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Community-based Health Information and Communication (CBHIC): A Proposed Model for Thailand

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ABSTRACT

The present study is to work out a suitable model for community-based data collection and education, keeping public library network at the locus of the model. The study has reviewed the profile of Thailand with regards demographic data and healthcare delivery system particularly at grass root level. The study analysed the existing status and activities of public library network, its building blocks and framework for data-collection and education of the community..

Keywords: Community-based information, health information, health systems, health literacy, healthcare delivery system, Thailand

1. INTRODUCTION

The community-based health information and communication (CBHIC) have two components:

(a) Understand the 'community need' by collecting the community data and

(b) 'Reflective education' to the community and create informed society.

The decision about the health by the community member, either to choose a suitable healthcare facility or to take care of their own health they need to the knowledge of the system and awareness to find the suitable solution. The present study is to work out a suitable model called 'CBHIC', as a two-way communication and information exchange model between community and service providers, also as an intermediary system between community and providers of health. The proposed model considers grass root level workers as executive for collecting community data and distribution/dissemination of health information/education materials. Embed information as an integral part of delivering healthcare through the entire healthcare system. Information should be delivered in tandem with care provision and not as an 'add-on' through primary care to secondary and specialist services[1]. At the same time, it is perceived that grass root level workers also are learners about provider's system as well as community needs. Today's health educators are not only teaching health effectively, but also assessing the needs of target populations including planning, implementing, and evaluating programs (NCHC 2007). The health service planning and evaluation depends mainly on knowledge of resources and local community data/information[2], such as size and structure of population; areas of met and unmet need; incidence and/or prevalence of disease(s), effectiveness of interventions available; relative cost-effectiveness; including capacity, quality, effectiveness, efficiency and political priorities.

At present, due to information communication technology (ICT)-based information and communication, it can be called as 'internet society' which is synonymous to 'information society', due to ubiquitous access to information through internet. The ICT supplements and compliments the proposed CBHIC in improving the efficiency of both 'collection of community data' and 'timely dissemination/distribution' of health education materials. However, ICT or internet cannot replace the traditional human system, particularly at rural level, as internet facilities or use of Internet by the community is not up to the expectation due to many barriers like language, literacy, availability of ICT facility, and access skills.

2. HEALTH SYSTEM

The good health care system delivers quality and informed services to all the people with a well-trained manpower, well-maintained facilities, robust financing mechanism, and reliable information for making decision and policies[3]. The system to have balanced management of facilities, use of proper technology, medical devices, acquiring community data to understand the needs of the community

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and educate community to take care of their own health, 'providing equitable access to people-centered care'[4], 'using good health technologies'[5] and 'medical devices for taking care of access to low and middle-income people'[6] through primary healthcare system having a reliable all-round general practitioner to treat minor medical problems.

3. COMMUNITY-BASED DATA COLLECTION

The data collection has been undertaken in almost all the sectors, wherein each sector is confining to their aims, objectives, and functionaries at grass root level. There is very less collaboration among various sectors in data collection, data sharing, or leveraging common infrastructure and sharing expertise, though some of the baseline data are common to all the sectors. The lack of collaboration and cooperation among the sectors has led to duplication of data, expenditure, and efforts thereby, creates a significant burden and distracts the workers from their regular services. At present, the community data collection and consolidation is undertaken from local data sources, specialised survey, routine local and/or national statistics, adhoc data, and relevant published surveys about trends in incidence and outcome. The data is also extracted from hospital-based clinical records which have many limitations due to inconsistency in coding, legal restrictions on using personal data, timeliness, and its comprehensiveness. Hence, there is a requirement to establish inter-sectoral cooperation with proper coordination and cooperation.

