

## **Development of Primary Health Care Services for Stroke Prevention in Persons with Warning Signs of Stroke**

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**Abstract:** This participatory action research sought to develop primary health care services for stroke prevention in persons with warning signs of stroke. The study was conducted in a primary care unit in central Thailand between December 2009 and December 2010.

The research consisted of two major components: situational analysis and developmental process. The situational analysis included: exploration of how health care was being delivered to persons with stroke warning signs; determination of the needs of such individuals and their families; and, identification of key factors that would contribute to the development of primary health care services for persons with stroke warning signs. The developmental process included four phases: 1) *raising awareness and recognizing the need for the development of primary stroke prevention care*; 2) setting up an approach for mutual development of stroke health care services to be offered by the primary care unit healthcare team; 3) extending the service network from the primary care unit healthcare team to the community healthcare network; and, 4) extending the healthcare network to community members authorized by the healthcare team to deliver health care services.

The participatory process resulted in: persons with stroke warning signs, and their families, having access to holistic and continuous care services consistent with their needs during each stage of illness; health care providers providing needed care services via multidisciplinary, community care, teams to persons with stroke warning signs; assessment tools and service provision practice guidelines being developed; and, the primary care unit having a community care service model to use when providing care for persons with stroke warning signs.

Factors that contributed to the development of the community care services provided at the primary care unit included the: positive attitude of the health care providers toward the situation; congruence of the concepts regarding the services provided by the health care providers; collaboration and networking among the stakeholders; and, policies that were developed regarding the provision of needed services. The positive development of the community care service program suggested that the awareness and understanding of stroke warning signs among the health care providers, as well as the networking that took place among the persons with warning signs of a stroke, their families and the community, can help persons with warning signs of a stroke self-manage and obtain quality health care.

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## **Background**

A stroke is a focal vascular impairment of the brain that has a sudden onset and lasts for more than 24 hours.<sup>1</sup> Some individuals may experience, prior to having a stroke, a warning sign called a transient ischemic attack (TIA). A transit ischemic attack, unlike a stroke, involves a brief stoppage of blood flow to part of the brain. While a TIA demonstrates stroke-symptoms, these symptoms, unlike a stroke, last from a few minutes to two hours. Ignoring the brief symptoms of a TIA can prove hazardous to one's health since lack of treatment of the cause of the TIAs can lead to an actual stroke. The most common warning sign of a stroke or TIA is sudden weakness or numbness of the face, arm or leg, most often on one side of the body.<sup>1</sup> Other symptoms include: confusion; difficulty speaking or understanding speech; difficulty seeing with one or both eyes; difficulty walking; dizziness; loss of balance or coordination; a severe headache with no known cause; and/or, fainting.<sup>1</sup>

Both in developed and developing countries, stroke is a major public health problem.<sup>2</sup> In addition, it is the second most common cause of death among adults, and the leading cause of long-term disability, worldwide.<sup>3</sup> Only 50%-70% of stroke survivors regain functional independence, while 15%-30% of those who experience a stroke become permanently disabled.<sup>4</sup> Thus, the World Health Organization (WHO) has emphasized the importance of healthcare service development in regards to stroke prevention, including; incorporation of stroke prevention strategies into national health policies; proactive efforts to identify those in an early stage of the disease; provision of needed services via a multidisciplinary team; and, ongoing programs to prevent this progressive disease.<sup>1</sup>

More than 700,000 Thais have been identified as suffering from a stroke,<sup>5</sup> with more than 150,000 new stroke cases identified each year. In 2010, a total

of 196,159 new stroke cases were reported in Thailand.<sup>6</sup> Apart from leading to permanent disability and premature death, strokes have been recognized as contributing to a significant increase in care burden and expenditures for individuals, as well as their families, communities and nations. In an effort to address this ever increasing problem, Thailand's National Health Security Office (NHSO) proposed development of a primary care system that would focus on patients and their families, as the center of the system, and on delivery of care services by a multidisciplinary health care team, whereby persons with warning signs of a stroke could be readily and rapidly identified and needed services could be provided via an ongoing network of highly qualified healthcare team members.<sup>7</sup>

