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APPENDICES

APPENDIX 1

Cover page of project proposal

The project received permission from Director of Regional Medical Science Center Chonburi (RMSc CB) in implementing the project within inventory office Administration subsection. RMSc CB committed financial resource, human resource and logistical support for the project implementation.

A. Project location :Inventory office Administration subsection, Regional Medical Science Center Chonburi (RMSc CB) ,Tumbon Samed Aphure Mung Chonburi Province

B. Target groups: -Inventory staff
-21 RMSc CB 's staff who work relate inventory management system.

C. Project Duration: Phase 1 Preparation October-November (2 Months)
Phase 2 Implementation November- May (6 Months)
Phase 3 Monitoring and Evaluation February -May (4 months)

D. Funding Support in Baht

Total project	3,1500
Phase 1	15,500
Phase 2-3	16,000

APPENDIX 2

Definition and Terms

Knowledge and Skills purchasing process and register code number of Scientific equipment: outcomes measure by pretest and post test knowledge and skill checklist.

The number of purchase reduce: outcomes measure by data records of purchasing order sent out from RMSc CB .

The number of scientific equipment: outcomes measure by observation time to use computer register data record in SENAC program.

RMSc CB staff satisfaction: outcomes measure by questionnaire and in-depth interviews

The inventory control system of RMSc CB The scientific equipment have been controlled with the SENAC program according to the quality assurance system.

Operational definition

Inventory Procurement	Purchasing supplies
Inventory control	scientific equipment
SENAC	Scientific Equipment Name And Coding number
QAMM	Quality Assurance Management Manual
RMSc CB	Regional Medical Science Center Chonburi.
DMSC	Department of Medical Sciences
MOPH	The Ministry of Public Health

APPENDIX 3

In-depth interview guidelines

Guidelines were developed for in-depth interview as:

1. General feedback on inventory staff.

Questions

1. How did you think about the inventory staff?
2. What problems did you found during contact with inventory staff?
3. Do you have problems using inventory services?.
4. Had the inventory responsible?
5. What do you think about new tasks of inventory staff?

2 Inventory management

Questions

1. How did you feel about the inventory system?
2. What problems did you found during contact with inventory system?
3. Do you have problems using inventory procurement?
4. Do you have problems using inventory control?
5. What do you think about new inventory system?

3. Technology

Questions

1. How did you feel about the new technology for inventory system?
2. What problems did you found during use the SENAC program ?
3. Do you have problems using the SENAC program?
4. What do you think about the SENAC program?
5. Are you satisfied with inventory control?

4. Environment

Questions

1. What were the week point or strong point of the RMSc CB inventory system?
2. Do you think the policy and regulation have impact inventory system?

