

# Reliability and Validity of a Thai Version of Assessment of Chronic Illness Care (ACIC)

Patama Gomutbutra MD\*,  
Apinun Aramrat MD, PhD\*, Worapoj Sattapansri MA\*\*,  
Siam Chutima MA\*\*, Dusida Tooprakai MD\*\*\*,  
Pokin Sakarinkul MD\*\*\*\*, Yaowapa Sangkhasilapin MA\*\*

\* Department of Family Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

\*\* Department of English, Faculty of Humanistic, Chiang Mai University, Chiang Mai, Thailand

\*\*\* Lamphun Hospital, Lamphun, Thailand

\*\*\*\* Lampang Hospital, Lampang, Thailand

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**Background:** The Assessment Chronic Illness Care (ACIC), developed in the United States, is a quality-improvement tool used to help organization evaluate the strengths and weaknesses of their delivery of care for chronic illness in six areas, community linkages, self-management support, decision support, delivery system design, information systems, and organization of care. These areas of care are influenced by the Chronic Care Model. The questionnaire scale ranges from 0 to 11.

**Objective:** Translate in Thai language and validate the ACIC as a practical tool to measure the quality of chronic illness care in Thailand.

**Material and Method:** In a cross-sectional study, the content validity was examined by public health experts. The original ACIC was translated into Thai with permission from The MacColl Institute for Healthcare Innovation at Group Health's Center for Health Studies. The translation process followed the World Health Organization (WHO) process of translation and adaptation of instruments, including forward translation, expert panel and synthesis of the translation, back translation, pre-testing, and cognitive interviewing. The pre-testing was done by distributing the questionnaire to a sample of 12 organizations with cognitive interviewing, followed by revision and finalization of the questionnaire. The reliability and validity of the translated version was then examined by distributing the questionnaire to 172 organizations (84 district hospitals and 88 community health center primary care units within the upper northern part of Thailand) focusing on care of cerebrovascular disease.

**Results:** The response rate was approximately 70% or 120 organizations. The results from these organizations' self-assessment showed that the Thai version of ACIC achieved good levels of reliability and validity, with the range of Cronbach's alpha coefficients being 0.846 to 0.972 in each aspect of ACIC. However, ACIC inability to detect statistical significant difference in score for each dimension though the self-management support and decision support are the two relatively low score rating.

**Conclusion:** The Thai translation of the ACIC can be used as an organization self-assessment instrument to evaluate the quality of chronic care in Thailand. Further explanatory research of association between ACIC assessment and organization change as well as clinical outcomes is needed.

**Keywords:** Chronic care model, ACIC Thai, Self management support

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Like any other country, Thailand is faced with a growing middle-aged population with multiple chronic illnesses. According to a population survey of Thai health conditions in 2004<sup>(1)</sup>, most elders have been diagnosed with at least two or three illnesses. In

addition, the prevalence of high blood pressure rates in the population over 15 years of age was found to be about 20%. With the over 60 years of age population, the prevalence rates increased to almost 50%, only five to ten percent of which showed blood pressure rates to be in good control. Similar to the US, as reported in 2001<sup>(2)</sup>, over 45% of the US population, or roughly 125 million people, had chronic illnesses, half of which had at least two or more diseases. One third of the people suffering from multiple chronic conditions

**Correspondence to:**

Gomutbutra P, Department of Family Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand.

Phone: 053-225-010

E-mail: [pgomutbu@med.cmu.ac.th](mailto:pgomutbu@med.cmu.ac.th)

were shown to be in poor control. The prevalence and course of chronic disease conditions in Thailand is quite similar to that of the US.

The increase of chronic disease affects primary care service teams significantly because they are responsible for the highest percentage of chronically ill patients. In the US, 90% of diabetics are receiving their care from primary care clinicians. In a similar fashion, the ratio of patients who visit primary care service units is high. According to an outpatient clinic survey of the Department of Family Medicine, The Faculty of Medicine, Chiang Mai University in 2002<sup>(3)</sup>, the three most significant diseases were found in patients above 60 years of age. Of the number of patient visits, 43.4% had high blood pressure, 12.3% had arthritis, and 16.5% had diabetes. Meanwhile, acute problems such as respiratory infection (3.3%) and urinary tract infection (2.1%) are evidently less frequent.