The community data collection includes population-based data (census, household surveys, and vital registration systems), facility-based data (public health surveillance and health services data) and system monitoring data (human resources, health infrastructure or financing). The comprehensive community database can be developed by including various other isolated sources of data and stand-alone disease surveillance systems, private sector, logistics management systems, and emergency response systems. The community-based data collection, consolidation and uploading makes database automatically as a fully comprehensive and integrated national database that suits to all sectors at all level. Of course, the sustainability of the community-data systems is depending on better information management tools and mechanism to properly capture data through routine operations of each sector. The application of ICT can be effectively used for better inter-sectoral cooperation, data flow, data utilisation and integration in collaborative works, as if it is available in a single database.

3.1 Community-based Health Education

The quality of healthcare utilisation and desired health outcomes are usually consistent if professionals and consumers of health are updating their knowledge[7]. There are many concepts targeting community education like health education, patient education, and health literacy. Health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health[8].

There are many forms of delivering health messages in traditional and print environment like street theatre, folk theatre, posters, pamphlets, and hoardings which have limited effects on the rural community due to many barriers[9]. It is very important to convey the correct messages to the community; otherwise, it will have disastrous after-effects. To cover all the community, at various levels like individual, group, institutional or community level, community-based activity is more suitable. Health education and information materials are available, both in print (traditional) and electronic media, are becoming part of the library collection of healthcare institutions. Some of the education materials are accessible directly to the needed community member and some are disseminated through health workers or libraries. The health education is also provided through schools, workplaces, public health settings or other educational settings of the community.

One mode of community education can be based on their ailment or therapy and is an excellent way to build doctor-patient relationship. Patient education is the process by which health professionals and others impart information to patients that will alter their health behaviours or improve their health status. In a broader sense, health education is a tool used by managed care plans, and may include both general preventive education or health promotion and disease/condition specific education[10].

3.1.1 Health Literacy

Health literacy is recognised as an important activity in the process of care or cure. Many forums like Healthy People 2010, AMA Foundation, etc., defines health literacy as 'the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions'. The AMA Foundation defined it as 'The ability to read, understand, and use health information to make appropriate healthcare decisions and follow instructions for treatment'. Rootman[11], et al., defines as, 'The ability to access, understand, appraise and communicate information to engage with the demands of health contexts to promote health across the life-course'. These definitions are ultimately treading from specific task 'functional health literacy' to 'community health literacy' with a spirit of holistic-approach in educating consumers for healthy living. Also the study

perceived the value of information is perceived as 'information is solution and information is money' if it is at right time, to right people in a right media-mix and manpower-mix considering varied approach, barriers and understanding level of the users[12]. It was highlighted that the community-based model for health literacy depends on various factors such as sensitivity, awareness, accessibility, and use of health information resources and sources for clarification of their doubts. There are many studies, viewed health literacy in context of adult literacy or actual literacy of the community. It is required to recognise health literacy as part of Information Education Communication (IEC) programme, school health programme or adult literacy programme as inter-sectoral community education activity/programme.

In context of health literacy, consumers are expected to obtain, use, understand and put knowledge obtained into action so that each one will have capability to take appropriate healthcare decision. In this context, health literacy is defined as "it enables community to participate in health care system as an informed consumer of health, instead of passive follower of instruction from the health care staff"[13]. It is pointed out that higher the health literacy, more and sensible usage of health care services. Many studies have considered health literacy as an integrated activity in the process of care or a separate careful activity.

In the context of health literacy, there are two kinds of information-prescribed information to a particular patient and general information about the facility, procedures and preparedness including technical information about the ailment and the prescribed medicine. Doctors and their supporting staff are to concentrate on prescription of information. Libraries, alongwith health education professionals are to concentrate on general information about the facility, procedures, and preparedness including technical information about the ailment and the prescribed medicine. This study suggests that tailor-made printed and user-friendly literature along with training 'how to use the materia' is appropriate. In developing countries like India and Thailand, majority of the patients and their spouse tend to discuss about health with family members, friends or relative to check whether the treatment received is appropriate or not.

