.

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