A review of services provided, between 2006 and 2010, at a primary care unit (PCU) in central Thailand, to persons with stroke warning signs revealed that: services were provided to over 1200 stroke survivors; more than 200 individuals did not regularly seek needed stroke care; and approximately 25 new stroke cases were seen each year. Unfortunately, it appeared the number of new stroke cases was likely to increase, given most of the individuals at high risk of a stroke did not realize the dangers of the disease.<sup>8,9</sup> In addition, the majority of those with stroke warning signs initially did not seek healthcare services because of their lack of knowledge about the cause, manifestation and need for early treatment and care.<sup>8,9,10</sup> Hence, they did not seek treatment until their symptoms became aggravated to a level beyond their control,<sup>11,12</sup> resulting in delayed access to treatment and, subsequently, a severe disability.<sup>9,10</sup> Therefore, this research was conducted in an effort to develop primary stroke prevention care services for persons with warning signs of a stroke who would receive care at the PCU used as the study site.

## Method

**Design:** This study used a participatory action research (PAR) design that involved collaboration among all participants.

**Ethical Considerations:** Approval to conduct the study was obtained from the Ethics Committee for Human Subjects of the researchers' academic institution, as well as the administrator of the PCU used as the study site. All potential participants were purposively selected and informed about: the nature of study; what involvement in the study entailed; anonymity and confidentiality issues; and, the right to withdraw from the study at anytime without repercussions. All individuals consenting to take part in the study were asked to sign a consent form.

**Setting and Sample:** The setting for the study was a PCU in central Thailand. This particular PCU was selected because it provided health care services, with a focus on stroke prevention, to 23,446 community members, of whom 1,468 (6.56%) were considered at a high risk for stroke.

Participants in the study were: two physicians from the PCU; two nurses from the PCU; a PCU pharmacist; the public health officer in charge of the PCU; another public health technical officer stationed at the PCU; the nurse in charge of the service contracting unit; two nurse practitioners from the service contracting unit; 36 individuals at high risk for stroke; 15 individuals with stroke warning signs, and their families; 23 individuals who had suffered a stroke, and their families; the nurse in charge of the health promotion section of the PCU; the nurse stationed at the sub-district administrative organization; the chairperson of the public health volunteers; 25 public health volunteers; two village headmen; two village headmen's assistants; one Buddhist monk; three leaders from the People's Sector; five leaders from the Family Health Network; and, three traditional massage therapists. The individuals, who had: a high risk for

stroke; stroke warning signs; or, suffered a stroke, were identified as potential study participants, by the two nurses from the PCU, who also were participants in the study. Although each phase of the study used a different group of participants, the health care team members at the PCU, who served as the key or primary participants, participated in all components/phases of the study. None of them dropped out prior to completion of the study.

**Procedure:** The research process consisted of two major components: 1) situational analysis; and, 2) developmental process. *Situational analysis* involved the use of a two phase qualitative data collection method that: explored how healthcare was being delivered to persons with stroke warning signs; determined the needs of such individuals and their families; and, identified key factors that would contribute to development of primary health care services for persons with stroke warning signs. Data obtained during the situational analysis were used for the purpose of providing information for the second major component (developmental process) of the study's procedure. The *developmental process* involved four phases that: addressed awareness and the need for primary stroke prevention; set up stroke care services to be offered by providers in the primary care unit; extended the stroke care services from the primary care unit to the overall healthcare network; and, extended the stroke care services to the community.

**Situational Analysis:** During the first phase of situational analysis, information was collected, by the primary investigator (PI), via in-depth interviews, observations, field notes and informal discussions, though use of open-ended questions, with the: two PCU physicians; two PCU nurses; PCU pharmacist; public health officer in charge of the PCU; public health technical officer stationed at the PCU; nurse in charge of the service contracting unit; and, two nurse practitioners at the service contracting unit. Each person was interviewed, by the PI, at the PCU, three