4. HEALTH SYSTEM IN THAILAND

As per the Federal Research Division Country Profile[4], Thailand is divided into 76 provinces, 877 districts and 7255 sub-districts. In 2006 Thailand's population was 64,631,595 with growth rate at 0.68 %, 19th most populous country in the world. The net migration rate is 0 %. In 2005 about 68 % of the population lived in rural areas and 32 % in urban areas. As per 2006 data, 22 % are less than 15 years of age, 70 % are 15–64 years of age, and 8 % are 65 and older. As per Ministry of Public Health, the birth-rate was 13.8 births per 1,000 populations and a death rate of 7 deaths per 1,000. In 2006 life expectancy was 74.6 years for women and 69.9 years for men, or nearly 72.2 years total. The infant mortality rate was estimated at nearly 19.4 per 1,000 live births in 2006[15].

The Ministry of Education, Thailand [16], supervises public and private education, from October 2002. Free basic education to student's, nationwide, is up to 12 years: six years of primary education beginning at age six or seven, followed by three years of middle school and three years of high school, ending at age 18. Education has been compulsory through the ninth grade (from age 7 to 16) since January 2003. With the addition of two years of preprimary schooling, the length of education was extended to 14 years in May 2004. In 2006 an estimated 96% of students completed grade six, 80% completed grade nine, and 79% completed grade-12.

4.1 Healthcare Delivery System in Thailand

Health system in Thailand operates under three levels:

(a) Sub-district health centers,

(b) District hospitals, and

(c) General/regional hospitals.

Sub-district health centers cover approximately 5,000 people; district hospitals cover about 50,000 people. District hospitals also serve as a link between health centers and upper-tier general or regional hospitals by referral systems. In addition, there are a number of private facilities spread throughout the country, which are concentrated more in urban areas[17].

The health system[18] evolved since the early 1960s, first three national plans (during 1961-1976), and 4th National Health Plan (during 1977-81) focused mainly on primary health care and 'Health For All by the Year 2000', 5th National Health Plan (during 1982-1986) continued primary health care strategies and initiated community health care (Pagaiya 2007)[19]. During the 6th and 7th National Health Plans (1987-1996) geared up toward the development of health infrastructure, health technology and producing more health workers to make primary healthcare facilities more accessible to people. In 8th National Health plan (1997-2001) adopted the decentralisation to local authority Act and emphasised a holistic approach to health promotion and continued throughout the 9th National Health Plan (2002-2006). The 9th National Health Development Plan stressed more on provincial health system which includes provincial, district and sub-district levels, to provide accessibility for all within the provincial health system.

Universal coverage scheme in Thailand[20], instituted in 2001 and restructured information system to support the scheme by Ministry of Public Health (MOPH) which includes doctors, nurses and primary care workers (PCWs) in Thai rural health system. Doctors as clinical experts, nurses as middle-level care providers to fill in gaps if found shortage of doctors and primary care workers to cover prevention of disease, promotion of health and to provide suitable accessibility for care to the community of the Thailand. There were 868 hospitals and 9,738-community health centres. The first-line units (first point-of-contact) for community coverage are sub-district (Tambon) or village-level health service unit, covering a population of about 1,000–5,000 where staff includes a health worker, a midwife and a technical nurse[21]. Thailand's health care system incorporates the private and public sectors, regulated by the government. The governments take care of infrastructure and private sector operates 50% of hospitals, which receive US$ 26/year/patient from the government[22]. The grass root level has collaboration of local employers and provincial health authorities. The skill-set expected in the programme are like qualitative and quantitative research methodology, programme evaluation and strategic planning, management and applied research skills, preparation of proposal and report writing skills including communication skills. The inter-sectoral rural-level integration in Thailand includes environmental conservation such as bio-diversity, deforestation, soil erosion, and environmental pollution directly through community education and collaboration and hands-on conservation work. Thailand also has volunteer programmes, as a part of village-based programmes, by promoting mutual friendship, to enrich their own experience and making a meaningful contribution. The volunteer programme supports following various activities[24]:

- Development of medicinal plants, local farmers with crop development and seed distribution, assist in erosion control planting efforts, or maintain local nurseries.
- Work with local villagers or other volunteers in activities such as sowing, mulching, watering, weeding, and farming.
- Help children to share English skills and teaching talents at elementary school children ranging in age from 6-13 years. Many schools lack the funds to provide effective English language training. Native or fluent English speakers with or without formal teaching experience can contribute greatly to a child's educational development.
- Volunteers who choose health education will have opportunity to work in a variety of different projects located in or near Bangkok such as disabled children.
- Learn the basics of Thai massage and then use their new skills to help the children with their disabilities.
- Stay with carefully chosen host families who live near to the project site. Some of the projects are residential, where volunteers stay on the project site.

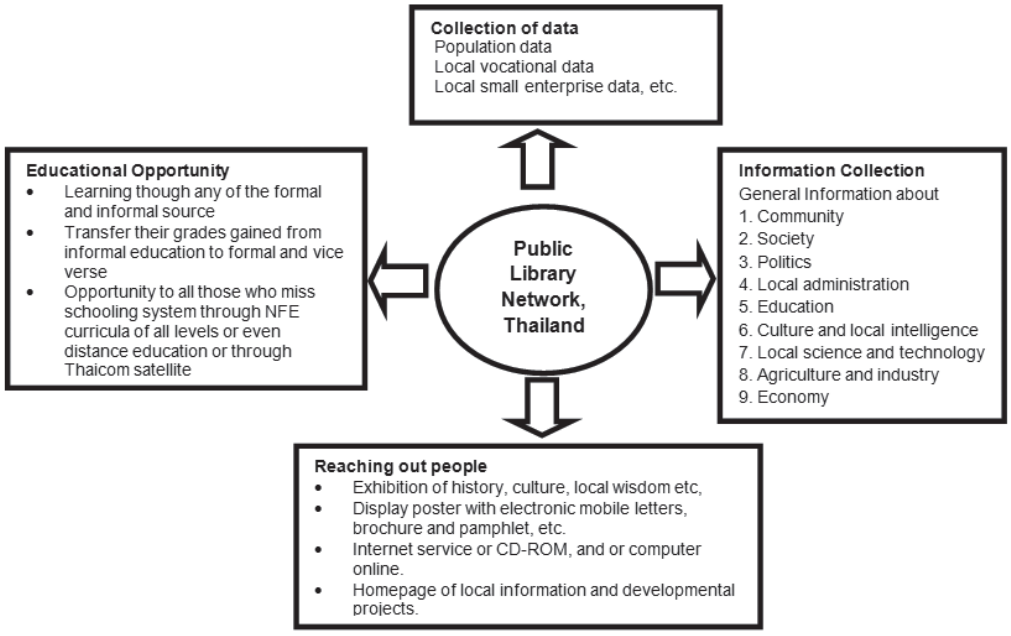

Figure 1. Activities of public library networks in Thailand.

5. PUBLIC LIBRARY NETWORK

There are two choices in integrating community-based information system– 'primary health care centers' or 'public library system'. In fact, public libraries are the social institution and cultural center, at grass root level, and are first point of contact for all kind information and communication in any country. In Thailand, Public library network has already partially integrated for data collection and information service. As per Lerdsuriyakul, Kulthorn (1999), Public library[25] was established in Bangkok in 1916 by the Education Department, evolved through Ministry of Education, in 1949, to inculcate reading and learning habits, had 20 public libraries in various provinces. Later in 1950 increased to 64 public libraries, expanded in 1952 to district level. In 1973, added as an educational unit to the Adult Education Division of General Education Department and developed programs around non-formal education for promoting reading and learning habits and to disseminate culture. Later in 1979, public libraries got formal status and became part of department of Non-Formal Education (NFE) including Provincial NFE Center. The real transformation of public libraries was in 1992 by making them as Community Information Centers, led to development of community learning network. In 1999 public library system had 850 public libraries all over the country. The existing activities of public library networks at Thailand are:

5.1 Educational Opportunities in Public Library Network

District and sub-district public libraries are recognised as learning centres

(a) Learners can learn through any of the formal and information source

(b) Learners can transfer their grades gained from informal education to formal and vice versa

(c) Opportunity for those miss schooling system and through NFE curricula or distance education or Thaicom satellite

(d) Provide access to educational material for those disadvantaged or older citizens or socially isolated or have limited access to educational material,

5.2 Collection Community Data

The public library networks have responsibility to collect information in nine accounts:

(a) General information of community

(b) Society

(c) Politics and local administration

(d) Education

(e) Culture and local intelligence

(f) Local science and technology

(g) Agriculture

(h) Industry and

(i) Economy.

5.2.1 Data Type in Collection

Data file in the form of document and pictures classified by sub-district or types of data, such as population data, local vocational data, and local small enterprise data, etc.

5.3 Dissemination/Education of Community

There are various method and mode of community education:

- Exhibition of history, culture, local wisdom, etc.
- Displayof poster or circulating brochure and pamphlet, etc.
- Internet service or CD-ROM, and/or computer online
- Creating homepage of local information and developmental projects (initiated by His Majesty the King for dissemination on Internet by all provincial public libraries, 'Chalermrajgumary' public libraries)

5.3.1 Mobile Floating Library (introduced in 1999)

- To promote reading and learning of people living along the rivers and canals in terms of books, toys, videos, and exhibitions
- Various practically useful learning packages like
  - Preservation of water resources to make people realise and participate in keeping their rivers, canals, and their environment clean.
  - Problems like drug, family, election, villagers' law, environmental reservation, as well as the way to perform jobs, etc.
- Proposed to start multimedia learning systems at village/local levels on internet, with trained librarians to help them
- Host a bulletin board where activities can advertise to a group of like-minded people or a self-help group, for free
- Helps to a small-business owner, such as an alternative therapist, to place a leaflet about their services
- Librarians help people to find the contact information or suitable health faculties.