APPENDIX 4

The Checklist for Scientific Equipment control

Scientific Equipment	Equipment number	section	Equipment number		
			correct	incorrect	unseen
1. Ion Chromatograph	6633-002-04-16-0001	food			✓
2. Water bath (Memmert W 270)	6640-025-04-16-0006	food	✓		
3. Anaerobic Jar (QBBL)	6640-031-02-16-0003	food	✓		
4. Spectrophotometer UV VIS double beam	6632-001-03-16-0003	food	✓		
5. mixer tube(VM-300)	6640-023-19-16-0012	food		✓	
6. Autoclave (H-88 L4)	6530-003-01-16-0003	food	✓		
7. Gas Chromatograph(Chrompack)	6633-001-01-16-0005	drug	✓		
8. High liquid Chromatograph	6633-002-01-16-0001	drug	✓		
9. Analytical balance(0.001 g.)	6670-002-10-16-0002	drug		✓	
10. Spectrophotometer UV VIS double beam	6632-001-03-16-0002	drug	✓		
11. Hot plate (Thermolyne)	6640-016-06-16-0001	drug	✓		
12. Autoclave (H-88 L4)	6530-003-01-16-0005	drug	✓		
13. Gas Chromatograph (Varian Star3600CX)	6633-001-01-16-0003	toxico	✓		
14. Mixer tube (G-560 E)	6640-023-19-16-0006	toxico	✓		
15. Refrigerated centrifuge low speed	6515-014-02-16-0002	toxico	✓		
16. Hot air oven (Memmert)	4430-004-01-16-0008	toxico	✓		
17. Spectrophotometer UV VIS single beam	6632-001-02-16-0002	toxico	✓		
18. Microscope Fluorescence	6650-002-05-16-0001	Patho	✓		
19. Immuno Assay Analyzer Automatic fluorescence	6631-001-03-16-0001	Patho	✓		✓
20. Autoclave (H-88 L4)	6530-003-01-16-0004	Patho	✓		
21. Refrigerated centrifuge low speed	6515-014-02-16-0001	Patho	✓		
22. Elisa Reader Microplate	6631-001-20-16-0001	Patho			✓
23. KVP Time and exposure meter	6525-007-11-16-0001	radia	✓		
24. Condom infraction tester	6685-011-02-16-0001	radia	✓		
25. Thermocouple	6685-012-40-16-0001	develop			✓
26. Reciprocal shaker	6640-023-13-32-0001	drug	✓		
27. Gas flow controller	6685-010-04-32-0001	radia	✓		
28. Automatic spreader TLC	6633-006-62-32-0001	toxico	✓		
29. Balance	6670-002-05-32-0001	drug	✓		
30. Electronic micro balance	6670-002-12-32-0004	Toxico	✓		
31. Electronic Precision	6670-002-10-32-0002	Drug	✓		
32. Dispenser	6640-030-03-32-0005	Food	✓		
33. Dispenser Automatic	6640-030-02-32-0001	Food	✓		

Scientific Equipment	Equipment number	section	Equipment number		
			correct	incorrect	unseen
34. Beam data acquisition	6525-011-01-32-0001	Radia	✓		
35. Infraction tester	6685-011-02-32-0001	radia	✓		
36. Freeze dryer	6640-033-01-32-0001	Food	✓		
37. Blender	6640-023-01-32-0001	toxico	✓		
38. Blender ultra	6640-023-02-32-0002	Food	✓		
39. Mixer	6640-023-19-32-0001	drug	✓		
40. Focal spot test tool	6525-007-07-32-0001	radia	✓		
41. Evaporator vacuum Centrifuge	6640-024-03-32-0001	toxico	✓		
42. Pipette washer	6640-032-01-32-0002	toxico	✓		
43. Automatic pipette washer and dryer	6640-032-05-32-0001	Food	✓		
44. Conductivity meter	6631-009-09-32-0001	Food	✓		
45. Lux meter	6760-001-02-32-0001	radia	✓		
46. pH Meter	6640-024-03-32-0001	Patho	✓		
47. Centrifuge low speed	6515-014-01-32-0001	drug	✓		
48. Centrifuge ultra high speed	6515-014-05-32-0001	Patho	✓		
49. Refrigerated centrifuge low speed	6640-024-03-32-0001	Patho	✓		
50. Micro centrifuge	6515-014-06-32-0004	Patho	✓		
51. Bunsen	6640-022-02-32-0005	Patho	✓		
52. Bunsen	6640-022-02-32-0006	drug	✓		
53. Balance weight	6670-004-01-32-0004	Food	✓		
54. Balance weight 1/15	6670-004-01-32-0003	develop	✓		
55. Fume Hood	6636-001-01-32-0015	Food	✓		
56. Fume Hood	6636-001-01-32-0018	drug	✓		
57. Fume Collector	6636-001-04-32-0001	toxico	✓		
58. Biosafety carbinet class II	6636-003-01-32-0002	drug	✓		
59. UV Lamp carbinet	6633-006-64-32-0001	toxico	✓		
60. Hot plate Magnetic Stirrer	6640-016-06-32-0004	Patho	✓		
61. Polarimeter	6631-002-01-32-0002	drug	✓		
62. Spectrophotometer UV VIS single beam	6632-001-02-32-0002	toxico	✓		
63. Ultrasonic bath	6640-025-06-32-0003	toxico	✓		
64. Bath water with temperature control	6640-025-04-32-0001	Food	✓		
65. Hot air oven (Memmert)	4430-004-01-16-0009	drug	✓		
			59	2	4