### **Chronic Care Model**

High costs combined with poor outcomes of chronic disease treatment caused a team of public health researchers – led by Edward H Wagner of The MacColl Institute for Health Care Innovation at Group Health’s Center for Health Studies – to synthesize chronic care into a conceptual model<sup>(4,5)</sup>, making the elements involved in better care clearer and more effective. This group of researchers defines chronic illness as “any condition that requires ongoing activities and responses from patients and their personal caregivers as well as medical care system”. The Chronic Care Model (CCM), developed through research and expert opinion, consists of six elements: community linkage, self-management support, decision support, delivery system design, information systems and organization of care.

In 1998 The Institute for Healthcare Improvement (IHI) combined The Breakthrough series (BTS) methodology with the Chronic Care Model<sup>(6)</sup>. BTS teams differed in size and medication reimbursement rates. They participated in this collaborative project in order to employ the elements of the synthesized evidence-based chronic care model for the sake of service improvement.

### **The Assessment of Chronic Illness Care**

Health care organizations require practical assessment tools to guide quality improvement efforts and evaluate changes in chronic illness care. In response to this need, Wagner’s group developed

two sets of questionnaires: The Assessment of Chronic Illness Care (ACIC) for self-assessment of a health service team and The Patient Assessment of Chronic Illness Care (PACIC), for patients receiving care from a health service team. The ACIC survey<sup>(7)</sup> was created to identify areas for improvement in the care for chronic illnesses prior to beginning quality improvement work. It assists with the evaluation of the level and nature of improvements made in response to system interventions.

The content of the ACIC derives from specific evidence-based interventions. It contains six components of the Chronic Care Model, health care organization (6 items), community linkages (3 items), self-management support (4 items), decision support (4 items), delivery system design (6 items), and clinical information systems (5 items). Along with these are additional items that address how well a practice team or organization integrates the Chronic Care Model elements.

Preliminary data indicate the ACIC not only is responsive to the changes that the teams made in their systems but also correlates well with other measures of productivity and system change. In fact, all six ACIC sub-scale scores increased significantly from baseline to follow-up for diabetes and congestive heart failure teams enrolled in a 14-month quality improvement collaborative. It has been validated in 108 health care systems across the United States collaborated in the Breakthrough Series, including 30 diabetes teams, two CHF teams, and 26 asthma teams. The results revealed that correlation between the ACIC sub-scales ranged from 0 to 11. The latter represents optimal care, and the faculty rating ranged from 0.28 to 0.52. A study in large medical group<sup>(8)</sup> appear that increasing of The ACIC score there were correlations with increasing of well controlled patient proportion, in aspect of lipid profile, glycated hemoglobin levels and cardiac event.

The ACIC has been widely utilized outside the United States. For example, Australia<sup>(9)</sup> employed it to measure the correlation between ACIC scores and diabetes clinical outcomes. It has also been translated into Spanish<sup>(10)</sup>. Information about international ACIC implementation is currently lacking.

### **Evaluation of Chronic Illness Care Improvement in Thailand**

Instruments for evaluating primary care service teams’ quality were developed. A good example would be the primary care unit questionnaire (PCUQ). The Thai version of this questionnaire developed by

The Faculty of Medicine, Ramathibadee Hospital which is used for eliciting patients' points of view on the service<sup>(11)</sup>.

The ACIC was integrated with WHO's Chronic Care Model. The information on the reliability and validity of translating from the original foreign questionnaire version into Thai and then using it in Thailand is currently limited.

Therefore, the purpose of this research is to experiment using the principles of the Chronic Care Model in Thailand. The selected areas for experimentation are under supervision of the Regional Office of Institution of Health and Insurance: Chiang Mai, Lamphun, Lampang, Chiang Rai, Maehongson, Prae, Nan, and Phayao.

