

DEVELOPMENT OF A RESOURCE MANAGEMENT CURRICULUM FOR INTERMEDIATE CARE IN A COMMUNITY IN HEALTH REGION 1 (THAILAND)

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ABSTRACT

OBJECTIVE:

This action research aimed to develop a resource management curriculum for intermediate care in a community in Health Region 1 in Thailand.

MATERIAL AND METHODS RESEARCH:

The study involved 80 intermediate care (IMC) administrators, 13 experts, 260 IMC nurses, and 155 individuals who completed the training. Data were collected using various methods, including surveys, interviews, and questionnaires. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed using content analysis.

RESULTS:

The findings revealed several key points. First, the IMC management model was primarily based on local administrative organization guidelines, with issues identified in personnel knowledge, human resources, budget, and equipment. Second, the curriculum, consisting of 27 lessons and 35 hours, was developed and validated by experts and the Thailand Nursing and Midwifery Council. Third, participants showed a significant improvement in test scores after training, with a mean score increase from 23.12% to 40.75%, and expressed high satisfaction with the training ($\bar{x} = 4.42$, $SD = .447$). Finally, clinical data from the National Health Security Office indicated that 50.24% of IMC patients experienced improved ADL after the training, reflecting the curriculum's effectiveness.

CONCLUSION:

The study suggests that policies should be formulated to make the curriculum a key task for local administrative organizations. The curriculum should be used as an indicator for personnel management at all levels, with continuous monitoring and evaluation to ensure its effectiveness. The findings underscore the importance of comprehensive training that covers all areas and personnel levels, with regular reviews and updates to maintain high standards of care.

KEYWORDS

curriculum, intermediate care, intermediate care in community, management, action research

INTRODUCTION

Thailand's long-term care landscape is facing significant challenges, as evidenced by data from the Department of Health indicating that 446,903 individuals require rehabilitation and dependent care. This surge has led to an increase in patients with physical disabilities, creating difficulties for those seeking rehabilitation services post-hospitalization due to overcrowded facilities [1]. In response, the Ministry of Public Health has implemented policies aimed at enhancing the health service system, with a particular focus on medical services to address these issues and improve the quality of community hospitals. Recognizing the importance of intermediate care in the community, the Department of Health has prioritized the development of a system for patients who have stabilized but still face limitations in their daily activities. This approach emphasizes medical rehabilitation services and strengthens the connection between hospitals and communities, aiming to enhance physical and mental performance, reduce disability, improve social reintegration, and alleviate the burden on families and society [2].

The demand for patient care in healthcare facilities arises in accordance with the increasing prevalence of diseases, leading to a continuous increase in the number of patients with physical and mobility impairments. As a result, more patients are seeking services at tertiary hospitals, causing overcrowding and long waiting times for treatment. This congestion is evident in regional hospitals (RPH), general hospitals (GH), and community hospitals (CH). The referral system for other groups of patients is inadequate and complicated, leading to various complications in managing these patients [2].

Access to acute stroke rehabilitation services for inpatients at regional hospitals shows that only 18% of stroke patients receive rehabilitation. Most patients are discharged immediately after the critical phase, in line with the Diagnosis Related Group (DRG) policy aimed at reducing hospital stay duration. Additionally, doctors often assume that patients can receive rehabilitation at nearby community hospitals, but there is no clear referral system. Moreover, patients and their families do not understand or recognize the importance of rehabilitation. Once home, families often find that they are unprepared to provide care, lack the skills for complex tasks, such as physical therapy, and need assistance with basic daily activities.

They also lack the necessary equipment for patient care [2].

The concept of intermediate care has been increasingly studied to fill gaps in the healthcare system. Intermediate care refers to the rehabilitation of patients whose clinical symptoms have stabilized but still have some physical abnormalities and limitations in performing daily activities. These patients require ongoing medical rehabilitation services provided by a multidisciplinary team, connecting care from the hospital to the community and family. This approach aims to enhance physical and mental abilities for daily activities, reduce disability, and facilitate patients' reintegration into society at full potential. Intermediate care involves developing services and promoting a better quality of life for patients, reducing the number of bedridden patients, and alleviating the healthcare burden on families and societies. It ensures that patients and their relatives receive timely and continuous rehabilitation in areas where such services are regularly provided without needing to travel to a hospital for rehabilitation [2].

