〈教育報告〉

平成18年度専門課程Ⅰ
国際保健分野

Evaluation of Disease Surveillance System to Detect Disease Outbreak in Cambodia

Pheak D. CHAU

Thesis Advisors:　Hiromitsu OGATA , Nobuyuki HYOI

Objectives:　This study aimed to identify strengths and weakness of Community-based Surveillance System（CBSS）and Early Warning Outbreak Recognition System（EWORS）in detecting disease outbreak in Cambodia by using a new model modified from the CDC guideline and to evaluate the system attributes by Simplicity, Flexibility, Sensitivity, Predictive Value Positive, Representativeness, and Timeliness by using the new system.

Methodology:　This study methodology was adopted from the CDC guideline for evaluating disease surveillance system. System description, usefulness of both systems, development of the new model, and evaluation of attributes of CBSS and EWORS by Simplicity, Flexibility, Sensitivity, Predictive Value Positive, Representativeness, and Timely by using the new model. This study was a review of the systems by using literature and existing manuals.

Result:　CBSS is a surveillance system which detects and report diseases from within the community by village health volunteers（VHVs）. CBSS was implemented in July 2000 in four border communes of three provinces of Cambodia. EWORS is health facility-based computer software for collecting and analyzing surveillance data in order to detect communicable disease outbreak early. Eleven Sentinels are implementing EWORS.

As shown in information flow, CBSS collects data from community and reports aggregates, analyzes and interprets data during monthly meetings. VHVs report immediately to health staff when they identify any suspicious cases of diseases or unusual cluster of disease. Decision making by health staff and operational district staff for conducting investigation or control is done urgently. However, EWORS collects data as signs or symptoms of diseases of patients seeking medical consultation at the referral hospital or health centers which are EWORS sentinels sites. Data are compiled into data bases in computer and sent to EWORS host（EWORS Center）daily by using internet/ e-mail. Data are aggregated, analyzed and interpreted by sentinel staff as well as EWORS host everyday. Weekly feedback is reported by CDC Department of Ministry of Health.

According to analysis of both system descriptions, all indicators in the CDC Model were not completely able to be used in evaluating CBSS and EWORS recently. Therefore, a new model was developed and modified from the CDC Model to evaluate both systems. The new model which was named as P Model was suitably used to evaluate attributes of CBSS and EWORS. Nine indicators in the CDC model were excluded, four indicators were not applicable in this evaluation and two new indicators were included in the new P Model. By using the P Model, CBSS showed the average score of Simplicity 4 while EWORS had an average score of 3.3. However, EWORS had an average score of 4 points for Acceptability while CBSS received the average score of two points. A radar chart was used to summarize the results which showed that CBSS had a higher performance by Timeliness, Simplicity and Representativeness while EWORS had a better performance on Flexibility and Acceptability of EWORS.

Discussion:　Theoretically, nine indicators of the CDC Model were recommended to be used for evaluating the system attributes but practically these indicators were not able to be measured in the CBSS and EWORS in Cambodia. For instance, reporting form and system operation of both systems did not contain any information

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to evaluate these indicators such as no Zero report or laboratory tests. Four indicators of CDC model were not applicable to be used in the P Model because these indicators need numeric data to measure. Two new indicators were included in the P Model in order to practically evaluate the acceptability, representativeness and timeliness of both systems. Based on this evaluation through the P Model, strengths and weakness of both systems were discovered. VHVs participating in CBSS Cambodia had played an important role in collecting data from their own communities to report to the health staff during monthly meetings in the health centre and urgently report any cases of usual cluster of disease or death events. In addition, monthly meetings with participation by health staff and VHVs attempted to give feedback and to aggregate, analyze, and interpret data in order to identify the real situation in their communities in order for timely intervention and control to be made. CBSS faced some weakness such as the difficulties in urgently informing health staff in cases of outbreak occurrence in remote areas. However, a lot of information in the reporting form and regular monthly meeting, low benefit from involvement in CBSS can be factors which discourage VHVs participation. EWORS also illustrated some strengths such as easy to collect data by using simple system reporting forms and was easy to analyze and interpret data by using key analysis through computers. Moreover, data were transferred through internet/e-mail which was fast and health staff received high incentives for their participation. However, EWORS required more resources to operate their implementation and EWORS collected data from the patients seeking medical consultation at health centers.

Conclusion: As described on the results and discussion section, it is clear that CBSS has more possibilities and strengths to achieve its objectives than EWORS. Hence, The Ministry of Health and other NGOs in Cambodia should be interested in supporting the implementation of CBSS as well as extending CBSS to other different rural areas. Furthermore, NGOs which operate CBSS should conduct assessment evaluation on implementing CBSS by using the P Model to evaluate the attributes of the system and to evaluate the attributes by the system by different diseases.

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A Study on Web-based Disease Reporting System and Related Information Dissemination in China

Liangyong Lu

Introduction:　The major lessons from the SARS outbreak in early 2003 in mainland China, especially in the early stage of SARS outbreak are: blockage of information from all directions, no transparency on the message of infection, and no authorized agency for information dissemination. There are 3585（as of 2005）CDCs of four levels with disease surveillance as one of their main tasks. Since the over of SARS, the capability construction on infectious disease surveillance has been set as the urgent task for CDCs, focusing on information technology applications, mainly the development of web-based disease reporting systems and related information dissemination through internet to. Also the emerging infectious diseases like SARS, Avian Influenza, etc. all urgently need rapid and accurate data/information to be more integrated into the functioning for CDCs over the country to meet the higher requirements of disease surveillance set by IHR（2005）. The study try to identify the issues related to coverage of DRS, the quality of the data, and the utilization of websites.
Methods:　We conducted the study through Internet, including websites of MOH, provincial health bureaus, National CDC, provincial CDCs as well as others. The main data related to website visitor number and information availability by search engineer were obtained during January and February 2007.
Results:　The internet development in the past years have been very quickly in China, with around 20% increasing rate for individual internet users and microcomputer used. Until the SARS outbreak in the spring of 2003, notifiable infectious disease were reported to the county-level CDCs by paper reporting card via mailing system and the main shortcoming was delay of reporting. After SARS the government urged to establish a rapid response system of public health emergencies through web-based reporting system and the central database was located in National CDC.