The present study has two steps. The first step is to create the tool that has the same standards as the original, which is the Thai version of ACIC. The Thai health care management system, Thai culture, and Thai ways of life differ from those of the country that developed the original questionnaire. These key differences necessitated wording and other subtle changes to the original instrument to bring it into harmony with Thai culture. The second step is to implement the principles of the Chronic Care Model in improving chronic disease care among the health care service teams participating in the project, evaluating the progress of the team by using the Thai version of the ACIC questionnaire to measure the correlation between the health outcome of patients who received the service and the ACIC scores.

## **Material and Method**

### ***Evaluation on validity***

#### ***Content validation***

The current validity was examined by the research group along with experts on epidemiology.

##### ***1. Assessment instrument***

In order to emphasize how the ACIC could reflect the applicability of the assessment in primary care, it was proposed that within different settings, the definition of "chronic illness" could differ. Aside from this, the experiment of using the principles of the Chronic Care Model was followed by the evaluation plan of cerebrovascular disease patients' care.

#### ***Process of content validation***

##### ***2. Elements clarification of ACIC***

In order to discuss the measurement process affecting outcomes data, demographic data, doctors and patients' codes, instruction and the setting in which

the survey is administered should be included in the questionnaire. The conditional and dynamic nature of content validity was discussed. Multiple elements of content validity along with quantitative and qualitative methods were reviewed. There may be questions or sections that need to be cross-culturally adapted. Finally, recommendations for reporting and interpreting content validity were offered.

### ***Cross-cultural adaptation of self-report measures of ACIC into Thai***

The original ACIC was translated into Thai with permission from the authors. The translation process followed the World Health Organization's (WHO) process of translation and adaptation of instruments<sup>(12)</sup>.

#### ***Stage I: forward translation***

The first stage was the forward translation. Two forward translations were completed of the instrument from English to Thai separately as translator 1 (Pa), a health care professional, and translator 2 (W), acting as the language professional. The translations were compared, and found to reflect instances of ambiguous wording from the original, as well as discrepancies within the translation process. Less effective or poor word choices were identified and resolved in a discussion between the two translators.

#### ***Stage II: expert panel and synthesis of the translations***

A synthesis of translator 1 and translator 2 was reviewed by an expert committee comprised of the expert in translation (Y), the expert in public health (A), and the translators (Pa and W). The review was done to produce one Thai pre-final questionnaire with a written report documenting the synthesis process in Thai. Each of the issues was addressed and resolved by a recording observer.

***- Semantic equivalence (the following points were discussed during the process of translation from English to Thai)***

The authors had a discussion of the word 'population-based' because there could be two meanings in Thai. In the earlier translation, 'population-based' was translated into the term "management of population". The original term sounded odd to Thai readers, causing its meaning to be lost due to respective language differences. In other words, the translation of 'based' was foreign to the meaning of the whole context.

In further discussion, however, the version was again changed. Some members of the committee believed in the faithfulness to the original content, and were afraid that if the word 'based' was cut off, the overall intention may have deviated. As a result of these discussions, 'based' was put back into the translated version.

#### **- Idiomatic equivalences**

There were some difficult idioms to translate, for instance, 'ad hoc'. 'Ad hoc' in Thai roughly translates to the English word 'emergency'. The translators worried that when the Thai version was translated back to English, the Thai translation of 'ad hoc' (emergency) would cause difficulty. These idiomatic differences were discussed and resolved.

#### **- Functional equivalence**

Because no such terms (or entities) exist in Thailand, the authors changed some terms used in the original ACIC to approximate functional equivalences. For example, in the original questionnaire, the word 'primary care unit' was used, but there is no such word in the Thai language nor does an equivalent entity exist within the Thai health care system. Smaller than an American primary care unit and located within every single community, Thailand's closest equivalent is 'sathanee a-na-mai': To adjust for this cultural difference, the original 'primary care unit' was changed into 'sathanee a-na-mai'.

