

Public–Private Partnerships: Strengthen Thailand’s Health Security in Confronting Emerging Infectious Diseases

Pinsuda Luangpaiboon, M.Sc. (Neurosciences), M.B.A.

School of Public Administration, National Institute of Development Administration

Abstract Infectious diseases are among the root causes of death and disability in an outbreak. As such, ensuring the development of adequate resources and access to healthcare services has become a priority for the national agenda. Governments across the world are increasingly turning to public–private partnerships as the primary mechanism for delivering healthcare services to meet this growing demand for national health security. The objective of this study was to explore the value of public health public–private partnerships project in strengthening national pandemic influenza preparedness for Thailand. This study used the mixed research method to explore key public–private partnerships conducted for pandemic influenza preparedness, namely the Influenza Foundation of Thailand (IFT). The results revealed that the Influenza Foundation of Thailand aimed to create public health readiness for pandemic influenza preparedness. Both public and private participants were being driven together to accomplish Influenza Foundation of Thailand’s core objectives. The initiative provided public health facilities with the educational support needed as described in the national strategic plan by helping public organizations increase their capacity to deal with influenza disease outbreaks. Project effectiveness evaluation found that the effective training and education PPPs of Influenza Foundation of Thailand reflected not only the needs of pandemic influenza preparedness, but also the administrative capacity of a government in confronting emerging/re-emerging infectious diseases outbreaks in the future. The PPPs also served as the first step in creating an integrated national strategic agenda, given that PPPs were fundamental to the overall strategy of the nation.

Keywords: public–private partnerships, pandemic influenza preparedness, national security

Introduction

Public–Private Partnerships (PPPs) are being recognized to make government and private industry more accountable for healthcare delivery. For more than two decades PPPs have been used to finance health infrastructure. Now governments are increasingly looking

to the PPP–model to solve larger problems in national health security.⁽¹⁾ Efforts by national governments and international organizations to prevent and control pandemics in the region have been instrumental in mitigating public health disaster.⁽²⁾ The World Health Organization has emphasized the importance of the

Asia-Pacific region as a potential epicenter of emerging diseases such as avian influenza and severe acute respiratory syndrome.⁽³⁾ National preparedness is important, because emerging infectious diseases threaten the health and lives of large numbers of people as well as paralyze economic activity.⁽⁴⁾

PPPs have been addressed in several measures of Thailand's National Strategic Plan for Pandemic Preparedness, 2013–2016. However, there are a few cases of such partnerships and frameworks have been well established. Those partnerships will need to be proven as effective and become models for PPPs to strengthen Thailand's health security in particular of preparedness and response to the future outbreaks. The importance of PPPs in national health security is made possible by trust and by well-exercised national pandemic preparedness policies. The co-operation of multi stakeholders in developing disease control policies can build trust across the most difficult boundaries in the world.⁽⁵⁾

The objective of this study was to explore the value of public health PPPs project in strengthening national pandemic influenza preparedness for Thailand. This study focused on existing approaches of public health PPPs embedded in national pandemic preparedness plan and aimed at contributing the PPPs concept that would better enable of PPPs in Thailand's public health atmosphere.

Materials and Methods

A sequential mixed-methods research design was used in this study, beginning with a qualitative study using documentary research and in-depth interviews, followed by a quantitative study to complement and expand the finding of PPPs implementation outcome.

According to the characteristics of exploratory research, it was expected that both research methodologies would bring the desired results.

Qualitative research method

Qualitative study focused on discovery, insight, and understanding how the perspectives of those being studied offers the greatest promise of making significant contributions to the knowledge and practice of IFT. Furthermore, a logic model was also used to identify how the implementation phase of the PPPs is managed effectively. The scope of the framework included inputs, process, outputs, outcomes and impact of the partnership.

The author conducted in-depth interviews using semi-structure interview guide. The informants were the key stakeholders involving in developing the current version of Thailand national preparedness strategic plan on emerging infectious diseases, 2013–2016. Qualitative content analysis was conducted by interpreting elements with regard to the research questions.

Quantitative Research Method

In the quantitative methodology, the author determined outcomes of the partnerships which might raise public health preparedness for pandemic influenza pandemic in the future by assessing healthcare providers behavioral change following IFT training and education activities conducted. It was expected that the results would reflect how partnerships would strengthen national preparedness action in the future.