In June 2003 the plan to develop DRS was set up and the first DRS was put into use from 1 January 2004 on. By now 11 subsystems had been developed, composing the China Information Systems for Disease Control and Prevention. Since January 2004, more and more health institutes report NIDs to local CDCs via DRSs. In 2005, there were totally 298997 health institutes of obligation for reporting. By investigation, out of the 31 provincial CDCs, 27 had operated websites to public. After the adoption of DRS, the data flow had been changed greatly compared with that before SARS.

The MOH owned the increasing of incidence rate, death rate and deaths per 100 patients of NIDs in recent years to the improved accuracy after the direct reporting via DRS by the hospitals, health centers etc. But the DRS coverage was not 100% yet and the unreported rate was also high.

From February 2004 on, MOH started to announce the "Epidemics Information" in its website, of which 44（51.8%）were NIDRs. Those NIDRs were announced regularly to provide data of last month, without detailed epidemiological characteristics. So did most of the 31 provincial health bureaus in their websites, with availability of column of "Disease Information" and "Disease Statistics" respectively. We used the built-in search engineer to find material from the National CDC website, with each of 27 NIDs as keyword, results ranging from 101 to 1000 items for 88.8% of the NIDs. Among 12 available websites out of the 19 professional institutes/centers under the National CDC, only one provided the function of mail list. We found highest visitor number to National CDC

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website, 4296/workday, 2106/weekend and fewer visitors to provincial CDC websites, 174-2674/workday, 88-2223/weekend. Also there websites published news irregularly.

Discussions and Conclusions:　The increasing rate around 20% both for internet individual users and PCs surely provide great potential for China to advance public health through the rapid adoption of popular information technology. Surely reporting disease through web-based information system is the data collection activity in the most popular way nowadays. But when we put that into practice, much should be think about the complexity.

There may be harmonizing issues among DRSs and with information systems in other sectors to cause burden of data duplication as the duration of setting up plan to develop DRS and the use of the first DRS was only half a year. Some principles should be followed to decide data setting. Through we can own most of the information found in the column "Epidemics Information" of MOH website to the wide adoption of DRS, we can not find detailed epidemiological characteristics in NIDR and no other open sources for supplement. The data quality from DRS is suspected as the coverage was not 100% yet and the unreported rate was over 20%. Another problem is that the huge number of private sector（clinics）had not been integrated.

Although most of the provincial health bureau now regularly announce NIDR in their websites, the fixed column is not high: 37.9% for "Disease Information" and 65.6% for "Disease Statistics" to reflect that those information was not valued much for decision-making. It is not easy to find material for disease surveillance in National CDC websites with search engineer. The fact that less than half of the accessible provincial CDC websites provided internet mail service reflects that e-mail had not become popular tools for information exchange among CDCs. The lower visitor number both on weekday and weekend show that National CDC and provincial CDC websites had not become the main knowledge source for human resource development among CDCs or for the goal of health education to communities.

The study suggested conducting continuous and systematic evaluation of DRSs and improvement, setting up mechanism to increase coverage and reduce unreported rate, integrating the private sector into the disease reporting system gradually, adding more detailed epidemic statistics to NIDR, setting up unified requirement for websites construction of provincial CDCs and PBHs, constructing the national CDC website as the main knowledge source for CDCs personnel development and education to the public, and E-mail and mail list should be used more popularly to exchange information among CDCs.

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Situation Analysis of Emergency Obstetric Care in the Central Hospital of Balkh Province, Afghanistan

Hamida ALAM

Introduction:　Pregnancy and childbirth are special events in women's lives. This can be a time of great hope and happiness but can be a time of fear, suffering and death. In Afghanistan the risk of death from the complication of pregnancy and childbirth is very high, however, almost 70% of these complications are preventable through access of Essential Obstetric Care. Balkh hospital is a regional hospital located in center of Balkh, Mazar-I-Sharif City. An average of 1,100 Maternal deaths occur in the Northern region annually mostly due to lack of access for women to health care services and properly qualified medical staff. As part of the National program by the Ministry of Public Health supported by UNICEF in 2003 and 2004, the EmOC center of Excellence was established. It was expected to handle more than 3.700 cases of complicated pregnancies yearly, and provide training programs for staff in the Northern Region. This study aimed to 1. Asses the access quality of EmOC in Balkh Province, 2. Identify seasonal / geographic causes in access of EmOC center in Balkh and 3. Identify the background of women delivering in Mazar-I-Sharif EmOC.

Methods:　Hospital based quantitive study (descriptive Cross sectional study). Due to situation difficulties, community based data collection and conducting interview, was not available. Data selected of delivery cases from the medical records of Mazar-I-Sharif Hospital, from one summer month (June-July 2005) and one month of winter (Dec-Jan 2006). Data was then copied to a formatted recording form, which included socio demographic information of women, obstetric history, date of admission, diagnosis, complications, mother and baby's outcome. The total number of data was 484 delivery cases. The data were coded, entered, cleaned and, analyzed using Microsoft EXCEL.