Health Region 1 in Thailand encompasses eight provinces located in the upper north of the country: Chiang Rai, Chiang Mai, Nan, Phayao, Phrae, Mae Hong Son, Lampang, and Lamphun. In 2023, there were 210,820 intermediate care (IMC) patients nationwide, with Health Region 1 accounting for 19,147 cases, ranking third highest in the country. The primary challenge faced is the insufficient number of IMC beds. Health Region 1 has a total of 163 IMC beds, resulting in a high patient-to-bed ratio of 117 patients per bed. This situation leads to hospital overcrowding and inadequate services to meet patient needs.

The development of community-based IMC services has been proposed as a potential solution to this problem. However, the government has yet to establish clear policies to support the development of this system. The focus on Health Region 1 is driven by the identified need for improved IMC services and its potential to serve as a model for other regions in Thailand [3].

The successful implementation of IMC in the community relies on the effective management of key resources: human resources, finances, materials, and overall management strategies. However, the varying approaches to IMC management across different community organizations have resulted in inconsistent

patient service standards. To address this issue, a curriculum based on the 4M management framework (Man, Money, Material, and Management) has been developed to standardize community-based rehabilitation and optimize patient care efficiency [4].

OBJECTIVE

This study aims to develop a resource management curriculum for IMC in Health Region 1 of Thailand. The research seeks to address gaps identified in previous studies, such as the lack of standardized management approaches and the need for improved rehabilitation services. Additionally, the study will explore potential quality indicators (QIs) for IMC to assess the curriculum's effectiveness.

MATERIALS AND METHODS

STUDY DESIGN

This study employed an action research and explanatory sequential design based on the PAOR (Plan, Act, Observe, Reflect) model of Kemmis & McTaggart [4]. The research methods were classified according to specific objectives consistent with the PAOR model. The study was conducted in Health Region 1, which includes eight provinces: Chiang Rai, Chiang Mai, Nan, Phayao, Phrae, Mae Hong Son, Lamphun, and Lamphun.

STUDY PROCESS

The study followed the PAOR model, a cyclical process involving planning, acting, observing, and reflecting. By following this structured approach, the study aimed to develop a standardized and effective resource management curriculum for IMC in the community, ensuring better patient outcomes and more efficient use of resources. This model ensures continuous improvement and adaptation based on feedback and results at each stage, which are presented in each phase below.

Planning Phase: Identifying and analyzing the current issues in IMC management.

- Objective: To analyze the current situation and problems in the IMC in Health Region 1.
- Population and Sampling: The population consisted of 99 IMC administrators. Using Krejcie and Morgan's table, 80 administrators were selected through one-step cluster sampling.
- Data Collection: Data were collected using a single cross-sectional method. A questionnaire was used to gather information on IMC management, divided into

three parts: general information, opinions on IMC management, and satisfaction of service recipients.

- Instruments: The instruments included a questionnaire and a structured interview form.
- Data Analysis: Quantitative data were analyzed using mean, standard deviation, percentages, and frequency distributions. Qualitative data were analyzed using descriptive summaries.

Acting Phase: Developing and implementing the curriculum based on expert input.

- Objective: To develop a resource management curriculum for IMC in the community.
- Population and Sampling: The population consisted of 13 experts. Brainstorming meetings were held to gather expert opinions and recommendations.
- Data Collection: Data were collected from meeting minutes and expert opinions.
- Instruments: The instruments included meeting minutes and questionnaires on curriculum guidelines.
- Data Analysis: Qualitative data were analyzed using content analysis. Reliability was determined by 13 experts using Cronbach's alpha, with an IOC = 0.92.

Observing Phase: Monitoring and evaluating the curriculum's effectiveness through pre- and post-training assessments.

- Objective: To evaluate the application and improvement of IMC in the community.
- Population and Sampling: The population consisted of 260 IMC nurses selected using convenient or volunteer sampling from 769 subdistricts in Health Region 1.
- Data Collection: Data were collected using pre- and post-training tests and satisfaction assessments.
- Instruments: The instruments included a learning achievement test with 50 questions and a satisfaction assessment using a Likert scale.
- Data Analysis: Quantitative data were analyzed using a paired-samples t-test to compare pre- and post-training scores. Satisfaction was measured using the mean and standard deviation.

Reflecting Phase: Analyzing the outcomes and making recommendations for future improvements.

- Objective: To analyze the summary of results and recommendations after using the IMC curriculum.
- Population and Sampling: The population consisted of 155 individuals who completed the training. The individuals were selected through convenience sampling.

- **Data Collection:** Data were collected using evaluation forms on behavioral results and opinions, and an improved ADL Intermediate Care Report Form.
- **Instruments:** The instruments included evaluation forms and clinical data from the National Health Service Organization (NHSO).
- **Data Analysis:** Quantitative data were analyzed using percentages, means, and standard deviations. Qualitative data were analyzed using content analysis.