Population of quantitative method

Respondents for quantitative method were medi-

cal and public health practitioners who attended the conferences to prepare for clinical management on diagnosis and treatment of emerging/re-emerging infectious disease in Thailand. The events were organized in cooperation with the IFT and Bureau of Medical Technical and Academic Affairs, Department of Medical Services, Ministry of Public Health. The attendants were the representatives of healthcare providers from 4 provinces in Northern Region (Chiangrai, Nan, Phayao and Phrae) and 4 provinces in the South (Chumphon, Phangnga, Ranong and Suratthani). The first meeting took place in Nan on 9 and 10 February 2559 with a total of 266 attendants. The second meeting took place in Chumphon on 24 and 25 February 2559 with a total of 238 attendants. Data were obtained from 328 respondents of the total 504 attendants.

Variables:

Variables used in this study consisted of independent and dependent variables as follows:

A. Independent variables

1) Modifying factors:

Modifying factors included demographic data: gender (female/male); age; type of patient care (direct patient contact vs. support function); professional designation (physician who worked in OPD or IPD; nurse who worked in OPD or IPD; any specialized healthcare workers who worked in OPD/ IPD; medical/nurse students who worked in OPD/ IPD; field epidemiology staff; staff and volunteers who destroyed poultry carcasses or any other animals with suspected bird flu infection; diagnosis of influenza virus laboratory staff and any other).

2) Perceptions pertaining to influenza:

Perceptions pertaining to influenza were measured in the survey using the health belief model (HBM) domain that examined the following factors:

- Perceived susceptibility of contracting influenza which contributed to the overall perceived threat of contracting influenza. Perceived susceptibility was measured on information pertaining to the perceived risk of contracting influenza.

- Perceived severity which was the individual's feelings concerning the seriousness of contracting an illness. The extent to which being sick with influenza impacts on home and work obligations for healthcare providers would contribute to their overall perception of the severity of the illness and influence their decision to be vaccinated or not.

- Perceived benefits which were beliefs regarding the effectiveness of the various actions of influenza pandemic preparedness activities in reducing the disease threat.

3) Cues to action:

Cues to action were statements, warnings, comments, or other external signals that initiate or perpetuate a person's realization on health risks. This concept examined the impact of IFT educational training which provided information on influenza disease prevention and management control.

In addition, the final versions of the HBM scales were decided upon after the author distributed a pre-test questionnaire. Finally, only those scales whose internal consistency reliability (Cronbach's alpha) was higher than 0.60 were retained. Items in the HBM predictor categories and the categorical variables were measured on a 5-point Likert-type. The scores on each of the scales were averaged to form the independent variables. The values of the independent variable

predicted the participant's intention to take recommendations on health action for pandemic influenza preparedness.

B. Dependent variables:

Dependence variables were defined as the likelihood of taking recommended health action for pandemic influenza preparedness. The desired behaviors were identified as the following activities:

- 1) Collaborated in seasonal influenza vaccination campaign for healthcare providers;
- 2) Got seasonal influenza vaccination;
- 3) Collaborated in the seasonal influenza vaccination campaign for high risk people;
- 4) Aligned with the recommendations on the diagnosis guideline for pandemic influenza preparedness;
- 5) Aligned with the recommendations on the clinical management guideline for pandemic influenza preparedness;
- 6) Aligned with the recommendations on disease surveillance guidelines for pandemic influenza preparedness;
- 7) Aligned with the recommendations of the infectious control guideline for pandemic influenza preparedness;
- 8) Collaborated in support training and educational activities for healthcare providers for pandemic influenza preparedness;
- 9) Collaborated in the healthcare network in supporting disease management for pandemic influenza preparedness and emerging/re-emerging disease outbreak; and
- 10) Collaborated in educating the public about influenza in a language easily understood and managed the panic of the general public.

Data Analysis

The SPSS 15 was used to analyze the data. Prior to the actual analysis, the data were explored and screened for violations of univariate and multivariate assumptions of parametric statistics. Data analysis procedures included basic descriptive statistics, univariate analysis (Chi-square, t-test and ANOVA), and stepwise multiple regression analysis. Stepwise multiple regression analysis was used to identify the factors (the perceived susceptibility; perceived severity; perceived benefits; experience and IFT support on training and educational activities) which were expected to impact on healthcare providers' likelihood of behavior for taking the recommended health action for pandemic influenza preparedness.

