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New Networking System of Central Epidemiological Unit, NGOs and International Organization for Information Sharing of Infectious Disease

San San Aye

Firstly, let me explain which main problem concerning with the surveillance system of infectious diseases in Central Epidemiological Unit of Ministry of Health of Myanmar. The main problem is “Lack of complete information in due time” because of delayed reporting of communicable diseases due to lack of modernized technology for transferring information from one area to another area and to the upper level. Information of occurrence of diseases is gathered in central level by monthly reporting system. As you know, outbreak is very important to know urgently and action needed to be taken urgently. Sometime, even telephone system is not well enough in some part of the area.

The second reason for lack of complete information is due to incomplete reporting of infectious diseases. We have a Health Management Information System which is under our Department of Health Planning for the whole country. But this information system is covered only government sector right now. Private sector is growing especially in cities and we still lack of information from people attending in the private sector. These are problems in information sharing about infectious diseases in our country.

Why it is problem? Everybody is well known about the “Ice berg phenomenon”, which is very important in information gathering on Infectious diseases, according to the epidemiology of diseases.

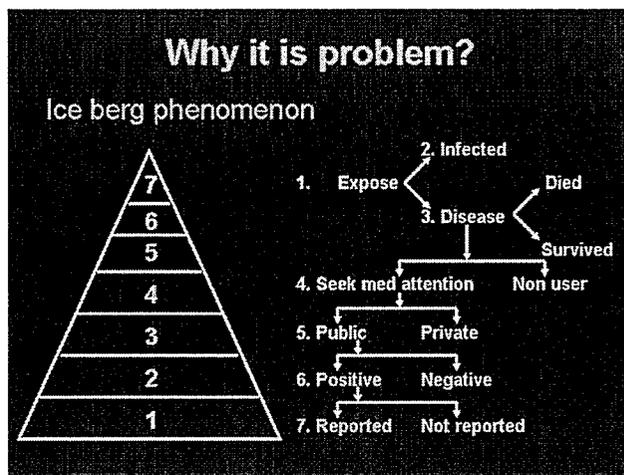
People are exposed to the agents and among which some of them are infected and some are getting diseases depending on the immunity. Among the diseased person some are died and some are survived (step 1 to 3).

Those diseased people some having seeking medical attention and some are non user (step 4).

Among the diseased people who seek medical attention, some are going to public sector and some are going to private sector. Those people who are going to private sector are not included in our Health Management Information System. This is the problem for sharing the complete information on infectious diseases. This problem is mainly occurring in urban area because the private sector is now starting to grow in urban area only. 30 % of the population is residing in urban area in Myanmar (step 5).

The other two steps are the confirmation of infectious diseases and reporting of those diseases (step 6 and 7).

These facts are very important for getting complete information on infectious diseases in due time.



Next, may I explain "How to solve this problem?" The New Networking System for Information Sharing of Infectious Diseases will be developed.

Central Epidemiology Unit (CEU) under the Ministry of Health is responsible for the surveillance and control of infectious diseases and it is also a center for information sharing.

Firstly, Government Hospitals and Health Departments under the Ministry of Health and other Ministries reported the cases promptly.

And at the same time, information is also getting from private hospitals and clinics, local NGO, INGO and general public.

And as soon as received the information from the peripheral level CEU response feed back to the lower level as early as possible. Urgent feed back is very important for controlling infectious diseases.

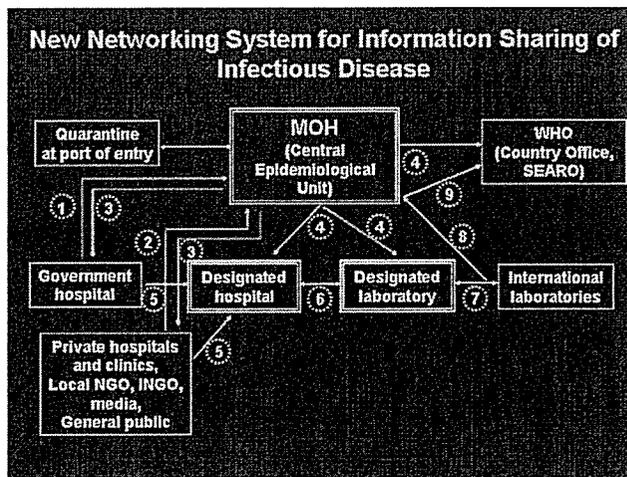
In specific condition of emerging diseases like SARS, the government arranged for designated hospitals and if required the specimen will be sent to designated laboratory. And at the same time reporting to WHO as well. (Pointing arrow 4)

According to feedback from CEU, the patient should be referred to designated hospitals as required.