Results:　Of the 484 subjects who came to Mazar–I-Sharif EmOC, most of them were from the age group of 20-29 yrs (57%) and the second from age group 30-39 yrs (31%). Almost all subjects were from the Mazar City (75.4%), 111 (22.9%) were from the district of Balkh province and 6 (1.2%) from remote districts or another northern province. Almost all of them were housewives (89.0%), but 24 (5.0%) of subjects were workers outside their homes. Most subjects who came to EmOC were primiparas (n=138, 28.5%) while 14% were parity 1 and 2. The majority of subjects were alive after delivery (99%), and most of their infants were live-births (92%), with the average birth weight of (2.9kg). 418 had normal deliveries while 66 of them underwent cesarean section. The most frequent indication for cesarean section were obstructed labor (67.4%) and hemorrhage (12%). Only 34 women admitted to the hospital because of complications such as complications of pregnancy (21%) and delivery (68%) and treated.

Discussion:　According to the results of this study, Mazar–I-Sharif EmOC center performed very well. This study demonstrated that almost all subjects delivered here were alive, with live-birth infants as well, which showed that women who reached this hospital had good outcomes. This study showed that most of the women who came to the EmOC were housewives from the city, which suggest that there were barriers to access the EmOC. In Afghanistan, the men in the family are mainly the decision makers, especially in rural and remote areas. Women still do not have the right to make a decision to visit a hospital, even if they know that their health condition requires a referral. This causes delays in getting adequate medical care, and

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possibly leading to maternal deaths. It also showed that the geographical/transportation problem affected people in seeking care as women in rural or remote areas had difficulties in reaching a health facility.

Conclusion and Recommendations:　The Balkh regional hospital provided a very good service for women who were able to reach the EmOC center to give birth or to be cured on time; however, most of the patients were from the city. The EmOC still needs to be strengthened and improved in order to be accessed by all women who need help in rural and remote areas by improving sustainable referral system among all health facilities in Balkh Province and northern provinces. The recommendations for improvement are:

1. Community mobilization using media, community and religious leaders, politicians, school teachers and other authorities of the area to educate people particularly women about the danger signs and complications in pregnancy and delivery.

2. Improve the status of women in society by investing in the education of women and girls.

3. Improve the referral and record keeping system based on global standards as well as train qualified staff (particularly in rural and remote areas).

4. Creation of mobile team in rural/remote areas to talk about the danger sign of pregnancy to encourage housewives in health seeking behavior.

5. Regular training and refresher courses to update the knowledge of staff.

6. Constructive/supportive supervision and monitoring to ensure quality of care.

7. Motivation of staff such as giving incentives and appraisals.

8. Further studies on human resource development issues in Balkh Province as well as all over Afghanistan is needed.

9. Monitor the perception and expectations of care providers of health facilities.

10. Monitor the satisfactions and expectations of people and women on the health facilities.

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Cross Sectional Study on Factors Associating Neonatal Tetanus Immunization Among Reproductive Aged Women in Kasur District of Punjab Province, Pakistan; Mothers' Perceived Belief on Neonatal Tetanus and Tetanus Toxoid Vaccination

Yumiko KASHIBA

Background:　Neonatal Tetanus (NT) is one of the leading causes of neonatal deaths in developing countries. In Pakistan, it is estimated that approximately 28,000 infants die per year due to NT. However, it can be prevented effectively by maternal immunization of tetanus toxoid (TT) and this intervention has been proved to be one of the most cost-effective measures to avert NT and associated deaths.

Objectives:　The focus of this study was to assess factors attributing to the acceptance of TT immunization, by analyzing perceptions of disease (Neonatal Tetanus), and perceived benefits and barriers of taking health action (TT vaccination), among married reproductive aged women of Kasur District of Punjab Province in Pakistan.

Methods and Materials:　This was a community-based cross-sectional study conducted during August and September 2006. The sample of 104 married women who lived in Kasur District and delivered a baby/babies within the last 36 months was randomly selected by employing a two-stage stratified cluster sampling and systematic sampling, in order to assess their tetanus toxoid vaccination status (action) and decision (for the next pregnancy) and their belief on Neonatal Tetanus (NT) and on TT vaccination along with other relevant information. The data were collected through interviews by using structured and semi-structured questionnaires. The Modified Health Belief Model, which was reformulated from the original Health Belief Model was employed as a conceptual framework to analyze mothers' perceptions on NT (susceptibility and severity) and on TT vaccination (benefits and barriers).

Results:　The results show that about 60% of the respondents received two or more doses of TT, which is higher than the national and provincial averages. The relationships between mothers' decision of taking TT vaccination for the next pregnancy and the factors of Health Belief on NT and Health Belief on TT vaccination were examined by multi linear regression analysis. It was found that the variables of Health Belief on TT vaccination had stronger association with the decision of the mothers, compared to Health Belief on NT. Overall, the analysis revealed that perceived benefits of TT vaccination were the strongest predictors of mothers' decision for taking TT vaccination (β=0.561, p=0.000). It was also found that the determination coefficient (R^2) for decision was 0.335, i.e. about 34% of the mothers' decision of taking TT vaccination were attributed to rational judgment based on their knowledge and information on NT and TT vaccination. Further, the determination coefficient (R^2) between the decision and the action was 0.428. It can be assumed that 43% of the variations in the mothers' action were influenced by the decision. However, from the analysis of the model, other influences which were not well defined in the model (facilitating and interfering factors) also seemed to contribute to mothers' decision and action of taking TT vaccination.