Results

The study found that the cooperation between the IFT and other private and public networks such as the Department of Disease Control, Department of Medicine and Thailand MoPH-US CDC collaboration were beneficial to pandemic influenza preparedness in terms of increasing knowledge of influenza among medical and public health officers and increasing public awareness on influenza vaccine.

The effectiveness of IFT to strengthen national preparedness action in the future

The factors indicating the effectiveness of the cooperation between public authorities and private entities that had been chosen to use in the preparation for influenza outbreak plan by considering the components related with the logic model output of management process were identified as follows:

Performance metrics and milestones agreed by partners, in place and in use were the key determi-

nants to identify the IFT project outputs. The results revealed that IFT held a committee meeting that included representatives from public organizations and private entities. In the general meeting, the annual activity plan was presented and the achievable collaboration agreement between the public organizations and the private entities was proposed. The public organizations and private entities deemed to provide support to IFT according to their specialization and strengths to meet the activities' objectives.

The representatives from both public and private organizations committed on their tasks to echo the success of operational plan and performance measure-

ments. All partners agreed on planning of activities in advance, which aimed to utilize the capacity of available resources and to deliver social responsibility. For example, private entities leveraged IFT level of trust by inviting the physicians from private hospitals and other organizations to attend IFT trainings.

Summary of the IFT's action plans, key performance indicators and output during year 2004-2015, which demonstrated the successful of collaboration between the public organizations and private entities was shown in Table 1.

IFT played a key role in sharing influenza knowledge to medical and public health officers and general

Table 1 Summary of IFT's action plan, key performance indicators and output during the years 2004-2015.

Action plan approved by public organizations and private entities	Key performance indicator	Outputs during 2004 - 2015
1. Arranged general meeting at least once a year.	1. Having general meeting at least once a year with meeting summary.	1. Had 46 general meetings at least once a year with meeting summary provided to the participants.
2. Arranged short course training for medical and public health officers.	2. Arranged training for medical and public health officers at least 2 times per year.	2. Arranged 89 training for 23,838 medical and public health officers.
3. Provided influenza related information via various media, such as documents, brochures, newspapers, radio and TV etc.	3. Prepared and distributed influenza related information via various media, such as documents, brochures, newspapers, radio and TV, etc.	3. Prepared and distributed influenza related information via various media to the public and organizations from 2005 - 2008, in total 18 activities and 24,000 media materials.
4. Coordinated activities between public organizations and private entities.	4. Arranged the activities between public organizations and private entities.	4. Arranged activities in partnerships with related organizations, such as Department of Disease Control, Department of Medical Services, Department of Medical Sciences, US-CDC, WHO and Pharmaceutical Products Manufacturers Association.

people according to the objectives of the foundation, i.e. to be a center for coordination and distribution of information about influenza, to contribute knowledge, arrange training and give advices associated with influenza to medical and public health officers and general people and to cooperate with other organizations, both public and private entities, in warning and prevention of influenza.

IFT arranged training for medical and public health officers by cooperating with central, local and international organizations since 2004 to 2015 with totally 89 trainings and 23,838 people attended as shown in Figure 1.

In summary, IFT had worked to achieve its mission through collaborating to develop training opportunities, particularly in influenza diseases prevention and control, which can strengthen health care professionals' knowledge capacity. IFT engaged with both public health and private partners and built networks. Its strong national collaboration complements a network of regional and global partners, all committed to

reducing emerging infectious disease threats.