If required, the disease will be confirmed by designated laboratory and International Laboratories.

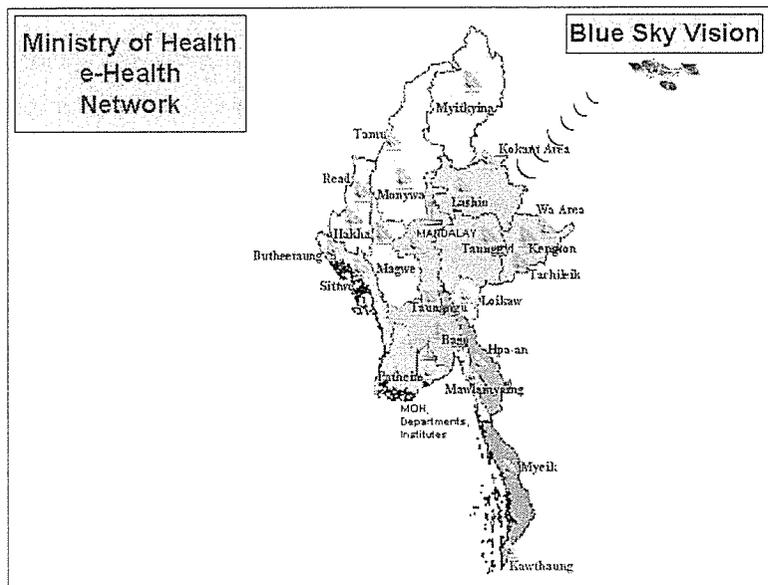
And then this information will be going to WHO through CEU.

This is the new networking system for information sharing of Infectious Diseases.



This new networking system of Information Sharing will be efficient by complete setting up of e-Health Network in the Ministry of Health. In current situation, 2 IP star were setting up one in Yangon (capital of Myanmar) and another in Mandalay (second big city). Computer networking (e-Health System) has been set up in 17 States and Divisions but it is not efficient right now, because of the insufficient power supply and other technological problems.

Regarding the “Blue Sky Vision”, if we have enough resources, try to set up e-Health Network not only in States and Divisional level but also to the township level (equivalent to district level in other countries). The total number of township in Myanmar is 325 townships. Quick and reliable information getting from the township is very important because our health system is based on Township Health System. If we have a chance to set up e-Health Network up to the township level, the reporting and feed back can be made in due time. This is very important for control of infectious diseases.



Let me explain on results of New Networking System. By proper construction of New Networking System for Information Sharing of Infectious Diseases:

- A good network of motivated people (GO, NGO, INGO, International Agencies)
- Very clear case definition and reporting mechanism
- Good feedback and rapid response which is very important for control of infectious diseases and
- Efficient Communication System will be achieved.

All of these results are very important not only for our own country but also for international level especially for emerging diseases.

Thank you for your kind attention. Arigatogosaimus!

★ ★ ★ ★ ★

Dr. Bolormaa Tumendembere (Mongolia): Is this epidemiological unit within the national health statistical unit or is it separated? And if it is separated, what kind of relation do they have with the statistical office? And the second question is: So what have you done to improve you said you have difficulty with data collection from private sector. So, what were your efforts to improve data collection from the private sector?

Dr. Aye: Our central epidemiological unit, which is under the ministry of health, is mainly in the department of health. In the department of health, we have a central epidemiological unit. The main concerns are for the surveillance and control of communicable diseases. We have already set up central epidemiological unit in the department of health. Right now our main problem is gathering information from various sources. We have a health management information system, HMIS. I think every country try to conduct an HMIS, health management information system. Right now, we only cover the public sector the government sector. The private sector, were not covered yet. We tried to promote collecting information from the private sector by our policy. We try to implement some rules and regulations for the private sector, and we try to get some information from them. That is our ambition.

Atty. Anabelle Cahello De Veyra (Philippines): In connection with the question regarding difficulty in getting data from the periphery. Let me share with you our experience in the Philippines. We also have our epidemiology and surveillance unit at the central office. And right now, it has been institutionalized in the different regional offices all over the country. And being a nurse before I was one of the pioneers in the

sentinel surveillance system, whereby we established sentinel nurses in different provinces. Remind you from the local government, we developed them to become part of our network. So in order to help in information – data that can be translated into information for action, we just focused our collection of data on 14 communicable diseases, which we believed were capable to make outbreaks. And each of these diseases was given a definition for everybody's use and for uniformity. Then later on, we only got cases from the hospital, because we believed cases from the hospital are just the tip of the iceberg and what we were after were those down under, who had no opportunity to go to the hospital. And these are the people and cases that can cause outbreaks. And so, with that in place, up to the moment, our provincial sentinel surveillance system has gone down to the municipal level and the Philippines has already able to detect outbreaks at the earliest possible time.