Assessor

1.....supervisor Administration

2.....Co ordinate quality control

APPENDIX 5

Checklist for the Evaluation of Skills in Operating the Scientific Equipment Control by using the SENAC Program

Number of time(s) for this evaluation

No.	Items	Yes	No
SENAC PROGRAM			
1	Logging on to the SENAC program by using a password		
2	Register scientific equipment properly according to the categories specified in the SENAC Manual		
3	Adding the data of a new equipment that has just been received		
4	Retrieving the data of equipment distributed by categories		
5	Assigning the numbers and codes correctly for equipment in line with the ones specified in the SENAC Manual		
6	Being able to search for the existent data and use them again		
7	Being able to edit the existent data		
8	Being able to print the data as required in a hard copy		
9	Being able to link the data in SENAC Program with the Department of Medical Science		
10	Being able to end all tasks and exit SENAC program properly in each step.		

Evaluators: 1..... Administrative Supervisor

Date

2..... Computer officer

Date

APPENDIX 6

Memorandum 1



Regional Medical Science Center – Chonburi
59/2 Moo 3, T. Samed, A. Muang, Chonburi 20000

6 October 2002

To: Dr. Jongdee Wongphinairatana
Re: Requesting assistance in checking a knowledge test and the questionnaire on a satisfaction survey
Enclosures: 1. Proposal - 1 copy
2. The questionnaire on a satisfaction survey - 1 set
3. The knowledge test for supply and inventory management staff - 1 set
4. The knowledge test on how to use SENAC program - 1 Set

My name is Mrs. Orapin Kaewmaneechoti, a Medical Science Officer Level 6 working in the Public Health Consumer Protection Section of Regional Medical Science Center – Chonburi. I am a student in the Health System Development Program for the degree of Master of Public Health, College of Public Health, Chulalongkorn University. I have been approved to conduct a research on “To Enhance the Effectiveness of Supply and Inventory management system of Regional Medical Science Center –Chonburi”. In doing this research, I have used the Quality Assurance Management Manual (QAMM) as the reference and have used your documents and papers as the guiding contents for improving the activities of supply and inventory management. For the implementation stage of the study in this program, each student is required to actually implement his/her thesis in the setting of each own workplace.

To date, I have implemented my thesis up to the point where the implementation results, after the interventions have been made, are to be evaluated. I would like to request for your kind assistance in serving as an expert for checking the questionnaire that was used in the process of such implementation. Once you decide and agree to assist accordingly, the College of Public Health, Chulalongkorn University will issue a formal request and forward it to you further.

Your consideration in this matter would be very appreciated.

Mrs. Orapin Kaewmaneechoti
A Student in the Master of Public Health Program
College of Public Health, Chulalongkorn University

APPENDIX 7

Memorandum 2



Agency: Regional Medical Science Center – Chonburi
Ref. No. _____ **Date:** 10 November 2002
Re: Requesting assistance in asking staff to complete the questionnaire for a satisfaction survey

To: The Director of Regional Medical Science Center (Songkhla, Pitsanulok, khonkhan, Samutsongcham)
Enclosures: 1. Proposal - 1 copy
 2. Questionnaire for a satisfaction survey – 10 sets
 3. The knowledge test for supply and inventory management staff - 1 set

My name is Mrs. Orapin Kaewmaneechoti, a Medical Science Officer Level 6 working in the Public Health Consumer Protection Section of Regional Medical Science Center – Chonburi. I am a student in the Health System Development Program for the degree of Master of Public Health, College of Public Health, Chulalongkorn University. I have been approved to conduct a research on “To Enhance the Effectiveness of Supply and Inventory management system of Regional Medical Science Center –Chonburi”. As I am studying in the “Learning at the Workplace Program”, I am required to actually implement my thesis in the setting of my workplace, and I have implemented it so far up to the evaluation phase. I have enclosed a copy of the introduction and the proposal in order that you can have a clear information about the objective of this research.