#### **- Conceptual equivalence**

In Thailand, the primary health care provider usually follows the regional health care policy. There are several reasons for this. First, Thailand has a centralized system (e.g., tax has been paid to the government) that leads to the policies being followed by every governmental agency and the associated subsidies allocated accordingly. 'Sathanee a-na-mai' has no vision plans and/or business plans as do self-supporting US primary care units. Because of the decentralized US system, primary care in the US does not receive government subsidies. This caused some confusion about whether a primary health care provider has its own strategic vision or business plan.

#### **Stage III: back translation**

Working from the Thai pre-final version of the questionnaire and blind to the original version, a native-speaking English translator (S) translated the questionnaire back from Thai to English. The authors subsequently produced a back-translation version.

#### **Stage IV: pre-testing and cognitive interviewing: validity**

A user (beta) test of the pre-final version was done in 12 organizations within three provinces. In March 2008, each organization was interviewed by co-research family physician (Pa, Po, and Du). The pre-test respondents were asked about any word(s) they did not understand, as well as any word(s) they found unacceptable or offensive. Additional questions included if they understood the questions, whether they could repeat the questions in their own words, and what came to their minds when they heard a particular phrase or term. The questionnaire was revised to include this pilot test feedback into the final version.

#### **Stage V: test of the final version: reliability**

Further testing of the adapted version was conducted within 222 organizations focused on cerebrovascular care. This test included eight provincial hospitals, 84 community hospitals and 120 of primary care units, which stratified samples from 1,098 primary care units within the upper northern part of Thailand). These results were analyzed using SPSS version 13. Results of the present study showed that the Thai ACIC achieved good levels of reliability, with coefficients being 0.846-0.972 in each aspect of ACIC (primarily in the areas of access, community linkage, and health care organization).

#### **Stage VI: submission of documentation to the developers of the coordinating committee for appraisal of the adaptation process**

The appropriate documents were submitted to The MacColl Institute for Healthcare Innovation at The Center for Health Studies, Group Health Cooperative. These include:

1. Initial forward version
2. A summary of recommendation by the expert panel
3. Back translation
4. Summary of problems found during the pre-testing of the instruments and the proposed modification
5. Final version

#### **Results**

The ACIC Thai version questionnaire was pre-tested by cognitive interview in 12 health care organizations. The questionnaire was distributed by mail to 222 health care organizations. The questionnaire response rate was approximately 70%. Table 1 and 2 demonstrate the characteristics and demographic of the surveyed health care organizations.

Inter-item consistency was then tested, with results showing that the Thai ACIC achieved good levels of reliability with the range of Cronbach's alpha co-efficiency through cognitive interviews and postal mail, as the following (Table 3): health care organization received 0.972 and 0.915, community linkage and policies received 0.846 and 0.856, self-management support received 0.889 and 0.876, decision support received 0.889 and 0.864, delivery system design received 0.878 and 0.911, clinical information system received 0.921 and 0.905, and component integration received 0.912 and 0.929.

The detailed results from the self-assessment by the 120 primary health care organizations are shown in Table 4. Overall ACIC median scores and 25% percentile and 75% range for each dimension are not statistically significant, as shown in Fig. 1 and as follows: health care organization had 6.5 (range 4.5-8.5), community linkage and policies had 7.0 (4.3-7.3), self-management support had 5.5 (range 4-6.5), decision support had 5.5 (range 3.5-7.1), delivery system design had 6.17 (range 4.8-7.5),

clinical information system had 6.40 (range 4.0-7.4), and component integration had 6.00 (range 4.2-7.5).