Conclusions:　The study concludes that the mothers' decision of taking TT vaccination was based on their

evaluation of Neonatal Tetanus（disease）and TT immunization（health action）in the Modified Health Belief Model. The analysis also illustrates that the variable representing perceptions of benefits of health action emerged as the most influential factor, followed by the factor representing perceived barriers of taking TT immunization. The association between the decision and the action was relatively low（$R^2=0.428$）; therefore, facilitating and interfering factors are suspected to have relatively significant influence on mothers' action of taking TT vaccination. In other words, it may suggest that mothers' action of taking TT vaccination were not solely based on rational judgment on disease and health action. Further research would be recommended to discuss and reach more insightful understanding of this issue.

Recommendations: The study indicates that perceived benefits of health action were most predictive of the mothers' decision and action of taking TT vaccination; it would, therefore, be effective to reinforce the message of positive health effects of TT vaccination among mothers and family members. It is also suggested to create enabling environments, where mothers are motivated and supported to take TT vaccination by family, neighbors and health workers etc. For this objective, community based interventions, which involve different stakeholders, may be advantageous to intensify education and awareness-building among household members such as husbands and mothers-in-law and community health workers on the benefits of TT immunization.

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What Keeps Pregnant Women from Antenatal Care Visits in Burkina-Faso ?
─ The Factors That Affect the Decision of Pregnant Women in Burkina-Faso to Attend Antenatal Care Regularly ─

Yuko Nakakubo

Keywords:　antenatal care, communication, privacy, adherence, midwife

Thesis Advisors:　Kenichiro Taneda , Nobuyuki Hyoi

Objectives:　The purpose of this study was to identify the factors why mothers do not visit antenatal care（ANC）four times through their evaluation of ANC services.

Design:　A cross-sectional descriptive study.

Settings:　Fada N'Gourma City in the eastern part of Burkina-Faso from 27th July to 27th August 2007.

Methods:　Total number of 210 women who delivered their last child within three years（from August 2003 to July 2006）were interviewed using a semi-structured questionnaire. Contents of the questionnaire were constructed with basic attributes, accessibility, economic situations, educational levels, parities, the number of ANC visits, reasons for incomplete ANC visits and the evaluation for antenatal consultation when they visited ANC. Questions for evaluation of ANC services were administered using scales one to five for its services such as communication, hospital management, care/technique of health providers, privacy and ANC fee. These variables were analyzed to study relationships between them and the number of ANC visits.

Results:　Frequent reasons for incomplete ANC visits among respondents visiting ANC less than three times were "Unnecessary"（n=14, 27.5%）and "Expensive ANC fee"（n=12, 23.5%）. The ANC service the most strongly related to one ANC visit was "Explanation for the result of examination on ANC"（Chi-squared test: P=0.04, Logistic regression test: OR=7.99, 95%CI 1.81-35.34）. ANC service the most strongly related to two ANC visits was "Consideration for privacy in ANC"（Chi-squared test:

P<0.025, OR=1.40, 95%CI 0.87-2.33）.

Conclusions:　It is important to enhance awareness of pregnant women about the meaning of ANC, since ANC visits were regarded as "Unnecessary". The awareness of pregnant women in Fada City should be enhanced by effective health education for them and the community in Fada in the future. And then, it was shown that the economic reason influenced to decision making to visit ANC continuously based on the result on "Expensive ANC fee". The issue on income is rather difficult for intervention at primary health facilities or district levels, however a further study is necessary to find out the affordable price options and willingness to pay, that may contribute to health policy planning at upper levels. In terms of evaluations of ANC services, the most influential factor for making decision to visit ANC for pregnant women with risk to drop out from second ANC visit was "Explanation about the result of examination". And the most influential factor for making decision to visit ANC for pregnant women with risk to drop out from third ANC visit was "Consideration for privacy". These evaluations probably influence pregnant women's adherence for continuous ANC visits. In order to improve ANC services, it is important to improve the communication style and to consider the privacy for pregnant women. It was suggested that providing ANC services which satisfy pregnant women could enhance their adherence, and then they would visit ANC more continuously.

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Factors Associated with Successful Malaria Infection Control among under Five (U5) Years Old Children in Pemba Island-Zanzibar Tanzania

Ali Omar ALI

Thesis Advisor: Tomoko KODAMA

Introduction: Malaria is one of preventable infectious diseases, which proliferates in condition where awareness is low and where the health care system is weak. Globally, malaria threatens the lives of 40% of the world's population-over 2,200million people and is estimated 300-500 million clinical cases, killing more than 1 million people annually, the majority of whom are young children. In the east Africa, it is also Malaria endemic in the offshore islands of Pemba and Unguja (i.e. Zanzibar), estimated 1 million population is at risk and the main vulnerable groups are pregnant women and children under five U5 years old. Zanzibar Malaria Control Programme (ZMCP) has taken three pillars in approaching to prevent and control Malaria based on effective and low-cost interventions, such as (i) prompt access to affective anti-malaria treatment, (ii) prevention and control of malaria in pregnant women (iii) use of insecticide-treated nets and others methods of vector control. The main aim of the study is to provide information for planning, implementation and evaluation of community-based Malaria infection prevention under five years old children. The specific objectives are: i) to examine parent's knowledge and attitude for Malaria infection to their children, ii) to examine parent's treatment seeking behavior to the health centers while their children having fever or suspected malaria, iii) assess mother's/caretaker's knowledge, perception and capability of using Insecticide-Treated Mosquito Nets(ITNs) in Pemba island-Zanzibar, Tanzania.