to five times, so as to achieve saturation of data. All interviews were conducted at a mutually convenient time, in the afternoon, and tape-recorded. Each interview began with demographic questions, so as to gain information regarding each subject's: gender; age; race; address; home phone number; and, experience and management of a stroke, and stroke warning signs. Open-ended questions also were asked regarding each participant's health care service needs with respect to stroke prevention and treatment of those with stroke warning signs, as well as each participant's perspective on the development of the health care services provided by the PCU to meet the needs of those who had experienced a stroke or had stroke warning signs. The open-ended questions included: "What do you think about the current health care service for stroke prevention regarding persons with warning signs of a stroke?"; and, "What things do you want to do to improve the primary health care services for patients with respect to stroke prevention and the presence of stroke warning signs?" Probing questions were used to obtain more detailed information regarding the participants' perceptions with respect to the policies, health care service plan, multidisciplinary team and nursing care guidelines, medications, and practices of the participants with the patients. Information obtained, including the context and content of all discussions and observations (i.e. participants' viewpoints about the need for various health care services, the development process, the design of the interventions and evaluation, and the reflections of the PI regarding the process), were documented via written field notes.

The second phase of situational analysis involved one-to-one interviews, observations, focus groups, field notes and a review of patients' health records, for the purpose of identifying the problems and needs of individuals when they experienced stroke warning signs. Participants in this phase included: 36 individuals at a high risk for stroke; 15 individuals

with stroke warning signs, and their respective families; 23 individuals who had suffered a stroke, and their respective families; the nurse stationed at the sub-district administrative organization; the nurse in charge of the health promotion section of the PCU; chairperson of the public health volunteers; 25 public health volunteers; two village headmen; two village headman's assistants; one Buddhist monk; three leaders from the People's Sector; five leaders from the Family Health Volunteers; and, three traditional massage therapists. The PI conducted one-to-one interviews with all of these participants, except for 20 of the 36 high risk patients and the 25 public health volunteers. These participants, rather than being interviewed, were involved in two focus groups. The interviews were held either in the participants' respective homes or at a convenient location of their choice. The two focus groups, consisting of the high risk patients and the public health volunteers, were conducted in the PCU and had 22 or 23 participants per group. Open-ended questions were used, during both the interviews and in the two focus groups, to elicit information regarding the participants' experiences regarding stroke, stroke warning signs, and health care management using folk and traditional Thai medicine. Examples of the open-ended questions were: "What experiences have you had in dealing with a stroke?"; "Where did you learn about stroke warning signs and stroke prevention?"; "What lifestyle changes have been made as a result of a stroke?"; and, "What choice of treatments and complimentary therapies, as well as preventive measures are available regarding care of patients who have had a stroke?" The interviews and focus groups were tape-recorded. In addition, field notes were written regarding observations made during the interviews and focus groups. Finally, the health records of the 15 individuals with stroke warning signs and the 23 stroke patients were reviewed to obtain their demographic data, medical history, PCU visits, hospitalizations,

laboratory test results, medical treatments and health care management.

As a result of the situational analysis, the following two major components were identified for use in the developmental stage of the process: a) *current primary care services*; and, b) *problems and health service needs of persons with stroke warning signs, and their families*. Under *current primary care services*, six factors were identified as issues in the current delivery of health care for individuals contending with a stroke or possible stroke.

- An agreement had not been reached regarding the criteria for stroke screening. As a result, stroke screening assessment was not the same among health care providers. In addition, since warning signs cannot be identified accurately during a first screening, because they can manifest themselves differently and within a diverse range of symptoms, the majority of persons with stroke warning signs were not being identified at an early stage of their illness. Plus, it was noted the practices of healthcare providers in disseminating information and administering care, to potential stroke victims, were very diverse.
- The approach used to provide primary care services to persons with stroke warning signs depended upon the beliefs and experiences of the individual healthcare provider. This factor, in turn, contributed to the lack of a consistent approach to healthcare delivery.
- A surveillance system and adequate available information regarding stroke warning signs did not exist within the healthcare system. As a result, persons with stroke warning signs had to rely upon themselves to search for and obtain adequate care, as well as learn, on their own, how to care for their health.
- The health care being delivered focused, primarily, on addressing the actual illness,

rather than dealing with the individual's unique health care needs in terms of his/her lifestyle. As a result, a lack of personal connection tended to occur between the healthcare provider and the recipient of care. This often was because the person experiencing stroke warning signs had his/her own beliefs, regarding illness and how to address related problems that tended to differ from those of the professional healthcare provider. It also was noted that strategies used in delivering healthcare to persons, with stroke warning signs, varied based upon the viewpoints of the individual healthcare provider.