## Discussion

Quality improvement within primary care involves most aspects of care. The US origin-the Primary Care Assessment Survey; PCAS<sup>(13)</sup> and adapted English one- the General Practice Assessment Questionnaire;GPAQ address these seven domains of primary care: access (organizational, financial), continuity (longitudinally, visit-based), comprehensiveness (contextual knowledge of patient, preventive counseling), integration, clinical interaction (patient-provider communication, thoroughness of physical examinations), patient-provider interaction,

**Table 1.** Characteristics of sampled health care organizations given cognitive interviews

Levels of health care facilities	Numbers	Percentage
Community medical unit	2	16.67
Health center	10	83.33
Total	12	100.00
Province		
Chiang Mai	3	25.00
Lumpang	5	41.67
Lumphun	4	33.33
Total	12	100.00

**Table 2.** Characteristics of sampled health care organizations' responses through mail

Levels of health care facilities	Numbers	Percentage
Community hospital	58	48.33
Community medical unit	3	2.50
Primary care unit	19	15.83
Health center	41	34.16
Total	120	100.00
Province		
Chiang Mai	32	26.90
Chiang Rai	19	16.00
Nan	16	13.40
Pha Yao	9	7.60
Phrae	10	8.40
Mae Hong Sorn	4	3.30
Lumpang	18	15.10
Lumphun	12	10.10
Total	120	100.00

**Table 3.** Internal reliability of ACIC's Thai version

Mode of item	Number of items	Inter-item reliability Cronbach's alpha	
		Cognitive interview (n = 12)	Mailed questionnaires (n = 120)
Health care organization	4	0.972	0.915
Community linkage and policies	3	0.846	0.856
Self management support	4	0.889	0.876
Decision support	4	0.889	0.864
Delivery system design	6	0.878	0.911
Clinical information system	5	0.921	0.905
Component integration	6	0.912	0.929

**Table 4.** Result from mailed survey by ACIC's Thai version: total score = 11

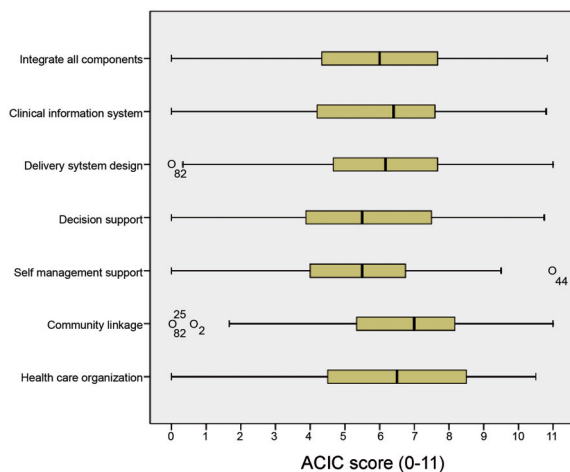
Type	Statistic	
Health system organization		
Community hospital	Median	6.250
	Variance	5.045
	Minimum	2.250
	Maximum	10.250
Community medical unit	Median	9.000
	Variance	2.000
	Minimum	8.000
	Maximum	10.000
Primary care unit	Median	8.000
	Variance	6.786
	Minimum	3.250
	Maximum	10.500
Health center	Median	6.750
	Variance	5.951
	Minimum	0.000
	Maximum	10.000
Community linkage and policies		
Community hospital	Median	6.330
	Variance	5.129
	Minimum	0.000
	Maximum	10.000
Community medical unit	Median	8.660
	Variance	0.884
	Minimum	8.000
	Maximum	9.000
Primary care unit	Median	8.000
	Variance	5.053
	Minimum	4.000
	Maximum	11.000
Health center	Median	7.000
	Variance	5.454
	Minimum	0.000
	Maximum	11.000
Self management support		
Community hospital	Median	5.500
	Variance	4.333
	Minimum	0.500
	Maximum	9.500
Community medical unit	Median	8.250
	Variance	2.000
	Minimum	7.200
	Maximum	9.200
Primary care unit	Median	6.500
	Variance	3.898
	Minimum	3.000
	Maximum	11.000
Health center	Median	5.000
	Variance	3.516
	Minimum	0.000
	Maximum	9.500