Lampang, where joint management included network partners, subdistrict health promotion hospitals, temples, and the local community.

- IMC personnel were divided into full-time and rotating staff from community agencies. Registered nurses played a crucial role in management, and village health volunteers (VHVs) provided 82.8% of services. The primary source of funding for management came from LAOs.

ETHICS CONSIDERATIONS

The research emphasizes ethics and sample protection. Ethics approval was obtained from the Human Research Committee from Sirindhorn College of Public Health, Chon Buri, COA.NO 2021/T14, COA.NO 2023 T09 on 27 May 2022.

RESULTS

The results of this study are presented according to the PAOR model, providing a clear and systematic overview of the findings from each phase.

PLAN PHASE

Objective: To analyze the current situation and problems in the IMC in Health Region 1.

Findings:

- The survey revealed two types of management structures: single organization and joint organization. Local Administrative Organizations (LAOs) were the lone primary organizations in every province except

ACT PHASE

Objective: To develop a resource management curriculum for IMC in the community.

Findings:

- The curriculum was developed through brainstorming meetings with 13 experts, resulting in 27 lessons and 35 hours of content. The curriculum was validated by the Thailand Nursing and Midwifery Council, with an IOC of 0.92.
- The curriculum covered four key areas: personnel development (24 lessons), management, money, and materials (one lesson each).

OBSERVE PHASE

Objective: To evaluate the application and improvement of intermediate care in the community.

Findings:

- Pre- and post-training tests showed a significant improvement in participants' knowledge, with mean scores increasing from 23.12% to 40.75% ($p < 0.05$).

TABLE 1. PRE- AND POSTLEARNING ACHIEVEMENT OF THE TRAINING

Score	Amount	Mean	S.D.	t	p-value
Before	260	23.12	5.037	-44.216	.000
After	260	40.75	4.431		

Participants expressed high satisfaction with the training, with a mean satisfaction score of 4.42 (SD = 0.447).

The curriculum was reported to the Nursing and Midwifery Council and approved for continuing education in nursing.

REFLECT PHASE

Objective: To analyze the summary of results and recommendations after using the IMC curriculum.

Findings:

- Participants who completed the training reported that they could apply the knowledge and skills effectively to themselves and their organizations, with a mean score of 4.40 (SD = 0.58).
- Clinical data from the National Health Security Office (NHSO) showed that 50.24% of IMC patients experienced improved ADL after training in 2022-2023.
- Participants suggested expanding the training to cover all areas and personnel levels, including reviewing

knowledge after training and incorporating additional practical training and mental health content.

SUMMARY OF KEY FINDINGS

1. Current IMC Management Issues: The IMC management model was primarily based on local administrative organization guidelines, with significant issues identified in personnel knowledge, human resources, budget, materials, and equipment.
2. Curriculum Development: A curriculum consisting of 27 lessons and 35 hours was developed and validated by

experts and the Thailand Nursing and Midwifery Council.

3. Training Outcomes: Participants showed a significant improvement in test scores after training, with a mean score increase from 23.12% to 40.75%, and expressed high satisfaction with the training (mean satisfaction score of 4.42, SD = 0.447).
4. Patient Outcomes: The curriculum was practical, leading to improved Activities of Daily Living (ADL) for patients, with 50.24% of IMC patients showing improvement in ADL after training in 2022-2023.

TABLE 2. CLINICAL DATA ON IMC SERVICES FROM THE NHSO FROM 2022 TO 2023

Province	2022			2023		
	Number of IMC patients (people)	Increased ADL (people)	Percent age	Number of IMC patients (people)	Increased ADL (people)	Percentage
Mae Hong Son	67	46	68.7	129	92	71.3
Phrae	183	91	49.7	459	212	46.2
Chiang Mai	462	252	54.6	1,154	580	50.3
Lampang	444	132	29.7	799	331	41.4
Chiang Rai	894	390	43.6	1,637	926	56.6
Phayao	308	136	44.2	542	278	51.3
Nan	100	37	37.0	330	109	33.0
Lamphun	229	133	58.1	567	294	51.9
Total	2,687	1,217	48.2	5,617	2,822	50.2
Two-year Total						49.2

Source: NHSO November 15, 2023

RESULTS CONCLUSION

The study successfully developed and implemented a resource management curriculum for IMC in a community in Health Region 1. The curriculum addressed key issues in IMC management and significantly improved participants' knowledge and patient outcomes. Continuous monitoring and evaluation are recommended to ensure the curriculum's effectiveness and sustainability.