- There was not a completed illness data recording and storing system within the PCU. As a result, the existing system did not facilitate adequate communication within the healthcare team members, which could have contributed to a lack of continuity of care.
- Healthcare services were not being delivered in a comprehensive manner, because most persons with stroke warning signs were dealing with their health issues, on their own, and not seeking services from the PCU.

Regarding *problems and health service needs of persons with stroke warning signs, and their families*, the second component identified during the situational analysis, it was noted that persons with stroke warning signs, and their respective families, had perceptions about stroke warning signs based upon their own beliefs and experiences (i.e. stories told by word of mouth and viewpoints provided by an identified, supposedly, knowledgeable person in the community). These perceptions were developed within two stages: "before becoming aware of stroke warning signs" and "after becoming aware of stroke warning signs." During the "before becoming aware of stroke warning signs" stage, persons with stroke warning signs perceived the signs, as expressed in their

statements, as: “normally found.....in any person;” “an ailment....due to the stiffness and hardening of tendons;” “an illness.....due to a non-specific reason;” “the results derived from.....karma;” “a paresis;” and, “an abnormal symptom.....that I do not have any idea about.” The “after becoming aware of stroke warning signs” stage occurred when persons with stroke warning signs, and their families, adapted their own methods of addressing their healthcare problems based upon their perceived trajectory of disease progression and severity. This trajectory was found to be comprised of four phases: a) fearing death and suffering (“I don’t want to die or be disabled.”); b) having hope and not the disease (“The reason I seek another way to treat the illness [i.e. herbs and massage] is the hope that I do not have the disease or disability.”); c) accepting and letting go (“Whatever will be will be.” “I must accept.....and learn to live with my disease.”); and, d) making lifestyle changes (“I have made good progress in making healthy lifestyles choices.” “I must seek changes for improvement, especially using multiple conservative treatments and Buddhist ways.”).

Although persons with stroke warning signs experienced one or all of the above phases, they often had varying perceptions regarding the severity of their symptoms and progression of their disease. As a result, it was noted their level of learning about how to address their health problems and needs varied. However, most of them lacked knowledge about the disease and how to correctly manage it during each of the four stages of their illness trajectory, especially during the first phase when the initial warning signs began to emerge. Most of the individuals with stroke warning signs tended to manage their own care and not seek healthcare services from the PCU.

As a result of the findings obtained during the situational analysis, it was determined that the developmental stage of the research process needed to prepare a holistic and continual service delivery system that addressed: all phases of stroke prevention, with a

particular focus on stroke warning signs; involvement of families and community members; and, development of tools and practice guidelines for use among healthcare team members and persons manifesting warning signs of stroke.

**Developmental Process:** The developmental process, the second major component of the study’s procedure, as previously mentioned, consisted of four phases, including: 1) raising awareness and recognizing the need for development of primary stroke prevention care; 2) setting up an approach for mutual development of stroke health care services to be offered by the PCU healthcare team.; 3) extending the service network from the PCU healthcare team to the community healthcare network; and, 4) extending the healthcare network to community members authorized by the healthcare team to deliver health care services (i.e. nurse in charge of the contracting service unit, Buddhist monk, three leaders from the Peoples’ Sector, five leaders from the Family Health Volunteers and three traditional massage therapists).

Phase 1, raising awareness and recognizing the need for development of primary stroke prevention care, involved the: two PCU physicians; two PCU nurses; PCU pharmacist; and, public health technical officer stationed at the PCU. The approaches used, by the PI, with the participants, included: presentation of data obtained from the situational analysis; five discussion sessions; and, five to seven interviews per participant. All of these approaches were carried out in a room at the PCU. The presentation of data obtained from the situational analysis focused on the healthcare problems experienced and healthcare services needed by the individuals with stroke warning signs. The five discussion sessions dealt with the need for existing healthcare services for persons with stroke warning signs and how to develop appropriate primary healthcare services. The interviews focused on: “How do you help at-risk stroke patients and their caregivers recognize stroke warning signs?” and “What factors,

such as folk perceptions of illness, influence the recognition of the signs and management of stroke symptoms?” From the information obtained, the PCU nurses developed: a stroke screening instrument based on specific criteria; guidelines for implementation of appropriate healthcare related to dealing with and preventing strokes; and, a healthcare manual that delineated how to manage one’s health and lifestyle for the purpose of preventing a stroke.