Quantitative Study Results

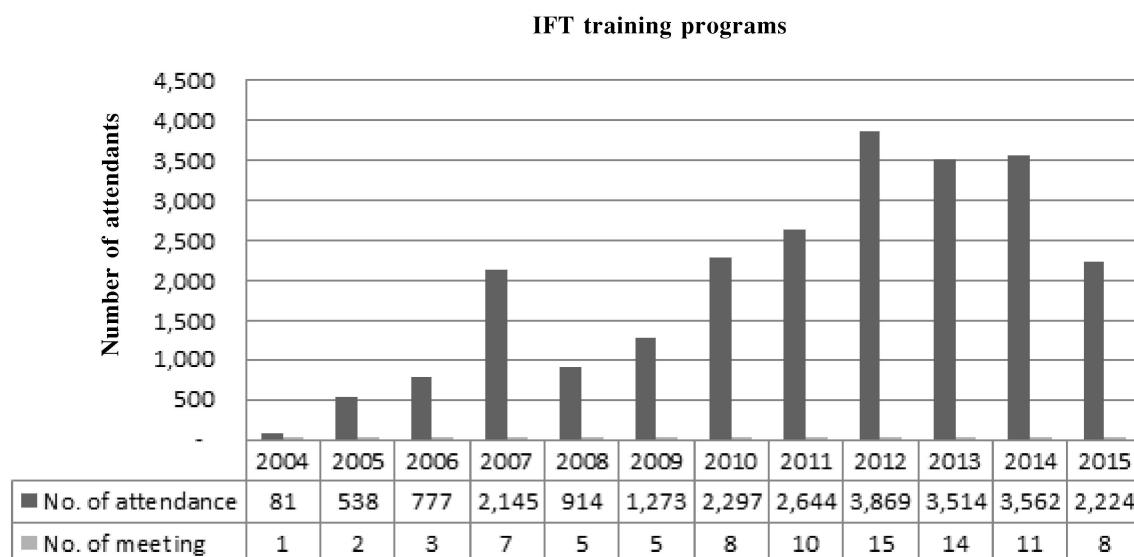
The analysis of quantitative data was consistent with the objectives of the research, the author presented the results analysis of the characteristics of medical and public health officers in preparation, diagnosis and treatment of emerging infectious disease patients, which was a problem in Thailand, by taking into account the answers to the questionnaires of 328 medical and public health officers, who participated in the meeting, for analyzed and presented the results.

Descriptive Statistics:

Of the 504 attendants who were given the questionnaires, 328 (65.1% response rate) returned a usable questionnaire. The major reason cited by those who chose not to participate in the survey was that they did not have the time to fill out the questionnaire at the end of the training.

Study population included 72.0% women and 28.0% men. Healthcare providers who attended the meeting were aged between 21 to 57 years old. The

Figure 1 Training arrangement representing the number of attendants and the number of training held in 2004–2015.



youngest healthcare providers, who were 21 years old, contributed to 0.3% of the total attendance and the oldest healthcare providers, who were 57 years old, contributed to 0.6% of total attendance. Whereas, healthcare providers who were between 40 and 42 years old were the largest age group representing 6.1% of the total attendance for each age group. The majority of attendants were aged between 41–50 years old. For the categories of patient care responsibility, 195 people (59.5%) had direct contact with patients, whereas 132 people (40.2%) performed their work as support staff. For professional designations, 50.9% of attendances were healthcare providers who worked as disease surveillance staff.

When considering the correlation between the independent variables (e.g. perceived susceptibility & perceived severity; perceived benefits; experience and IFT support in training and educational activities) and

dependent variable (healthcare providers' likelihood of behavior to take recommendations according to the guidance for healthcare professional on pandemic influenza preparedness), it was found that the 95% interval was at 0.139–0.612 with a significant correlation at 0.01 as described in Table 2.

The results from stepwise regression analysis revealed that there were 3 factors which significantly predict the behavior, adjusted R square value = 0.435, as shown in Table 3. The factors include; IFT support in training and educational activities, perceived susceptibility and perceived severity. IFT support in training and educational activities was the most important factor for behavior (adjusted R square value = 0.373). When combining IFT support in training and educational activities with perceived benefits, the adjusted R square value will increase to 0.425.

Table 2 Correlation between perceived susceptibility, perceived severity, perceived benefit, IFT's support and healthcare providers' likelihood of behaviors

		Behavior	Susceptibility	Severity	Benefit	Experience	IFT Support
Pearson Correlation	Behavior	1.000	0.391	0.376	0.443	0.139	0.612
	Susceptibility	0.391	1.000	0.535	0.446	0.173	0.363
	Severity	0.376	0.535	1.000	0.567	0.289	0.330
	Benefit	0.443	0.446	0.567	1.000	0.231	0.370
	Experience	0.139	0.173	0.289	0.231	1.000	0.094
	IFT Support	0.612	0.363	0.330	0.370	0.094	1.000
Sig. (1-tailed)	Behavior		0.000	0.000	0.000	0.006	0.000
	Susceptibility	0.000		0.000	0.000	0.001	0.000
	Severity	0.000	0.000		0.000	0.000	0.000
	Benefits	0.000	0.000	0.000		0.000	0.000
	Experience	0.006	0.001	0.000	0.000		0.045
	IFT Support	0.000	0.000	0.000	0.000	0.045	