DISCUSSION

1. Integrated IMC operations can achieve success through collaboration with network partners from both the public and private sectors, as well as multidisciplinary professionals. Services are provided through rotating systems, with nurses leading management and Village Health

Volunteers (VHVs) participating. The Local Administrative Organization (LAO) plays a key role in management to meet local needs, aligning with Somkid Lertpaitoon's concept that LAOs are responsible for providing local public services [6]. This approach is supported by the Community Health System Research and Development Institute, which emphasizes community involvement and collaboration with local agencies for successful local health fund development [7]. Additionally, the Department of Health Service Support advocates for the development of public health volunteers as "community health managers" to enhance rehabilitation services [8].

However, several challenges hinder the achievement of IMC goals, including personnel lacking knowledge in rehabilitation and management, as well as shortages

in human resources, budget, and equipment. These issues necessitate developing personnel potential and reviewing their knowledge, along with creating an operating manual. This aligns with Tshering et al.'s findings that organizational financial factors are often critical [9]. Khomkrib Longlaleng's study also notes that a lack of knowledge and budget shortages impede community care for individuals with movement disabilities [10]. Preeda Srisang emphasizes that developing personnel potential is crucial for organizational success [11].

Key factors contributing to successful IMC management include LAO executives' support, a variety of services, and the participation of network partners and multidisciplinary teams in managing human resources and developing adequate capacity, funding, materials, and equipment. Peeranithi Aksorn's study identifies that success in project management is influenced by action plans, cooperation, network development, funding, public sector procurement, and administration and management tools [12].

2. The ICM curriculum for the community was developed using a systematic training curriculum development process based on the concepts of Saylor, Alexander, and Lewis [13]. This process includes four steps: 1) setting goals, objectives, and the desired scope for development; 2) designing and developing the curriculum; 3) implementing the curriculum; and 4) evaluating the effectiveness of the curriculum. Key components to address IMC management problems include decision making for employees, setting objectives, creating training content, scheduling training duration, and incorporating training processes. The curriculum received standard certification from the Nursing and Midwifery Council Committee on June 15, 2020, for addressing four management problems: personnel, money, materials, and management, and meeting the Council's standards for online teaching. This aligns with Eisner's theory [14] of critical performance evaluation, which focuses on expert knowledge and experience, and Beauchamp's [15] curriculum component theory, which involves defining content scope, targeting, planning, and judgment. It also aligns with Kiattiphong Udomthanathira's [16] idea that innovation begins with organizational problems and leads to expert-verified solutions, and Wiput Laosuksri's [17] study on basic life support training certified by the Thai Resuscitation Council.

3. Scores for management knowledge in the IMC curriculum for online communities were higher after training. This aligns with Duanpen Bunmachu's research [18], which found that e-learning improved students' mean learning achievement scores. Similarly, Wanthakarn Simarorit's study [19] showed that a developed curriculum enhanced professional competencies for tourism business personnel, with increased post-training scores. Dusita Langdee's research [20] also indicated higher scores and high satisfaction levels among participants after training. Jaruan Manomaikit's study [21] confirmed that experiential learning concepts significantly increased high school English teachers' competencies and satisfaction. Siriporn Lamno's research [22] demonstrated that directors, special education teachers, and supplementary teachers were highly satisfied with the curriculum and manual post-training.

4. The research objectives for the analysis were to evaluate the impact of the IMC curriculum on community participants, focusing on knowledge application and organizational management development. The summary of the results indicated that participants found the training beneficial and expressed a desire for expanded and practical training sessions. This aligns with Kirkpatrick's theory [23], which evaluates training effectiveness in terms of satisfaction, learning, behavior change, and organizational impact. These findings are consistent with Thanongsak Chanthaburi's study on enhancing teaching efficiency and academic cooperation [24], Phasakon Suanruang's research on the importance of continuous knowledge development [25], Pairin Parsut's recommendation for comprehensive emergency training [26], and Nudee Nupairoj's study on the value of experiential workshops [27].

LIMITATIONS

The study faced limitations, such as IMC system changes, service cancellations, management shifts, and COVID-19 impacts, which led to inaccurate data and delayed research timelines.

CONCLUSION

This study found that IMC is divided into full-time and rotating types, with labor shortages being a key challenge. To address this, training programs should be developed to enhance knowledge of IMC management and

rehabilitation across all levels of the medical service network. Furthermore, the developed curriculum was well accepted by experts and approved by the Nursing and Midwifery Council for continuing nursing education. Successful IMC implementation relies on policy support and top management's commitment to creating patient-centric services. IMC should be a priority policy for local organizations and a key measure for managing healthcare personnel.

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