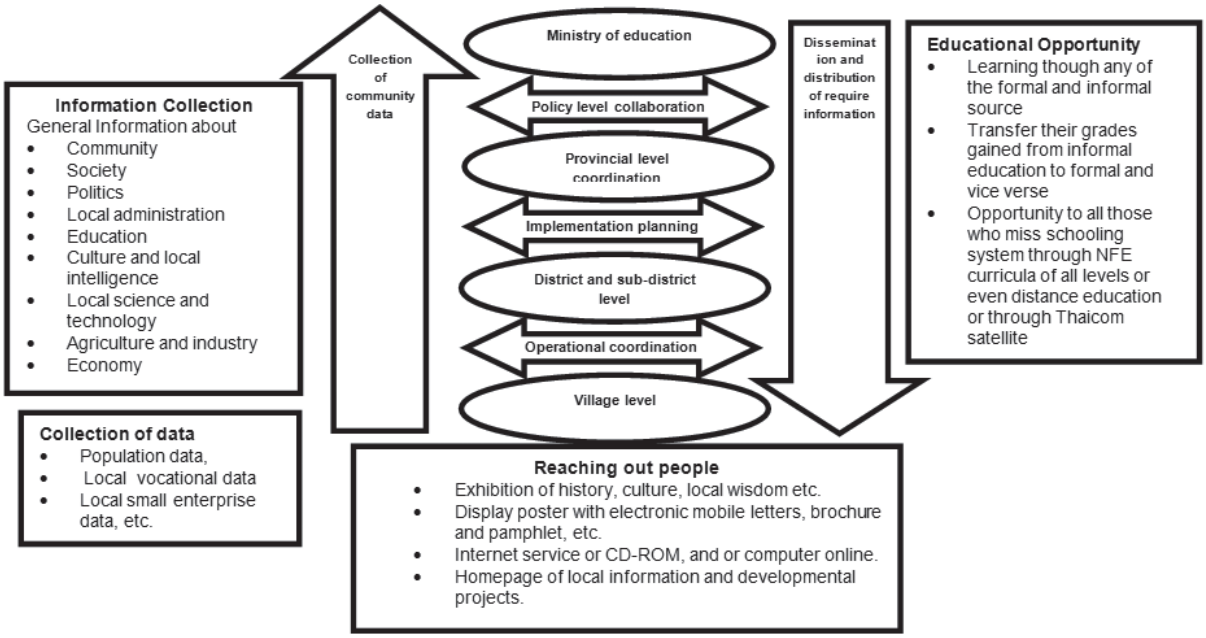

Figure 2. Proposed community-based health information and communication (CBHIC) model.

6. PROPOSED CBHIC MODEL

The proposed model (Fig. 2) is an inter-sectoral collaboration model at all level, i.e., from grass root to national-level, to encourage solidarity through collective action, pooling of data, avoid duplication of efforts and expenditure, and ultimately to help community participation and self-reliant development.

6.1 Need for CBHIC

The existing system has the problem at linking and interacting with various related sectors to develop networks, partnerships and alliances at grass root level and other levels of information landscape. Majority of the sectors, are focusing their work on a single system or a single objective, which led them to work in isolation without knowing what other system/sectors are duplicating its effort, data, service and thereby waste of operating costs. Due to lack of integrated approach it is unlikely to pay attention to common and related activities of the other sectors, which can help to supplement or complement the work. The existing grass root level systems are having weak correlation to improve the efficiency, equity of access and quality of public services in general.

6.2 Objectives of CBHIC

The proposed system, not to replace the existing system, enhance the capability of the existing machineries, workforce for consolidation of knowledge required/acquired for the programme and impart orientation to workforce of all participating sectors. In the process, collaborative system will

- Identify the gaps in knowledge
- Identify the plug points to integrate activity between the systems
- Develop a better institutional capacity around public library system.

The joint effort at grass root level, helps for 'getting more value for money and effort' and will focus on improving equity of access to services, effectiveness of care, efficient utilization of resources, satisfaction of users, and sustainability. The integration interface strengthen one-another in producing the better output, through their 'technical' and 'allocated' efficiency in productivity and the best use of resources from given inputs. The ICHIS needs to address issues based on the needs of the community rather than demands, reflective to their expectations thereby achieve equity of access to all the community.

6.3 Inter-sectoral Collaboration

The inter-sectoral collaboration of all level is pictorially presented (Fig.3), to be developed from grass root level to policy level, where collection of community data is down-top approach; and the development and dissemination of community education material with top-down approach.

The proposed model identifies the specific problems and needs of the community through data collection and consolidation, as a first step, before planning and formation of group process, with the objective to tackle community and sub-community problems. Once the formation of groups reaches a certain level of maturity, in terms of interaction skills, group cohesion, and the proven ability to manage group programmes successfully, provide access to inter-group process and external mechanisms to further enlarge scale of interaction. These groups

perhaps becomes the basic 'building blocks' in building a broader community and strengthening process with wider horizontal and deeper vertical ties. Once groups are stable and operational, they are encouraged to link together in inter-group or inter-sectoral groups so that they can solve bigger problems and strengthen the power of the community participation and creation of 'informed society'.

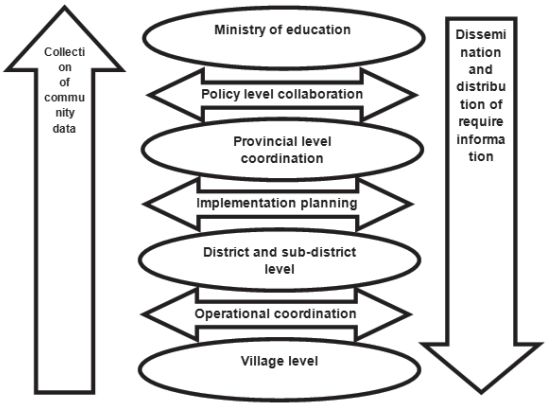

Figure 3. Inter-sectoral collabortive model.