Phase 2, setting up an approach for mutual development of stroke health care services to be offered by the PCU healthcare team, involved, as primary participants, the: two PCU physicians; two PCU nurses; PCU pharmacist; and, public health technical officer stationed at the PCU. The secondary participants included six of the 15 individuals, who had stroke warning signs, and their families. All of these participants had taken part in the situational analysis component of the study and were selected, by the physicians at the PCU, because of the intensity of their stroke-related problems and needs. During this phase, the PI engaged in ten discussion sessions, with all of the participants. The discussion sessions were held, in a room at the PCU, after the patients received their healthcare services. The discussion sessions focused on the participants’ ideas about how to work together to design stroke prevention healthcare services that addressed the issues and problems identified in Phase 1 of the development process. In addition, when appropriate, the PI provided information to the group regarding stroke prevention. During the discussion sessions, the six individuals who had experienced stroke warning signs, and their family members, were encouraged, by the PI, to share their experiences with the other participants. The experiences that were shared included: Buddhist practice activities for the purpose of decreasing stress; self-management strategies that focused on lifestyle changes; and, self-monitoring and self-evaluation for the purpose of stroke prevention. Throughout this phase, participants were encouraged,

by the PI, to identify persons in the community that could assist with extension of the stroke prevention health services from the PCU healthcare team to the community healthcare. As a result of the information obtained during the discussion sessions, the participants developed: management guidelines for PCU healthcare delivery that were more holistic and multidisciplinary in nature; referral practice guidelines; activities that fostered health promotion; peer-based assistance groups (i.e., self-help) for persons with stroke warning signs; and, a plan for identifying persons, in the community, with stroke warning signs.

In Phase 3, extending the service network from the PCU healthcare team to the community healthcare network (i.e. community health volunteers, family health volunteers, family members and community leaders), involved, as primary participants, the: two PCU physicians; two PCU nurses; PCU pharmacist; and, public health technical officer stationed at the PCU. The secondary participants consisted of the six persons with stroke warning signs and their families, who took part in Phase 2, as well as the nurse from the sub-district administrative organization and the 25 public healthcare volunteers. The strategies used, by the PI, during this phase involved three discussion sessions with all the participants and either two or three interviews with the six persons with stroke warning signs and their families. All discussion sessions and interviews were held in a room at the PCU. The purposes of the discussion sessions were to prepare the 25 volunteers to: obtain knowledge about stroke, stroke warning signs, basic stroke screening techniques, and appropriate stroke related healthcare; provide suggestions regarding collaboration between the PCU healthcare team and the community healthcare team; and, assist in further development of the integrated service delivery network formulated in Phase 2 of the development process. In addition, five of the 25 public health volunteers, who indicated having experience in improving patients’ health after they had experienced

stroke symptoms, were encouraged to share their experiences and to exchange information about their healthcare practices. The purpose of the interviews, which were carried out by either the PI or one of the primary participants, was to collect information regarding perceptions and management of stroke warning signs and benefits of healthcare services provided for stroke prevention. The interviews were not tape-recorded, but extensive field notes were taken for the purpose of recording the content of the interviews. The following questions, developed by the primary participants, were used to guide the interviews: “What have you learned about stroke warning signs?”; “What can be done to help you improve your ability to recognize and identify stroke warning signs?”; “What can you do to change your lifestyle so that you are practicing better stroke prevention?”; and, “What have you learned about continual assessment of your health status?” As a result of the information gleaned during the discussion sessions and interviews, the primary participants, the nurse from the sub-district administrative organization and several of the public health volunteers developed a plan for: shifting the healthcare delivery structure, from a total professional service delivery system to a participatory service delivery system, by using public health and community volunteers; and, screening persons with potential warning signs of a stroke by using the two physicians and two nurses from the PCU, and the public health volunteers. The public health volunteers were to: help with implementation and assistance in leading self-help groups that were to focus on self-management strategies for stroke prevention; and, assist in identification of persons, in the community, with stroke warning signs, by using the stroke screening criteria instrument developed in Phase 1, and referring them to the nurses in the PCU, who would refer them, if appropriate, to the physicians in the PCU.