Methods: A cross sectional study was conducted in Pemba Island, in the north-east of Tanzania. The study subjects were 223 mothers and caretakers of children under five years old, who were admitted, visited out-patient and pediatric clinic at Wete and Chake Chake hospitals from September to October 2006. Semi-structured questionnaire was used to interview mothers/caretakers by trained staff (one doctor, three nurses) on their knowledge and attitude to treatment seeking behavior for their children having fever or suspected Malaria, including the use of ITNs. Chi-square test and Mann Whitney test were applied to examine statistical significance in data analysis.

Results: A total of 223 mothers/caretakers were participated to the study with consent for the research purpose (104 and 119 respondents from Wete and Chake Chake hospitals, respectively). With regard to parent's knowledge and attitude, 98.2% of mothers/caretakers had mosquito bednets in their houses and 91.5% had knowledge that using ITNs for the children while they sleep is the best way to prevent Malaria infection. The percentage of children slept under mosquito bednets a night before attended to the hospital (96%), and children with ITNs (84.5%) showed significant improvement in comparison to the survey performed by the Zanzibar Malaria Control Programme in 2005 (p<0.05, p<0.01, respectively).

The action taken by mothers/caretakers in relation to the education level showed that mothers/caretakers with Secondary/College education had positive decision making towards treatment seeking (p<0.01) and the family with monthly income >\$50 showed quick decision to treatment seeking (p<0.01) to a hospital or health center. Information sources on how to treat bed nets were from TV/radio (40%), hospital/clinics (30%), relatives/friends and community local leader (10%), newspapers/Information,

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Education and Communication（6%）.

Discussion and Concluson: Malaria infection control has improved and positive achievement has been seen in recent years in Tanzania. The findings of this study proved that prevention knowledge and attitude among individuals and families (i.e. community) have improved and also the use of insecticide-treated nets in Pemba-Island, Zanzibar. Treatment seeking behavior must have been improved due to enhanced availability and affordability of costly effective anti-malaria treatment, Artemesinin-based combination therapy（ACT）, which has taken the place of Chloroquine failure, even for those families with low monthly household income（<$50）by funding from different donors and partners. Limitation of this study is the data was collected at hospital/clinics, then community-wide survey will be required in the future. Successful Malaria control policy for under 5 years old children therefore, should administer with communication strategies within the community level, through different media. The use of influential persons (e.g. community local government leader i.e. Sheha) should be more taken into consideration especially in those areas where TV/Radio, newspapers are not common in order to promote behavioral change among mothers/caretakers. Country's efforts and commitment together with donors' financial supports and technical assistance would make these achievements possible.

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Factors Contributing to the High Tuberculosis（TB）Default Rate in New Juaben Municipality in Eastern Region of Ghana

Samuel Agyemang Boateng

Keywords: Tuberculosis（TB）, Directly Observed Treatment（DOT）, Defaulter Rate, Focus Group Discussions（FGD）, District Health Management Team（DHMT）, Information Education and Communication（IEC）.

Thesis Advisors: Tomoko Tachibana, Nobuyuki Hyoi

Introduction: Tuberculosis still remains the single most infectious disease with the highest burden（Mortality and Morbidity）of the adult population world wide. With the advent of HIV, the incidence of Tuberculosis has steadily increased.

In order to ensure compliance the Directly Observed Treatment, short course（DOT）has become operationalised in many parts of the country including New Juaben Municipality in the Eastern Region of Ghana. Alongside, the Anti-Tuberculosis drugs are free and sputum examinations are also free. Despite all these variables, the full compliance to the Tuberculosis regimen has become a major obstacle in many health settings.

In New Juaben Municipality, the Tuberculosis defaulter rate was 40 %（2004）. It has therefore become prudent and necessary to elicit the factors that contribute to the high defaulter rate in the Municipality and to marshal the necessary resources for intervention.

Objectives: To determine patients related factors leading to defaulting, to determine services related factors leading to defaulting and to identify the knowledge, attitude and perceptions regarding TB in the Municipality.

Methods/ Design: The study design employed here was a descriptive study on defaulters. This was a quantitative as well as qualitative study. The measuring instruments were questionnaires, in-depth interviews and focus group discussions（FGD）were done to support findings from the study. Patients who defaulted during the course of treatment were compared with non-defaulters who started and completed their TB treatment at the same time.

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Result: In all, 140 patients were administered with the questionnaire who registered for the DOTs（2003-2005）. Among them 78（55.7%）were defaulters while 62（44.3%）were non-defaulters. From the analysis of responses, the odds ratio and P values were evaluated based on the measures of association and statistical significances. Default from treatment was significantly associated with male sex（odds ratio 4.73）, distance of patient from the treatment centre（odds ratio 6.14）, financial status（odds ratio 4.14）, family support（odds ratio3.43）, attitudes of service providers（odds ratio 2.72）, educational level of patients, knowledge about TB, stigmatization, availability of treatment, adverse effect of drugs（odds ratio 3.003）and duration of treatment.

Conclusion and Reccomendations: It can be deduced that the highest contributing factors to default are long distances from home to treatment centre, lack of finance, poor family support, poor attitude of staff, and lack of knowledge of TB. There is the need for the District Health Management Team（DHMT）to undertake major Information, Education and Communication（IEC）campaigns in order to reduce the myths and misconceptions about TB in the communities. The need for program managers to emphasis on inter-personal communication since the educational level of most people in the district is low. Treatment should be decentralized to the community level and families of TB patients must be encouraged to fully support TB patients. There is the need for in-service training for staff annually and effective counseling of TB patients must be intensified. To enhance regular supply of anti-TB drugs in the district, communication between the district and regional level must be encouraged.