**Table 4.** (cont.)

Type	Statistic	
Decision support		
Community hospital	Median	5.5000
	Variance	5.384
	Minimum	0.500
	Maximum	9.250
Community medical unit	Median	8.6250
	Variance	1.531
	Minimum	7.750
	Maximum	9.500
Primary care unit	Median	7.5000
	Variance	6.282
	Minimum	3.000
	Maximum	10.750
Health center	Median	5.0000
	Variance	4.929
	Minimum	0.000
	Maximum	9.000
Delivery system design		
Community hospital	Median	6.500
	Variance	4.250
	Minimum	1.800
	Maximum	9.800
Community medical unit	Median	9.832
	Variance	0.000
	Minimum	9.800
	Maximum	9.800
Primary care unit	Median	6.500
	Variance	5.637
	Minimum	3.500
	Maximum	11.000
Health center	Median	5.500
	Variance	4.558
	Minimum	0.000
	Maximum	8.800
Clinical information system		
Community hospital	Median	6.400
	Variance	3.117
	Minimum	3.000
	Maximum	9.000
Community medical unit	Median	8.600
	Variance	6.480
	Minimum	6.800
	Maximum	10.400
Primary care unit	Median	7.600
	Variance	5.097
	Minimum	3.800
	Maximum	10.800
Health center	Median	5.200
	Variance	5.446
	Minimum	0.000
	Maximum	9.200

**Table 4.** (cont.)

Type	Statistic	
Component integration		
Community hospital	Median	6.330
	Variance	4.631
	Minimum	1.000
	Maximum	9.700
Community medical unit	Median	8.500
	Variance	4.500
	Minimum	7.000
	Maximum	10.000
Primary care unit	Median	7.500
	Variance	5.731
	Minimum	2.660
	Maximum	10.830
Health center	Median	5.670
	Variance	4.555
	Minimum	0.000
	Maximum	8.830



**Fig. 1** Median and range of ACIC scores of overall

and trust (the last two relating to the concept of “patient-centeredness”).

The GPAQ has been translated and validated in many languages, including Chinese, Somalian, Arabic, and Thai<sup>(14)</sup>. In these translations, the emphasis on quality of care specific is less prominent, because both definition and measurement of it are new and evolving concepts in those settings in which it is administered.

The present study developed a Thai version of ACIC questionnaire to measure quality of care based on The MacColl Institute’s Chronic Care Model.

Evaluation of the questionnaire measurement properties showed good reliability and validity.

Three limitations should be noted, in consideration of the present study. First, Primary Health Care organizations are unable to be stratified because of an incomplete database. This leads to a limited number of respondents from community medical units (CMU), with sample sizes that are inadequate to conduct a factor analysis. Second, the authors confined quality of care measurement to cerebrovascular disease only. This was to obtain a clear response, as well as address one of the most challenging and complex issues within chronic care delivery in Thailand. Patients need hospital based care and home health care, and they need medication as well as psychosocial supports.

Finally, this instrument measured processes, not outcomes. The evidence shows that process lead to better patient clinical outcomes in the United States and some Western countries, but, unfortunately, a lack of evidence exists for Asian countries. The many differences between Asian and Western culture affecting health beliefs may not allow for a similar level of predictability with clinical outcomes. To adjust for these differences, a qualitative study with an in-depth practitioner interview would be necessary.

## Conclusion

After translation and cross-cultural adaptation, the Thai version of the ACIC appears to be a valid tool for measuring quality of care based on MacColl’s Chronic Care Model theory and can be used as an evaluation tool in improvement of primary care in Thailand. The authors note that further studies correlating clinical outcomes are needed to confirm this conclusion.

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### Potential conflicts of interest

None.

