IMPROVING PHYSICIANS' RATIONAL USE OF ANTIBIOTICS IN CHILDREN UNDER 5 YEARS OLD WITH ACUTE RESPIRATORY INFECTION (ARI) THROUGH FACE-TO-FACE EDUCATION AND IMPLEMENTATION OF STANDARD TREATEMENT GUIDELINE IN BA VI DISTRICT HOSPITAL, VIETNAM

Hoang Duc Hanh

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Masters of Public Health
Health Systems Development Programme
College of Public Health
Chulalongkorn University
Academic Year 2000
ISBN: 974-346-921-4

© College of Public Health, Chulalongkorn University

Bangkok, Thailand

The	sis	Title
	010	11110

: Improving Physicians's Rational Use of Antibiotics in Children Under 5 Years Old with Acute Respiratory Infection (ARI) Through Face-to-Face Education and Implementation of Standard Treatment Guideline in Bavi District Hospital, Vietnam

By

: Hoang Duc Hanh

Program

: Master of Public Health (Health Systems Development)

College of Public Health

Thesis Advisor

: Sathirakorn Pongpanich, M.A., Ph.D.

Accepted by the College of Public Health, Chulalongkorn University,

Bangkok Thailand in Partial Fulfillment of the Requirements for the Master's Degree

Blite fills - amount, Dean of the College of Public Health (Professor Chitr Sitthi-amorn, M.D., Ph.D.)

THESIS COMMITTEE

Chairman

(Marc Van der Putten, M.P.H)

(Sathirakorn Pongpanich, M.A., Ph.D.)

Member

(Edgar J. Love, M.D., Ph.D.)

Abstract

Irrational use of drugs, especially antibiotic is a big problem on the public health in Vietnam as well as at Ba Vi District Hospital. The use of treatment guideline may reduce irrational prescribing behavior. In Vietnam, the treatment guideline for many common diseases were issued. However, some studies revealed that most doctors at the public hospitals did not use these treatment guideline in their prescribing. It is assumed that implementation of treatment guideline and supervision of this implementation will increase adherence to available guideline.

This study is to improve rational use of antibiotic focus on hospital outpatients by an intervention that include implementation of treatment guideline and supervision this implementation through face-to-face education. This study focuses on children under five with ARI as model for other conditions may be addressed in the future.

The main objective of proposed study is to improve rational prescribing of antibiotics by the prescribers of Bavi District Hospital. This is an intervention pre-post study design with both quantitative and qualitative approach. The out-patient ward and 3 inter-commune polyclinics of Bavi District Hospital will be selected.

The intervention in this study is using face-to-face education in order to introduce again existing treatment guideline for ARI and supervise implementation of guideline of physicians by expert and researchers in 6 months at Ba Vi District

Hospital. Two evaluations will be carried out, before and after intervention, by researchers. Researchers will conduct the baseline survey, evaluations studies and workshop and supervisions.

Evaluation of intervention will be based on analysis of prescription encounters, and on KAP survey of prescribers in relation to guideline implementation. Prescription encounters have to collected in a prospective study while data on KAP survey of prescribes could be collected in a cross sectional study. For the qualitative purpose, one focus group discussion will be conducted to explore the knowledge of the prescribers and for developing motivating messages during education sessions. To develop skill in handing obstacles during data collection process, data exercise was done in the Ba Vi District Hospital.

The results of this study will be evidence to the planners and policy maker to introduce other treatment guideline to the prescribers of Ba Vi District Hospital and to ensure rational prescribing, hence promote rational use of drugs, especially antibiotics.

Acknowledgements

I am most grateful to Health System Research program in Vietnam (collaborating between Vietnam and Sweden) for giving me this opportunity to study in this program.

I wish to express my gratitude to the dean of the College of Public Health, Chulalongkorn University, Professor Chitr Sitthi-amron, M.D, Ph.D., for his valuable advised and guidance to my study.

I wish to acknowledge Associate dean Professor Watttana S. Janjareon, Professor Edgar J. Love, M.D., Ph.D., Dr. Nuntawarn Vichit-Vadakan, Dr. Sauwakon Ratanawijitrasin, Ajarn Mare van der putten, Ajarn Wacharin Tanganonit, Ajarn Ratana Somrongthong, AjarnTanawat Likitkererat for their kindness and guidance throughout the study.

I specially wish to acknowledge my gratitude and appreciation to my thesis adviser Dr. Sathirakorn Pongpanich for his valuable guidance, valuable suggestion and comment throughout the whole process of the study and writing this thesis.

I also wish to thank other academic staffs and administrative staffs of the college of public health who assisted me in various way.

I would like to thank all my friends and students of the MPH course of the College of Public Health, Chulalongkorn University for their assistance and cooperation rendered during the study.

I would like to convey my gratitude to a director of the Bavi District Health

Center, who help me throughout this course and collecting data for my data exercise.

The last, I would like to attest my deep gratitude to my family, my wife and my children for their enthusiasm and encouragement throughout the course.