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An Assessment of Knowledge, Attitude and Practice of the Caregivers About Malaria to Improve Care Support of Under Five Children in Three Selected Villages of Champasak Province in Lao. PDR

Bouala PHOMMACHACK

Keywords:　Knowledge, Attitude, Practice（Preventive behavior）, Caregivers, under five children, Malaria.

Thesis Advisors:　Hiromitsu OGATA , Nobuyoshi WATAHIKI

Introduction:　The Lao PDR has a malaria burden that is possibly severer than that of any other country in Asia. Malaria is the most common cause of death in Laos, and the proportion of malaria mortality is high in under five children compared with other age groups in southern provinces.

Even though the nationwide incidence of malaria had clearly declined from 2000 to 2005, malaria is still the first major cause of death, especially in under five children with a high morbidity rate of 1.52/1000 and a mortality rate of 0.52/100,000 nationwide in 2005.

Objective:　This study aimed to examine the knowledge, attitude and preventive behavior of the caregivers about malaria to improve support of caregivers in under five children and contribute to strengthening current malaria control program.

Design:　The study employed the cross-sectional design.

Materials and Methods:　The study was conducted from 10th -12th August, 2006 in three selected villages in Batiengchareunsouk district namely: Meung village, Thongsala village and Nonhsaat village. Data were gathered through an interview by using a questionnaire. The questionnaire consisted of four parts. There were general characteristics of the caregivers, knowledge on malaria, attitude on malaria including past history of malaria in under five children and practice on malaria. One hundred and twenty caregivers who have under five children were the respondents. Chi-square test and Logistic Regression model were employed to evaluate the association between characteristics, knowledge, attitude and preventive behavior of caregivers about malaria and occurrence of malaria infection in under five children using Epi-Info ver.3.3.2.

Results:　Of the 120 caregivers surveyed, 54.2% were aged at 20-30 and 45.8% were aged at 31-40. Malaria in the under five children occurred in the household of caregivers who aged at 20-30 more than those who aged at 31-40（23.1% vs 7.3%）in 2005 and（12.3% vs 9.1%）for the first 6 months in 2006 respectively. With regard to the overall knowledge on malaria of the caregivers "good/high" was 4.2%, whereas "needed improvement" was（95.8%）. In more detailed about needed improvement, knowledge on prevention was 95.0%, knowledge on symptom was 84.2% and knowledge on vector and transmission was 78.3%. All respondents had good/high of attitude about malaria. About 47% of the caregivers had good/high on preventive behavior against malaria but needed improvement was 53.3%. The occurrence of malaria was high（21.9%）among the respondents needed improvement on practice while that of the respondents had good/high practice was 8.9% in 2005. These figures in the first 6 months of 2006 were 17.2% and 3.6% respectively. Association between preventive behavior against malaria of the caregivers and occurrence of malaria in under five children was statistically significant in both these years（p=0.044 and p=0.015）. Regarding bed net use, malaria in under five children occurred in the household of caregivers who have not enough bed net more than those who have enough bed net（29.2% vs 12.5%）in 2005 and（25.0% vs 7.3%）for the first 6 months in 2006. Bed net use was highly associated with occurrence of malaria in under five children

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（p=0.051）in 2005 and also association with occurrence of malaria in under five children in 2006 was statistically significant（p=0.022）.

Discussion and Conclusion:　The overall knowledge on malaria of the caregivers was low. This means that it is required to improve knowledge on prevention, knowledge on symptoms and vector and transmission on malaria. More than half of the respondents were needed to improve preventive behavior on malaria and the malaria occurrence was strongly high among the respondents who needed improvement. On preventive behavior, bed net use affected to decrease occurrence of malaria in under five children. Therefore, we can conclude that preventive behavior against malaria is crucially important. In addition, knowledge and attitude is needed to ensure the quality of practice against malaria in the community. It is suggested that the strategy for strengthening current malaria control program should be focused on change of health behavior about malaria through community health education.

〈教育報告〉

平成18年度専門課程Ⅰ
国際保健分野

Attitudes of Upper Elementary School Teachers Towards Provision of Sexual Health Education to Fifth and Sixth Grade Students in Fukushima, Japan

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Introduction:　Sexual health education (SHEd) is a contentious issue for elementary schools, especially where cultural and religious taboos are strongly practiced. Especially with increasing numbers of teenage pregnancies and abortions, SHEd for elementary schools needs improvement. Children need to know correct and useful information about sexual health to be able to make informed decisions about their sexual health and well being now and in the future. In today's "secretless" society, children have access to sexual information from many sources, not all of which are reliable. Although parents are the first sexual health educators for children, not all parents are comfortable with providing this education so the type of SHEd the children receive from parents may be quite varied. Schools are venues of accurate information dissemination from teachers, whom children trust and respect. Thus, elementary school teachers must be able to dispense SHEd gently and professionally. This study aims to find out elementary school teachers' views and ways to assist them to provide SHEd.

Methods:　This was an observational school-based cross-sectional survey of elementary school teachers teaching grade five or six. Out of 540 elementary schools under Fukushima Educational Committee, 116 were randomly selected. Structured questionnaire, i) Demographic factors, ii) Perceived need for SHEd, iii) Current teaching practice, iv) Perceived difficulties in providing SHEd, v) Need for further development of SHEd curriculum or activities, vi)

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Perceived supporters or needed stakeholders, was created based on previous study on SHEd for the junior high school teachers in Japan. Response rate was 96% (214) and the data was statistically analyzed using EPIINFO 3.2.2. Fukushima Education Department granted permission for this study.