Phase 4, extending the healthcare network to community members authorized by the healthcare team

to deliver healthcare services (i.e. contracting service unit, Buddhist monk, three leaders from the Peoples’ Sector, five leaders from the Family Health Volunteers; and, three traditional massage therapists), involved, as primary participants, the: two PCU physicians; two PCU nurses; PCU pharmacist; and, public health technical officer stationed at the PCU. The secondary participants included: the 15 individuals with stroke warning signs and their families; five of the 25 public health volunteers, because of their hands-on-experience in dealing with stroke victims; the five leaders from the Family Healthcare Network; and, the three traditional massage therapists. The strategies used during this phase included: a one-to-one interview with each of the primary participants, the leaders of the Family Healthcare Network and massage therapists; and, three discussion groups with the 15 individuals who had experienced stroke warning signs, and their respective families and the 25 public health volunteers. These strategies were used for the purpose of exchanging information and opinions about stroke prevention healthcare. The PI conducted all of the interviews and discussion groups in a room at the PCU. Examples of questions used to guide the interviews and discussion groups were: “How do we go about extending the healthcare network to community members authorized by the healthcare team to deliver healthcare services?” and “What information and opinions do you have regarding stroke prevention healthcare?” As a result of the interviews and discussion groups, with the primary and secondary participants, the outcomes that occurred were that the: PCU healthcare team engaged the core community members, which resulted in an increase in services being disseminated throughout the community; persons with stroke warning signs, as well as those at risk of a stroke, began receiving information about strokes and self-care management of strokes from both the primary and secondary participants (i.e., brochure on strokes and the healthcare manual developed during phase 1);

and, verbal information about strokes and stroke warning signs began to be disseminated throughout the community by both the primary and secondary participants.

### **Establishing trustworthiness**

The credibility of PAR is based upon the premise of maximizing involvement of all participants at some or all of the stages of the study.<sup>12, 13</sup> Triangulation of data was used to verify the accuracy of the information and outcome analysis of both stages of the research.<sup>13</sup> The research process, including the proposed and actual data collection process, was audited, by three experts in qualitative research who used thematic analysis, to ensure its visibility, comprehensibility and acceptability.<sup>14, 15</sup> The three experts were asked, as a form of peer debriefing, to provide feedback regarding the categories, subcategories and themes derived from the interview transcripts, field notes and memos. Agreement was sought, about the substantive meaning of the five main steps in the thematic analysis process,<sup>13</sup> by way of obtaining feedback from participants regarding their review of the accuracy of transcript statements.<sup>16</sup> The PI used triangulation to demonstrate confirmability and completeness by gathering information from multiple data sources, including individual interviews, observation, focus groups discussion and medical records, and field notes. Finally, investigator triangulation was demonstrated by use of more than one person to collect, analyze and interpret the data.<sup>13</sup>

### **Data analysis**

Data were analyzed using thematic analysis. Analysis was conducted by initially reading a transcription of each tape-recorded interview or discussion group, as well as the related field notes, to obtain a general overview of the content of the session. The transcribed sessions then were organized by way

of coding content that appeared to fall under a distinct theme. As the themes emerged, they were named for the purpose of identification. Relationships among the emerging themes also were examined. As the themes and their relationships emerged, the PI shared this information with the other research team members. In addition, for the purpose of confirmation, the thematic interpretation of the data was shared with select primary and secondary study participants.<sup>13</sup>

### **Results**

Three major outcomes occurred as a result of the study participants' situation analysis and development of primary health care services for stroke prevention, including: early identification and enrollment, in the healthcare system, of persons with stroke warning signs; delivery of healthcare to persons with stroke warning signs that was holistic and focused on continuity of care; and involvement of community members in the delivery of healthcare to persons with stroke warning signs.