6.4 Data Collection Model

The model (Fig.4) provides the details and step-by-step approach, at the collaboration.

6.5 Benefits of CBHIC

There are many advantages, may not be available straight away, to be derived and evolved:

- Transcend the limitations of acting in isolation and location-specific plan and action, both horizontal as well as vertical collaboration and networking, with all sectors for collection of data though grass root level functionaries and develop a database to perceive common goal, both at grass root and decision making level.
- To develop community profile, considering the family as a unit, to identify the needs of the community and strengthen the sense of community
- Helps to avoid unwanted competition to achieve the same results from different sectors/system
- Helps to include function and capability of all participating sectors, individually as well as collectively and collaboratively
- Helps to shape the process, workforce and participation for sharing of resources (financial, physical and human resource) to achieve equitable access of services of each sector participating in the integrated activity
- Capacity building to complement or build upon locally existing institutions and organisations rather than replace them.

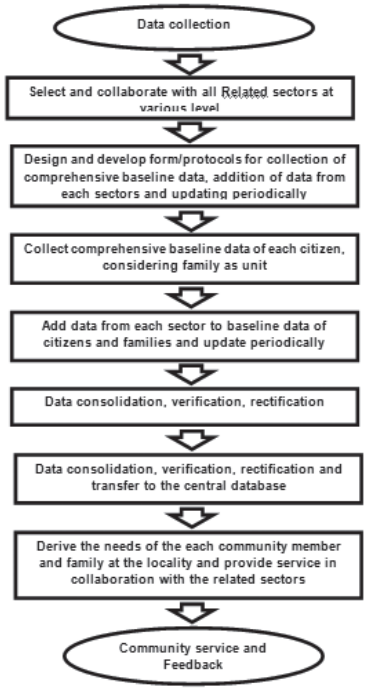

Figure 4. Data collection model.

6.6 Institutionalisation around Public Library Network

The collaborative and integrated choice forms new organisational structures and relationships, to meet the community needs, where health becomes the component of bigger community system.

- CBHIS requires institutionalisation around public libraries network for strengthening local information system
- Library will serve as support organizations at various levels (both horizontal and vertical level frameworks) for training, consolidation of community data and health education materials, including administrating group formation process and lobbying for local level institutions.

Team building and group formation processes will have to focus on demand-driven skill development such as building collaboration with related sectors and technical skills for collecting community data and creating community profile, matching profile to suitable literature both online and offline, strengthening the collective learning, problem-solving, and collective management skills.

As the content is important and requires continued input to the system, libraries are more convenient place for the community to reach both for providing data or to seek learning materials about any aspects. As librarians have been trained in profiling users, preparing proper documentation and matching of the information requirement for reflective to the needs (identified from the users profile) of the community or individuals, it would highly helpful to institutionalise the inter-sectoral

function in context of data and education. Of course, librarians need additional training in identifying the related resources, organise/mobilise communities for action, advocate health related issues, use a variety of education/training methods, develop audio, visual, print and electronic materials. Some of the activities or additional competencies for librarians are like health need assessment, program planning, implementation and evaluation; service coordination; and resource communication to achieve better participation of community with health system. In the proposed system, grass root level workers of all sectors functions as executives/implementers.

7. CONCLUSIONS

The present information landscape has blurred the lines among data, information, and knowledge, as information is directly accessible to people. In Thailand, attempts have been made to establish information system using IT and telemedicine to reach and to achieve two objectives:

(a) Imparting knowledge to health workers and

(b) Collect community-based data.

Many studies found that there is moderately high degree of acceptance of health information technology, with a modest level of basic IT knowledge, by the staff of the health system at grass root level, no community reciprocation. Also studies suggest that there is a requirement to introduce innovative approach to implement IT-based solution to reach community through rural system and to collect community data, timely. There is need for detailed research on developing data input forms, data consolidation, interface building among the related sectors and ongoing data updating process.

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