Results:　The respondents were 101 males and 111 females, the mean age was 40.9 years old and female respondents were older than the males (p<0.0001). The total number of teaching experience was from 1 to 33 years (Mean±SD, 17 ± 7.5yrs). Overall, 95% of respondents had previously conducted SHEd and 80% of them feel comfortable with it. According to teaching experience, only 83% among respondents with 1-5 years of teaching experience for grade 5 or 6 provided SHEd. The frequent topics included physical and emotional changes of adolescence (85-87%) and less frequent topics were such as sexually transmitted infections (STI) and human immunodeficiency virus/ acquired immunodeficiency syndrome (HIV/AIDS) (58%), unexpected pregnancy and contraception (7%), and information on sex crimes against children (6%).

With regard to Life (conception and birth) was not taught significantly among male respondents (p=0.008, Fisher test). Female respondents used more self-developed teaching materials (p<0.05), taught more about gender differences of reproductive organs (p<0.005), menstruation (p<0.01), birth, growth and development (p<0.005) and psychology of adolescence (p<0.01). Male respondents have more difficulties with teaching SHEd (p<0.05).

Appropriateness to teach SHEd in elementary schools

was admitted by 92% for following reasons; 'necessary to give correct information earlier to children（63%）', 'there was an overflow of sexual information in society（58%）' and 'students were already showing interests in this subject （46%）'. The factors affecting effective teaching were lack of appropriate materials（56%）, contents（43%）, and standardised teaching curriculum. It was found that the respondents felt they had inadequate knowledge about SHEd（28%）, and they requested 'preparation of appropriate teaching materials'（82%）, 'more exchange of opinions between parents and teachers'（55%）, 'training course for teachers'（51%）,' comprehensive program from elementary to high school'（48%）, and 'networks with society（police, medicals, etc)'（45%）. Respondents needed development of SHEd by the class-based teachers （90%）, assisted by school nurses（89%）, and parents （86%）.

　Regarding sexual crimes against children, the topic considered to be included was 'child sexual abuse and measures to avoid it'（39%）. Likely opponents of SHEd for respondents showed parents（26%）, and Board of Education（8%）, and public health nurses（6%）. It was indicated that the most important value of respondents about future appropriate SHEd was 'give a path to children to value according to the morality of sex'（49%）, 'Give practical instruction based on actual situation'（34%）, and 'give instruction emphasizing the difference of psychology and behaviour'（17%）. Finally, possible strategies to get support from parents who refuse SHEd revealed as 'conduct regular parent-teacher meeting'（62%）, and 'giving notices/newsletters of SHEd in advance'（62%）.

Discussion and Conclusion:　The study shows that the majority of respondents think SHEd is needed in elementary schools and are eager to teach it. A comprehensive SHEd curriculum needs to be developed and taught specifically in either Health Education or Science class at school using adequate and improved teaching materials, should be started in earlier with aspects of moral and ethics, then continue to teach in later grades with information of sexual health. New topics to be added to the curriculum need consensus of parents, teachers and other educators.Teachers need in-service training on participatory approaches and methods to better teach SHEd. Continuing regular follow up assessment of all teachers is required regularly by SHEd experts with feedback to teachers. Especially, male and new graduate teachers need extra assistance initially.

　Organisations related family planning, health and welfare, children's rights should be involved to provide assistance, actual situational reports/information for improving SHEd quality.

　Appropriate sexual health information is necessary for children to assist them in decision-making in the future. Further studies are expected to indicate any changes in the attitudes of teachers and the tendency of teenage pregnancies, abortions and sexual health related problems will be good indicators of commencing SHEd.

〈教育報告〉

平成18年度専門課程Ⅰ
国際保健分野

Motivation and Sustainability of Care Facilitators Engaged in Community Home-based HIV/AIDS Programme in Masvingo Province, Zimbabwe

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Thesis Advisor: Tomoko KODAMA

Background: Community health care with lay health worker was initiated in 1970's in low and middle income countries stimulated by the Alma-Ata declaration. It became more important in the 1990's due to HIV/AIDS epidemic and shortage of health professionals in Sub-Sahara Africa. Although Community Health Workers（CHWs）play a vital role to conduct Community Home-based Care（CHBC）programme, their sustainability is currently facing serious problems. Zimbabwe Red Cross Society（ZRCS）started their own original Community Home-Based HIV/AIDS programme with volunteers in 1992, which has been a long-running programme, however, high prevalence of HIV/AIDS in these areas threats its continuity with increasing need and shortage of the staff. The aim of this study is to investigate motivation and sustainability of Care Facilitators（CFs）engaged in Community Home-based HIV/AIDS programme conducted by ZRCS in order to provide sustainable quality programme.

Objective: The aim of this study was to understand factors influencing motivation and sustainability of Care Facilitators engaged in Community Home based HIV/AIDS programme in Masvingo Province, Zimbabwe.

Methods: Cross-sectional study was conducted among 166 CFs engaged in Community Home-based HIV/AIDS programme under ZRCS Masvingo provincial office, by using self-administered questionnaire accompanied by trained staff for the survey. The questionnaire was created by author, based on the conceptual framework in previous studies by Franco LM（2004）and Reeder GD（2001），

classified as; i) socio demographic factors, ii) initial motivation to become CF, iii) perception of contextual factors（work environment, communities/family perception, etc），iv）motivational outcome, and v）self-assessed performance. The variables of iii），iv），and v）were scored 1 to 5（1:Extremely poor, 2 Poor, 3 uncertain, 4:satisfied, 5: fully satisfied）by CFs. Data was statistically analyzed by using Person's chi square, t-test and regression analysis to examine the associations with i），ii），iii）as dependent variables and iv）& v）as explanatory variables.