Contents

Page
Abstractiii
Acknowledgementsv
Table of contentsvii
List of figures and tablesxiii
List of acronymsxv
Chapter I
1. Introduction
Chapter II : Essay
Irrational use of antibiotic in children under 5 years old with acute respiratory
infection (ARI) in Bavi District Hospital, Vietnam
2.1 Introduction
2.2 Definition and concepts9
2.2.1 Definition of rational drug use9
2.2.2 What is irrational use of drugs?10
2.2.3 What is irrational use of antibiotics?
2.2.4 What is acute respiratory infection (ARI)?13
2.3 Why is it targeted at children with ARI?14
2.4 Problem with the treatment at children with ARI by antibiotics15
2.4.1 Situation in Vietnam15

2.4.2 Situation in Bavi district	17
2.5 Main causes of the problem.	20
2.5.1 Prescribers (Physicians)	20
2.5.2 Dispensers (Pharmacies)	21
2.5.3 Patients and communities	21
2.5.4 Health system.	21
2.6 Consequences of the problem	23
2.6.1 Impact on medical care	23
2.6.2 Economic impact	23
2.6.3 Increased risk of unwanted effects	23
2.6.4 Psychosocial impact	24
2.7 Developing strategies to improve antibiotic use	24
2.7.1 Identify the problem	24
2.7.2 Identify underlying cause of irrational prescribing of	
physicians	25
2.7.3 Possible intervention strategies to improve rational	
prescribing	26
Education strategies	27
Managerial strategies	27
Regulatory strategies	27
Mechanisms	28
2.7.4 Choose interventions	29
Face-to-face education	30
Other approaches versus face-to-face education	31

Focus and selection of interventions	33
Standard treatment guideline	34
2.8 Conclusion	38
References	39
Chapter III: Proposal	
Improving physicians' rational use of antibiotics in children under 5 years	ars old with
acute respiratory infection (ARI) through face-to-face education and in	mplementation
of standard treatment guideline in Bavi District Hospital, Vietnam.	
3.1 Introduction	47
3.1.1 Background	47
3.1.2 Problem statement	49
3.2 Rationale.	50
3.2.1 Factors influencing prescribing behavior	50
3.2.2 Impact of treatment guideline on prescribing practice	52
3.2.3 Acute respiratory infection (ARI)	53
3.3 Objectives	55
3.4 Research methodology	56
3.4.1 Study population	56
3.4.2 Sampling and sample size	57
3.4.3 Study design.	58
3.4.4.Approach	59

Examination of the existing behavior......61

Diagnosis the	motivating factors and/or underlying causes62
Treatment; D	esign and implement intervention63
Evaluation of	the project63
KAP o	of prescribers64
Encou	nters analysis64
Variab	oles66
Source	es of data67
Data c	ollection67
	Collection of baseline data67
	Collection of prescription encounters for
	evaluation68
	Collection of data on prescribes' behavior68
	Collection of data by focus groups69
	Instruments for data collection:
	questionnaire69
	Data analysis70
	Quantitative data analysis70
	Qualitative data analysis70
3.5 Activities and Time Plan.	71
3.6 Budget	74
References	78

Chapter IV: Data exercise

4.1 Introduction	81
4.2 Objectives	82
4.3 Methodology	82
4.4 Data collection method	83
4.4.1 Data collection technique	83
4.4.2 Instruments for data collection	84
4.5 Location and profile of the hospital	84
4.6 Pre-field activities	85
4.7 Sample size	85
4.8 Findings and discussions	86
4.8.1 Findings.	86
4.8.2 Discussion.	94
4.9 Lesson learned	96
4.10 Limitation	97
Chapter V	
Presentation	98
	*
Chapter VI	
Bibliography	120

Appendices	123
Appendix – I	124
Appendix – II	125
Appendix – III	126
Appendix – IV	131
Appendix – V	132
Appendix – VI	135
Appendix – VII	136
Appendix – VIII	137
Appendix – IX	138
Appendix – X	140
Curriculum Vitae	141

List of Figures and Tables

Figures:

1.	Leading infection killers, 1998 estimate Children under five years old15
2.	Antibiotic consumption among the children in Bavi18
3.	Prevalence of antibiotic resistant (R) strains of H influenza (Vacomycin
	not tested), and S pneumonia ampicillin and Loracarbef not tested)19
4 .	Causes related to problem
5.	Conceptual framework
6.	Deaths of children under five years due to ARI compare with deaths of
	children under five54
7.	The progress of the study design
8.	Steps of finding existing practices and their cases and approach to
	solve
Ta	ables
1.	Deaths of children under five years old due to ARI compare with total
	deaths of children under five years55
2.	Population, administrative units and health facilities in Bavi, Hatay57
3.	Leading causes of morbidity in Hatay Provinces and Bavi District57
4	Variable table

5 .	Time plan	72
6.	Budget	74
7.	Indicators of knowledge	87
8.	Indicators of attitude	90
9.	Percentage of encounters having antibiotics	91
10.	Percentage antibiotic encounters having more than 2 antibiotics on	
	antibiotic encounters	92
11.	Percentage of antibiotic encounters prescribing antibiotics recommend	ded
	by guidelines	92
12.	Percentage of antibiotic encounters with right indication	93
13.	Percentage of antibiotic encounters with full dosage	94

List of Acronyms

ARI Acute Respiratory Infections

ALRI Acute lower Respiratory Infections

AURI Acute upper Respiratory Infections

Asst. Dr Assistant Doctor.

BDH Bavi District Hospital

CRP C-Reactive Protein

CDD Control of Diarrheal Diseases

FGD Focus Group Discussion

GDP Gross Domestic Product

GPs General Practitioners

ICIUM International Conference on Improving use of Medicine

INRUD International Network for Rational Use of Drugs.

KAP Knowledge Attitude and Practice

MD Medical Doctor

MoH Ministry of Health

NDP National Drug Policy.

ORS Oral Rehydration Salts/Solution.

RDU Rational Drugs Use

STG Standard Treatment Guideline

SIDA Sweden International Development Agency

SAREC Swedish Agency for Research Cooperation with Developing Countries.

UNICEF United Nations Children Fund

USD US Dollars

WHO World Health Organization