Table 3 Stepwise regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.612 ^a	0.375	0.373	4.5438	0.375	195.379	1	326	0.000	1.662
2	0.655 ^b	0.429	0.425	4.3492	0.054	30.828	1	325	0.000	
3	0.663 ^c	0.440	0.435	4.3139	0.011	6.336	1	324	0.012	

Remarks: a. Predictors: (constant), IFT support

b. Predictors: (constant), IFT support, perceived benefits,

b. Predictors: (constant), IFT support, perceived benefits, perceived severity

d. Dependent variable: BEHAVE

Discussion

This study had explored whether PPPs were effective in strengthening the national preparedness action for Thailand in the future. It examined the underlying philosophy of PPPs, as well as their implementation and the effective management of PPPs. The mixed research method was conducted within the key organizations for the private and public sectors, which were involved in the collaboration project for pandemic influenza preparedness. The research offered general lessons on the value of the PPPs project to strengthen national health security while the country is facing the challenge of influenza outbreaks.

In this study, it was emphasized that effective public health PPPs could able to strengthen the readiness of the public health system in preventing or mitigating the risks of influenza outbreaks. And also underscored how organizations can implement the partnership project effectively. Managerial implications had been drawn from this study. From a theoretical perspective, PPPs was aimed to extend the classical view of resource dependence theory and power in alliances of inter-organizational relationships theory.⁽⁶⁾ Under the

traditional view, the components of dependence were exogenously given. As a consequence, this approach was essentially deterministic, because the degree of freedom of the principal organization was limited.⁽⁷⁾ According to Widdus, partnerships seem to be most justifiable when traditional ways of working independently have a limited impact on a problem domain; the specific, desired goals can be agreed by the collaborating players; relevant complementary expertise is interchanged between both sectors; the long-term interests of each sector are fulfilled (i.e. there are benefits to all players involved), and the contributions of expertise and resources are reasonably balanced⁽⁸⁾. PPPs for strengthening health services might fill gaps that have been left by the health system because, on its own, lack of resources, competing priorities and management issues render it incapable of providing public goods in an effectively and efficient manner.⁽⁹⁾

The findings also suggested that organizations seek collaboration to strengthen their capacity to meet performance goals, and increased exposure to and appreciation by other groups in the community.⁽¹⁰⁾ Key contextual shifts in public health were cited as reasons

for the emergence of PPPs: an ideological shift which has created a facilitating environment for business and a recognition that the public health agenda is too large for a single sector or organization to address on its own, a realization that the market alone could not provide solutions, and a growing interest within the private sector to enhance its involvement in social issues.⁽¹¹⁾

Lessons from the severe acute respiratory syndrome outbreaks showed that a factor affecting health-care workers' adherence to infection control practices was healthcare workers' perception that their facilities had clear guidelines and provided educational training programs in diseases outbreak managements.⁽¹²⁾

According to above mentioned, it was found that PPPs have become the preferred mechanism to improve public health facility for pandemic preparedness. Partnerships can benefit for improving training and educational facilities for healthcare workers. IFT is uniquely qualified to initiate thought and action, experiment with new and untried financial support, dissent from prevailing attitudes, and act flexibly. IFT is an example of an operating or special interest foundation for training and educational PPPs. It is a philanthropic organization, which can move quickly to fill a gap, function as neutral conveners, model successful approaches, and develop information for the public health policy to support national pandemic influenza preparedness for healthcare provider training and educational modules. This philanthropic organization can be a catalyst for developing partnerships among public and private sectors as well as strengthen national health security.

Recommendation

Based on this study, the further study to explore value of public health PPPs in long term is recommended.

Limitations of the Study

This study focused only on Influenza Foundation of Thailand (IFT), the public health PPPs which was addressed in Thailand's National Strategic Plan for Pandemic Preparedness Year B.E. 2556-2559.

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Abstract: ความร่วมมือระหว่างภาครัฐและภาคเอกชน: สร้างความมั่นคงด้านสุขภาพของประเทศในการรับมือกับโรคติดต่ออุบัติใหม่

พินทุ์สุตา เหลืองไพบูลย์ วท.ม.(ประสาทวิทยาศาสตร์), บ.ธ.ม.