Early identification and enrollment, in the healthcare system, of persons with stroke warning signs resulted in potential stroke victims receiving appropriate, consistent and timely care throughout each phase of their illness trajectory, especially during the early stages of the disease. This was accomplished through use of the plan for screening persons with potential warning signs of a stroke by the PCU physicians and nurses, and the public health volunteers. The public health volunteers, after identifying a person with stroke warning signs, referred him/her to the PCU nurses, who then would refer, if necessary, the person to the PCU physicians. Because of being enrolled in the healthcare system, persons with stroke warning signs were able to work, on controlling and dealing with their illness, in concert with members of the professional healthcare team and relevant public health/community volunteers. Using relevant public

health and community volunteers, as part of the primary healthcare delivery system, was important in the early detection and subsequent care of potential stroke victims.

Delivery of healthcare to persons with stroke warning signs, that was holistic and focused on continuity, was accomplished through development of: a stroke screening, criteria-based, instrument; guidelines for implementation of appropriate healthcare related to dealing with and preventing strokes; a healthcare manual that delineated how to manage one's health and lifestyle for the purpose of preventing a stroke; referral practice guidelines; activities that on fostered health promotion; peer-based assistance groups (i.e., self-help groups); and, plans, using both professional healthcare providers and members of the community, that focused on identification and screening of persons with stroke warning signs. The provision of healthcare services addressed not only the individual's needs regarding the actual illness, but also their particular lifestyles (i.e., Thai cultural issues and Buddhist practices).

Involvement of community members in the delivery of healthcare to persons with stroke warning signs was accomplished by: the PCU healthcare team engaging the core community members in activities related to healthcare delivery (i.e., self-help groups focused on self-management of care and prevention); and, dissemination of verbal and printed information (i.e., brochure on strokes and the healthcare manual developed during phase 1 of the development process) about strokes and self-care management of strokes from both the professional healthcare providers and community members authorized by the healthcare team to deliver healthcare services (i.e., contracting service unit, Buddhist monk, three leaders from the Peoples' Sector, five leaders from the Family Health Volunteers and three traditional massage therapists). By involving relevant community members in the delivery of healthcare not only increased the access of care to

persons with stroke warning signs, but also addressed care that was more holistic in its approach.

The fact it was possible to successfully develop services for persons with stroke warning signs, most likely, was due to a number of factors. Those factors included: the PCU healthcare providers positive attitude toward development of a program focusing on primary healthcare services for stroke prevention in persons with warning signs of stroke; an agreement among the PCU healthcare providers regarding what components of care needed to be included in the healthcare program; and, a positive attitude, among all study participants, toward collaboration in development of the primary healthcare program.

## **Discussion**

The data obtained during the situational analysis reflected the importance of developing the healthcare providers' ability to assess the presence of stroke warning signs among individuals, as well as assisting in access to appropriate healthcare. According to the literature, it is important to help persons with stroke warning signs to not only recognize the presence of the warning signs,<sup>17</sup> but also to gain access to appropriate healthcare services.<sup>18, 19</sup> Similar to prior research, the situational analysis in this study noted, among individuals and their families, the existence of a lack of knowledge and awareness about the danger of stroke warning signs, as well as a wide diversity of reasons for delaying access to care when stroke warning signs occurred.<sup>9, 17, 18, 19</sup>

During the situational analysis component of the study, the PCU healthcare providers were found to lack a sufficient stroke screening instrument and guidelines (practice and referral) for dealing with strokes. Without these necessary elements, the PCU healthcare providers were not adequately identifying persons with stroke warning signs. As noted in the literature, if healthcare providers are able to identify,

early, persons with stroke warning signs, these individuals are more likely to be treated in a manner that prevents serious illness ramifications of their illness.<sup>20, 21</sup>

Regarding development of the primary healthcare services for stroke prevention in persons with warning signs of stroke, a number of the approaches taken were consistent with those reported in the literature. These approaches included: increasing the knowledge level of persons with stroke warning signs, and their families, through: use of verbal and printed information;<sup>22</sup> creation of new approaches to care,<sup>23</sup> i.e. plans for early identification of individuals with stroke warning signs and delivery of stroke related healthcare; use of a multidisciplinary approach to care;<sup>24</sup> and, establishment of a network of professional healthcare providers and community members to share in the delivery of healthcare.<sup>25</sup>

### Limitations and Recommendations

When applying the findings, the limitations of the study need to be taken into consideration. The study participants were associated with only one primary health care unit that was located in one community within central Thailand. Thus, the proposed approaches taken can only be applied to primary health care units that are similar to the one used in this study. Thus, future research needs to consider the use of multiple primary care study sites that are located in various geographical areas throughout Thailand.