### References

1. Porapakkham Y, Pattaraarchachai J, Aekplakorn W. Prevalence, awareness, treatment and control of hypertension and diabetes mellitus among the elderly: the 2004 National Health Examination Survey III, Thailand. *Singapore Med J* 2008; 49: 868-73.
2. Anderson G, Horvath J. The growing burden of chronic disease in America. *Public Health Rep* 2004; 119: 263-70.
3. Lettrakarnnon P, Kusinsiri W, Suwansiri S. A 3-year retrospective study of common problems at primary care unity, Maharaj Nakorn Chiang Mai Hospital. *Chiang Mai Med Bull* 2006; 45: 55-63
4. Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving chronic illness care: translating evidence into action. *Health Aff (Millwood)* 2001; 20: 64-78.
5. Improving Chronic Illness Care. The chronic care model [Internet]. 2008 [cited 2008 Jun 19]. Available from: [http://www.improvingchroniccare.org/index.php?p=The\\_Chronic\\_Care\\_Model&s=2](http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2)
6. Institute for Healthcare Improvement: 3. The breakthrough series: IHI's collaborative model for achieving breakthrough improvement [Internet]. 2003 [cited 2008 Jun 21]. Available from: [http://www.ihl.org/IHI/Results/WhitePapers/TheBreakthrough\\_SeriesIHIsCollaborativeModelforAchieving+BreakthroughImprovement.htm](http://www.ihl.org/IHI/Results/WhitePapers/TheBreakthrough_SeriesIHIsCollaborativeModelforAchieving+BreakthroughImprovement.htm).
7. Bonomi AE, Wagner EH, Glasgow RE, VonKorff M. Assessment of chronic illness care (ACIC): a practical tool to measure quality improvement. *Health Serv Res* 2002; 37: 791-820.
8. Solberg LI, Crain AL, Sperl-Hillen JM, Hroschikoski MC, Engebretson KI, O'Connor PJ. Care quality and implementation of the chronic care model: a quantitative study. *Ann Fam Med* 2006; 4: 310-6.
9. Si D, Bailie R, Connors C, Dowden M, Stewart A, Robinson G, et al. Assessing health centre systems for guiding improvement in diabetes care. *BMC Health Serv Res* 2005; 5: 56.
10. Serrano-Gil M. Translations: Spanish ACIC 3.5 translation (Evaluación de cuidados crónicos cliente interno) [Internet]. Seattle: Improving Chronic Illness Care Research Group; 2008 [cited 2012 Aug 22]. Available from: <http://www.improvingchroniccare.org/index.php?p=Translations&s=360>
11. Bureau of Health Administration, Ministry of Public Health, Thailand. Primary care award criteria [Internet]. 2006 [cited 2012 Aug 22]. Available from: [http://www.ato.moph.go.th/emeeting/download\\_data/](http://www.ato.moph.go.th/emeeting/download_data/)
12. World Health Organization. Process of translation and adaptation of instruments [Internet]. 2012 [cited 2012 Aug 22]. Available from: [http://www.who.int/substance\\_abuse/research\\_tools/translation/en/print.html](http://www.who.int/substance_abuse/research_tools/translation/en/print.html)
13. Safran DG, Taira DA, Rogers WH, Kosinski M, Ware JE, Tarlov AR. Linking primary care performance to outcomes of care. *J Fam Pract* 1998; 47: 213-20.
14. Jaturapatporn D, Hathirat S, Manataweewat B, Dellow AC, Leelaharattanarak S, Sirimothya S, et al. Reliability and validity of a Thai version of the General Practice Assessment Questionnaire (GPAQ). *J Med Assoc Thai* 2006; 89: 1491-6.



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## ความเที่ยงตรงและความเชื่อถือได้ของแบบสอบถามประเมินคุณภาพการดูแลโรคเรื้อรัง (ACIC) ฉบับภาษาไทย

ปัทมา โกมุทบุตร, อภินันท์ อร่ามรัตน์, วรพจน์ สัจจพันธ์ศรี, สยาม ชุตินา, คุณิศา ตู้ประกาย, โภคิน ศักรินทร์กุล, เยวภา สังขะศิลป์