To date, I have implemented my thesis up to the point where the implementation results are to be evaluated after all interventions have been made. Therefore, I would like to request for your kind assistance in asking the staff in Regional Medical Science Center – Songkhla to complete all the questionnaires.

Your consideration in this matter would be very appreciated.

Mrs. Orapin Kaewmaneechoti
 A Student in the Program of Master of Public Health
 College of Public Health, Chulalongkorn University

APPENDIX 8

Questionnaire

Satisfaction on the performance of supply and inventory management of the Regional Medical Science Center in the area of the procurement of goods and services and inventory control

Instruction:

This questionnaire is aimed to ask about your opinions. Your opinions will not be considered as either right or wrong. You have a full extent of freedom to share your opinions as you wish.

In completing this questionnaire, you do not need to put down your name. Your answers will not have any affects on yourself or your positions in the organization.

Your contribution, by filling in all information frankly according to what you think and by completing all the items, will make this questionnaire be very valuable.

This questionnaire is divided into 2 parts:

Part 1: Your personal data – 4 items

Part 2: Data about the satisfaction on the performance of supply and inventory management in the area of the procurement of goods and services and inventory control of the Regional Medical Science Center – 27 items

Part 3: Recommendations and areas for improvement

Part 1: Personal Data

Instruction: Please put the sign ✓ in the () in front of the text that is best described about yourself.

1. The status of the person completing this questionnaire

- Male Female

2. Position/Title:

- Civil Servant Permanent Employee
 Temporary Employment Contractual Officer

3. Number of years serving in the service

- 3-5 years
 5-10 years
 10-15 years
 Longer than 15 years

4. As in which role are you involved in the supply and inventory management activities?

- Head of the Section
 A member of the “Inspection and Acceptance Committee” for the procurement of supply
 A personnel requesting for supplies
 A finance staff
 A Quality Assurance staff

Part 2: Data on the satisfaction about the performance of supply and inventory management of RMSc in the area of the procurement of goods and services and inventory control

Instruction: Please put the sign ✓ in the space in the column of the rating scales of each text that reflects your opinion the best.

Type of satisfaction	n	Very satisfied (5)	satisfied (4)	Neutral (3)	Unsatisfied (2)	Very unsatisfied (1)
<u>Performance of supply & inventory management personnel</u> Mean						
1. Enthusiasms in performing duties						
2. Being disciplinary						
3. Good interpersonal relationship						
4. Being responsible for duties						
5. Ability in solving contingent problems						
6. Regularly updating one's self with knowledge and skills						
7. Adopting technology in work performance						
8. Extending cooperation in solving problems and developing the works						
9. Maintaining good relationship between work units						
<u>Functioning in the procurement of goods and services</u> Mean						
10. Conducting procurement in line with the Regulation of the Office of the Prime Ministry on Supply and Inventory Management 2535 B.E. and its amendments						
11. Knowledge and understanding of inventory personnel about the procurement.						
12. Appropriateness of the forms used for procurement process.						
13. Opportunity for users in participating and defining/selecting the supplies to be purchased						
14. Purchases are made in time to meet the needs						
15. The purchased items are matched to what users want						

Type of satisfaction	n	Very satisfied (5)	satisfied (4)	Neutral (3)	Unsatisfied (2)	Very unsatisfied (1)
16. The quality of purchased items meets the quality specified.						
17. The acceptance process for purchased items is carried out in a timely manner.						
18. Perform procurement activities according to schedule set in annual procurement plan						
<u>Inventory control of scientific equipment</u> Mean						
19. Procedural steps for registration of the equipment						
20. Searching for the registration number of scientific equipment						
21. Searching for maintenance history of scientific equipment from the registration list						
22. All scientific equipment are assigned with registration/control number						
23. Using computer program to search data on history of equipment from a database						
24. Making requests for and distributing supplies through a computer program						
25. Processing a request for equipment repair						
26. Processing a request for discharging the equipment from the list						
27. Convenience in annual inventory check at the end of fiscal year						
Mean						