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# การพัฒนาการบริการสุขภาพปฐมภูมิเพื่อป้องกันโรคหลอดเลือดสมอง สำหรับบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมอง

พรปวีณ์ ชื่นใจเรือง, วรรณภา ศรีชัยรัตน์

**บทคัดย่อ:** การวิจัยเชิงปฏิบัติการนี้มีวัตถุประสงค์เพื่อพัฒนาการบริการสุขภาพปฐมภูมิเพื่อป้องกันโรคหลอดเลือดสมองสำหรับบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมอง ซึ่งทำการศึกษา ณ ศูนย์สุขภาพชุมชนแห่งหนึ่ง ในภาคกลางของประเทศไทย ระหว่างเดือนธันวาคม 2552 – ธันวาคม 2553 การดำเนินการวิจัย แบ่งเป็น 2 ส่วน คือ 1) ส่วนของการวิเคราะห์สถานการณ์ ประกอบด้วย การวิเคราะห์ประเด็นที่ต้องการพัฒนาการบริการสุขภาพเพื่อป้องกันโรคหลอดเลือดสมองสำหรับบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมอง การวิเคราะห์ปัญหาและความต้องการการบริการสุขภาพของบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมองและครอบครัว และการระบุปัจจัยสำคัญที่เอื้อต่อการพัฒนาการบริการสุขภาพปฐมภูมิสำหรับบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมอง และ 2) **ส่วนของกระบวนการพัฒนา** ประกอบด้วย 4 ระยะ คือ 1) ระยะสร้างความตระหนักและความต้องการในการพัฒนาบริการ 2) ระยะสร้างความร่วมมือในการพัฒนาบริการ 3) ระยะขยายเครือข่ายการพัฒนา และ 4) ระยะขยายแนวร่วมบริการไปสู่แกนนำภาคประชาชน **ผลลัพธ์ของการพัฒนา** มีดังนี้ 1) **บุคคลที่มีอาการเตือนของโรคหลอดเลือดสมองและครอบครัว** เข้าถึงการบริการสุขภาพปฐมภูมิและได้รับการบริการอย่างต่อเนื่อง เป็นองค์รวม และสอดคล้องกับความต้องการในแต่ละระยะของวิถีการเจ็บป่วย 2) **บุคลากรทีมสุขภาพ** มีทีมเครือข่ายการบริการสุขภาพปฐมภูมิ ทั้งที่เป็นทีมสหสาขาวิชาชีพ ทีมเครือข่ายภาคประชาชน พร้อมทั้งบุคคลที่มีอาการเตือนและครอบครัว และมีการพัฒนาแบบประเมินและแนวปฏิบัติในการจัดบริการ และ 3) **องค์กรให้บริการสุขภาพปฐมภูมิ** ได้รูปแบบบริการสุขภาพปฐมภูมิโดยการมีส่วนร่วมของชุมชนสำหรับบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมอง **ปัจจัยสำคัญ** ที่เอื้อต่อการพัฒนาการบริการสุขภาพปฐมภูมิสำหรับบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมองในศูนย์สุขภาพชุมชนครั้งนี้ คือ 1) ทักษะเชิงบวกของบุคลากรสุขภาพต่อสถานการณ์ 2) แนวคิดการบริการที่สอดคล้องกันของบุคลากรทีมสุขภาพ 3) ความร่วมมือของเครือข่ายภาคีหุ้นส่วนในชุมชน 4) นโยบายการพัฒนาการบริการสุขภาพ จากผลการศึกษาชี้ให้เห็นว่า **ความตระหนักและความเข้าใจในอาการเตือนของโรคหลอดเลือดสมอง** ของบุคคลที่มีอาการเตือนของโรคหลอดเลือดสมองและครอบครัว รวมทั้งบุคลากรทีมสุขภาพ และการมีส่วนร่วมของชุมชน ช่วยให้ผู้ที่มีอาการเตือนของโรคหลอดเลือดสมองสามารถจัดการตนเองและเข้าถึงบริการสุขภาพที่มีคุณภาพได้

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