Results: The response rate was 71.7%（male 15, female 104）and the mean age（± SD）were 39.2（±9.3）in male and 41.3（± 9.6）in female（Min: 22, Max: 62）. The average years of work experience was 2.3（±2.0）years in male and 3.7（±2.1）years in female（Min :< 1 Max: 10）. Out of 104 female subjects, most frequent initial motivation to become CF was the desire for learning about HIV/AIDS（"Wanted to learn how to prevent HIV/AIDS"）. The sustainability was compared between the groups who has worked for more/less than 5 years and found "Being widow"（p=0.041），"Working in rural"（p=0.049），and "Started to work at older than 40 years of age"（p=0.013）were significantly different and initial motivation to become CF, "Felt close to People Living with HIV/AIDS（PLWHAs）" was significantly higher（p=0.025）in longer experienced group. Also, with regard to income, "having other financial source, but mainly relied on remuneration from ZRCS" was found significantly longer experience（5.4±2.8 years, p<0.05: t-test）than others. Motivational outcome was significantly influenced by bureaucratic process（p<0.001），clients satisfaction（p<0.01）and family understanding（p<0.001）and self-assessed performance was significantly influenced by community understanding

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（p<0.05）and achievement of expectation（p<0.001）. About male CFs, initial motivation was not significantly different from female, and the data was analyzed separately from that of female due to small numbers.

Discussion and conclusion:　The significant factors related with sustainability of CFs in this study suggested the marital state（female widows）, working in rural（vs urban）and the age of CFs started working（after 40 years old）. About initial motivation among CFs who worked longer （for more than 6 years）, 'intrinsic motivation' （e.g."felt close to PLWHAs", "wanted to raise self-esteem", etc）was stronger than 'extrinsic motivation' （e.g."expectation to remuneration, etc）. Economic background, such as remuneration with other source, was found to influence the sustainability. These findings suggest that motivation has been triggered initially by intrinsic factors, but sustainability afterward would be influenced by extrinsic motivation. Self-assessed performance was significantly related with "community understanding" in this study. This means more community-involved activities will be expected and most challenging issue in HIV/AIDS care with existing barrier of stigma in the community. The limitation of study was the representativenss of the data, based under ZRCS, one of specific international organizations, which means the CFs working in other organizations（NGO/NPO, etc）might have different motivation and values for remuneration.

〈教育報告〉

平成18年度専門課程Ⅰ
国際保健分野

Managerial Decision Making Process Among
Selected Secondary and Tertiary Level Hospitals in Mongolia

Nansalmaa BAZARRAGCHAA

Introduction: Health care management has been evolving rapidly to meet the public's increasing need for accessible, affordable, acceptable and quality health care. The current reform and restructuring of health care services in developing countries like Mongolia, is calling for innovative leadership and management. Every stage of this evolution and reform, decisions need to be made to continuously define and refine various policies and programs to make them more responsive to client needs. Decision-making is a critical function which is essentially the primary process for identifying a set of feasible alternatives, appraising an appropriate option, determining a timely and relevant course of action and deciding the allocation of resources.

Objectives: To identify and examine factors that influence managerial decision-making processes in various areas; To describe the impediments to making good quality decisions; to propose optimal ways to improve decision-making in a hospital setting in Mongolia.

Methods: A descriptive cross sectional study was conducted in 2006. The study participants were hospital managers (65), hospital staff (77) from secondary and tertiary hospitals in Ulaanbaatar city.

Results: Primary factors influencing decision-making were client perspectives (22.5%) and staff perspectives (19.3%). Implementation of the guidance and directives from the supervising organization was also an important factor for making decision. However most hospital managers did not pay sufficient attention to factors such as the feasibility of their decision (11.1%), the availability of information for making their decisions (4.9%), and the consequences and risks associated with their decisions (8.6%).

Some hospital workers (45.5%) participated in decision-making processes of the hospital through mainly meetings and providing relevant information to the decision makers. Staff said that there is a lack of supportive climate involving them in a decision-making process actively because the administrators ignored their ideas and comments and also no clear mechanism to involve them. Nevertheless, they were eager to participate in a decision-making process of their hospitals.

Hospital managers used legislative documents, Minister's order and MoH guidelines, reports, clinical guidelines, and health statistics in their decision-making to some extent. The hospital manager's personal experience was also the main basis for all areas of decision-making. Only 29.2% of hospital managers used research findings in their decision-making. The main reasons were due to scarcity of relevant information, often outdated information when available and poor dissemination of information.

Main obstacles faced by hospital managers were a lack of knowledge about the decision-making process; 49.2% of managers did not attend any training in health management and related management areas. Managers (mostly heads of departments) also said that pressure from a director is an obstacle to making good decisions. Other identified obstacles were workload, ethical issues and bureaucracy.

Conclusion and Recommendations: Decision-making in both secondary and tertiary hospitals appears not to be made for anticipating problems and issues based on consciously defined alternative solutions. Decision-making tends not to employ rational, participatory decision-making processes using available and relevant information.

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To improve decision-making in hospitals, there is a need to conduct practical trainings for hospital managers and to develop a user-friendly guideline and a checklist for assessing decision-making on a regular basis. Moreover, decision-making is influenced by various factors which ranged from personal preferences and attitudes to sectoral policies, structure and culture. Therefore, there is also a need to define a coherent model which is used for decision-making facilitation and evaluation. Further research is required to examine the factors influencing every step of decision-making processes and to find out the relationship among organizational culture, performance and decision-making in a health setting.