Part 3:

Recommendations and areas for the improvement for the procurement of goods and services and inventory control

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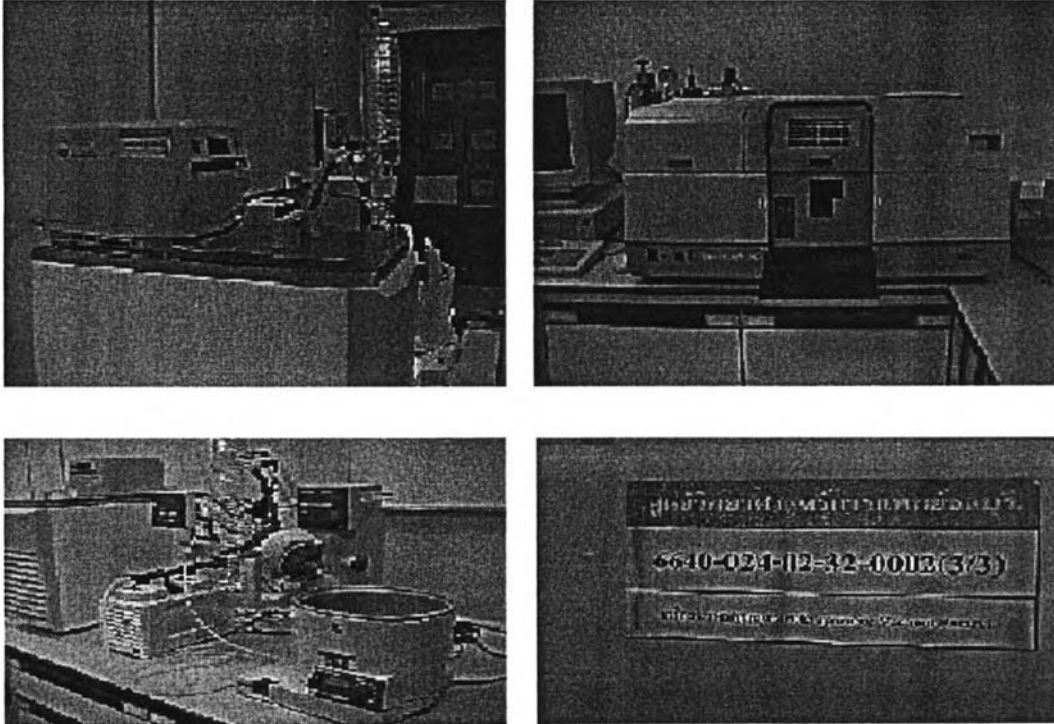
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Your cooperation in completing this questionnaire is appreciated.