**ภูมิหลัง:** แบบสอบถามประเมินคุณภาพการดูแลโรคเรื้อรัง เป็นแบบสอบถามที่ได้รับการแปลมาจาก *Assesment of Chronic Illness Care (ACIC)* ซึ่งพัฒนาในสหรัฐอเมริกา เป็นแบบสอบถามสำหรับหน่วยบริการสุขภาพ ประเมินจุดดี จุดด้อย ในการดูแลโรคเรื้อรัง ตามแนวคิด *Chronic Care Model* โดยแบ่งเป็น 6 ด้านได้แก่ การเชื่อมโยงกับชุมชน, การส่งเสริมให้ผู้ป่วยและญาติดูแลตนเอง, ส่วนช่วยสนับสนุนการตัดสินใจ, ระบบการให้บริการ, ระบบฐานข้อมูล และระบบบริหารจัดการขององค์กร โดยทุกหัวข้อ มีระดับคะแนน 0-11

**วัตถุประสงค์:** เพื่อประเมินความเที่ยงตรงและความเชื่อถือได้ของแบบสอบถามแบบสอบถามประเมินคุณภาพการดูแลโรคเรื้อรังฉบับภาษาไทย

**วัสดุและวิธีการ:** การศึกษาแบบภาคตัดขวาง โดยมีการตรวจสอบความเที่ยงตรงของแบบสอบถามโดยผู้เชี่ยวชาญทางสาธารณสุขต้นฉบับ ACIC ได้รับการแปลโดยรับการอนุญาตจากคณะผู้พัฒนาแบบสอบถาม สถาบันพัฒนานวัตกรรมการดูแลสุขภาพแมคคอลลี ประเทศสหรัฐอเมริกา แปลแบบสอบถามตามแนวทางการแปลและปรับแบบสอบถามให้สอดคล้องกับวัฒนธรรมขององค์การอนามัยโลก โดยมีผู้แปลแบบสอบถามฉบับดั้งเดิมเป็นภาษาไทย 2 คน จากนั้นตรวจสอบความหมายและมีผู้แปลกลับเป็นภาษาอังกฤษเพื่อให้คงความหมายเดิม และมีการสังเคราะห์ปรับเปลี่ยนภาษาไทยให้สอดคล้องกับผู้ป่วยในประเทศไทย มีการประเมินความเชื่อถือได้โดยการสอบถามด้วยวิธีสัมภาษณ์หน่วยงานบริการสุขภาพ 12 หน่วย ก่อนทำการปรับปรุงแบบสอบถามในส่วนภาษาที่มีปัญหาในการตอบ หลังจากนั้นจึงส่งแบบสอบถามทางไปรษณีย์แก่หน่วยบริการสุขภาพ 172 หน่วยในเขตภาคเหนือตอนบน (84 โรงพยาบาลชุมชน, 88 สถานีอนามัย หน่วยบริการปฐมภูมิหน่วยแพทย์ชุมชน) โดยเลือกยกตัวอย่างกรณีผู้ป่วยโรคหลอดเลือดสมอง

**ผลการศึกษา:** อัตราการตอบแบบสอบถามกลับ ประมาณร้อยละ 70 ค่าความเชื่อถือได้ของแบบสอบถามทุกหัวข้อ มีค่าตั้งแต่ 0.846-0.972 ซึ่งสูงกว่าค่ามาตรฐานที่ยอมรับได้ (0.70) ผลจากการประเมินการดูแลโรคเรื้อรังด้วย ACIC ไม่พบความแตกต่างของคะแนนในแต่ละด้านอย่างมีนัยสำคัญ แม้คะแนนของ *self management support* และ *decision support* มีค่ากลางต่ำกว่าด้านอื่นๆ

**สรุป:** แบบสอบถามประเมินคุณภาพการดูแลโรคเรื้อรังฉบับภาษาไทย มีความเชื่อถือได้และสามารถนำไปใช้ประเมินตนเองเพื่อหาจุดพัฒนาการดูแลโรคเรื้อรัง สำหรับหน่วยงานบริการสุขภาพต่อไป ทั้งนี้ ควรมีการศึกษาเพิ่มเติมถึงเชิงอรรถอธิบายถึงความสัมพันธ์ระหว่างคะแนน ACIC กับการเปลี่ยนแปลงของหน่วยงานและผลลัพธ์ทางคลินิก