คณะรัฐประศาสนศาสตร์ สถาบันบัณฑิตพัฒนบริหารศาสตร์

วารสารวิชาการสาธารณสุข 2560;26:S338-S347.

ในปัจจุบันสภาพแวดล้อมและเทคโนโลยีมีความซับซ้อนมากขึ้นและมีการเปลี่ยนแปลงอย่างรวดเร็ว สำหรับระบบสาธารณสุขซึ่งมีพัฒนาการทางการดูแลรักษาโรคและใช้เทคโนโลยีที่ทันสมัยทำให้หน่วยงานด้านสาธารณสุขต้องมีการสร้างความร่วมมือในระดับองค์กรขึ้น เพื่อสร้างความมั่นใจในการสรรหาทรัพยากรที่เพียงพอและตอบสนองให้เกิดการเข้าถึงบริการด้านการดูแลสุขภาพ ด้วยเหตุนี้การสร้างความร่วมมือระหว่างภาครัฐและภาคเอกชนจึงเข้ามามีบทบาทในระบบสาธารณสุขของประเทศ การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาถึงคุณประโยชน์ของความร่วมมือระหว่างภาครัฐและภาคเอกชนที่ดำเนินการในระบบสาธารณสุขว่าสามารถสนับสนุนให้เกิดการเตรียมความพร้อมรับมือกับการระบาดของไข้หวัดใหญ่ของประเทศไทยในอนาคตอย่างไร โดยใช้กรณีศึกษามูลนิธิส่งเสริมการศึกษาไข้หวัดใหญ่ ซึ่งเป็นโครงการความร่วมมือระหว่างภาครัฐและภาคเอกชนที่มีกิจกรรมเกี่ยวข้องกับโรคไข้หวัดใหญ่ การศึกษานี้ใช้วิธีการวิจัยผสมในการสำรวจการดำเนินกิจกรรมและผลของความร่วมมือดังกล่าวที่มีความสำคัญต่อการดำเนินการเตรียมความพร้อมรับมือการระบาดของไข้หวัดใหญ่ ผลการศึกษพบว่า มูลนิธิส่งเสริมการศึกษาไข้หวัดใหญ่มีวัตถุประสงค์เพื่อสร้างความพร้อมด้านสุขภาพของประชาชนสำหรับการเตรียมความพร้อมการระบาดของไข้หวัดใหญ่ ภาครัฐและภาคเอกชนได้ร่วมมือกันเพื่อให้บรรลุวัตถุประสงค์หลักของมูลนิธิฯ โดยเน้นการให้ความรู้แก่บุคลากรทางการแพทย์และสาธารณสุข รวมถึงสาธารณะชนทั่วไป ซึ่งมีความสอดคล้องกับแผนยุทธศาสตร์ของชาติในการเตรียมพร้อมรับมือกับการระบาดของโรคติดต่อต่าง ๆ เป็นการเพิ่มขีดความสามารถในการเตรียมพร้อมรับมือกับโรคระบาดของบุคลากรทางการแพทย์และสาธารณสุข จากการประเมินประสิทธิผลของโครงการพบว่า มูลนิธิส่งเสริมการศึกษาไข้หวัดใหญ่ไม่เพียงแต่สะท้อนให้เห็นถึงความต้องการของการเตรียมความพร้อมการระบาดของไข้หวัดใหญ่ แต่ยังสามารส่งเสริมให้เกิดการเตรียมความพร้อมของระบบสาธารณสุขในการรับมือกับโรคอุบัติใหม่และโรคอุบัติซ้ำต่าง ๆ ที่อาจจะเกิดการระบาดขึ้นในอนาคต ดังนั้น แนวคิดของความร่วมมือภาครัฐและภาคเอกชนนี้จะสามารถช่วยลดความเสี่ยงในขณะประเทศเผชิญกับภัยคุกคามของโรคติดต่ออุบัติใหม่ที่มีผลกระทบต่อความมั่นคงแห่งชาติ

คำสำคัญ: ความร่วมมือระหว่างภาครัฐและภาคเอกชน, การเตรียมความพร้อมรับมือการระบาดของไข้หวัดใหญ่, ความมั่นคงแห่งชาติ