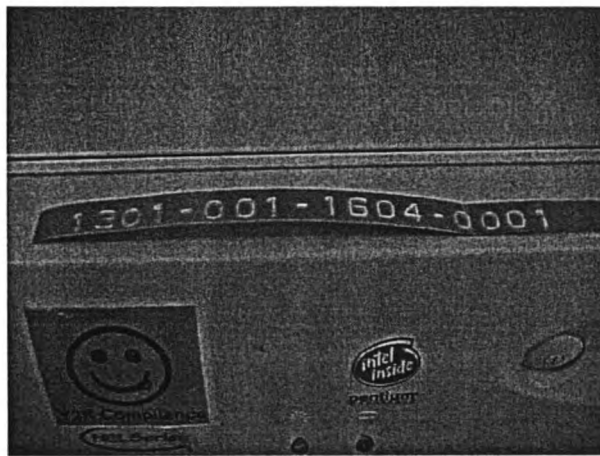
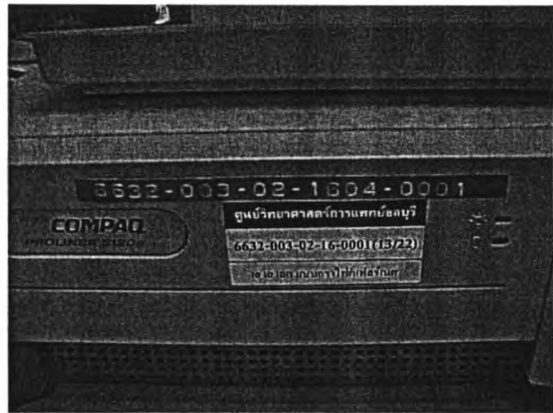
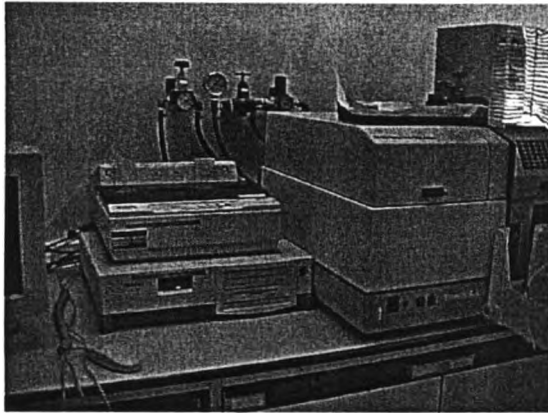
Mrs. Orapin Kaewmaneechoti
A Student in the Program of Master of Public Health
College of Public Health, Chulalongkorn University

APPENDIX 9

Picture



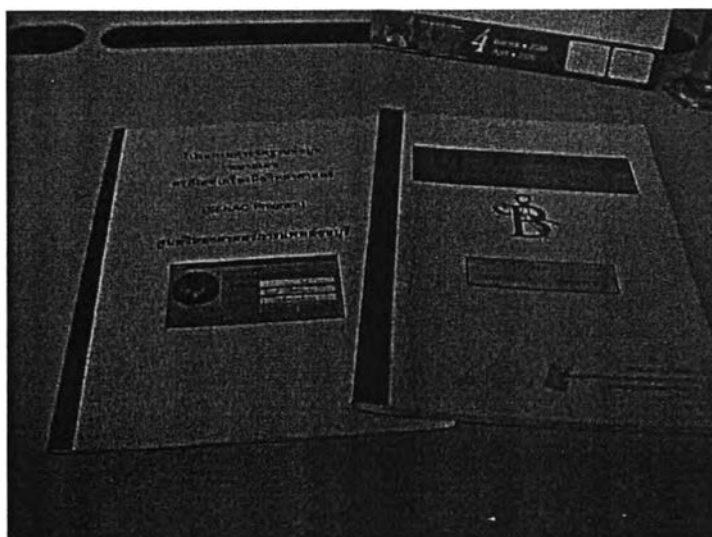
The Registration coding number of equipment number



Comparison Before and after implementation of Inventory control



Operation of inventory officer and assistances



Manual of SENAC program and Manual of Purchasing service

CURRICULUM VITAE

Name Orapin Kaewmaneechoti
Nationality Thai
Date of Birth June 2, 1960

Education/Training

1991 Bachelor of Education (B.ED) Science- Chemistry, Srinakharinwirot
University, Bangkhen, Changwatana Road, Bangkok, Thailand

Work Experience

2001-2005 Consumer Protection Public Health, Regional Medical Science Center
Chonburi, Chonburi Province
1993-2000 Drug analysis Section, Regional Medical Science Center Chonburi,
Chonburi Province
1985-1992 Toxicology Section, Regional Medical Science Center Chonburi,
Chonburi Province
1979- 1984 Bio-Chemistry Laboratory, Chonburi hospital ,Chonburi Province