Dr. Aye: Thank you very much for your kind contribution. We have the diseases under national surveillance; we have 22 diseases under national surveillance. But right now, our problem is because of the iceberg phenomenon, we can collect only a very small proportion from the public sector, the patients who are attending the private sector and other places, we can not know about. That is the problem. Thank you for your comments, we learned a lot from you.

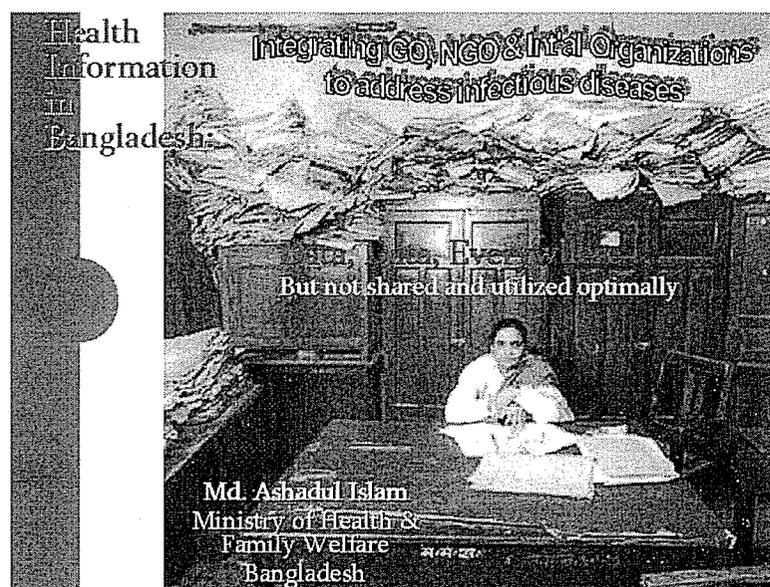
Health Information System in Bangladesh: Integrating GO, NGO & International Organizations to Address Infectious Diseases

Mr. Ashadul ISLAM

This is my honored privilege to present before you a new initiative of Bangladesh Health Sector. You might know that over the past decades, Bangladesh has made remarkable improvement in health indicators. It has attained significant success in reducing infant and maternal mortality, controlling some major communicable diseases, increasing life expectancy and immunization coverage. It has attained Polio-free status in the year 2000. However, it still faces multiple challenges; especially it now faces new challenges from rising incidences of infectious diseases.

On the other hand, Bangladesh has a very good health infrastructure throughout the country. The development efforts in health service are being supported by a number of international organizations and development partners. Besides, a number of NGOs are working in the health, population and nutrition sector which are a growing source of management innovation in our country. Setting the scene in that context, we may see what the health sector is going to do, especially in information management to address the incidence of infectious diseases.

In the picture represents the situation that we collect information in large scale, but we do not use it properly, because sometimes it is not useable or partly the quality is compromised.

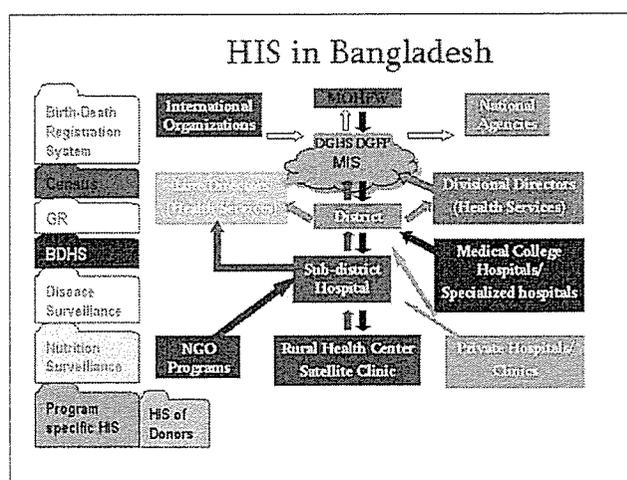


I would like to discuss about organizations involved in health information collection and processing. It is pertains organizations from government, non-government and international organizations. Bureau of Statistics is the central statistical office of the government, which is under the ministry of Planning. It has a Health and Demographic Division, which collect process and publish health information.

Ministry of Health has basically two wings- one is the Directorate of Health Services and another is the Directorate of Family Planning. Both wings have a large management information system. Besides, there are other offices which collect and process information on health and diseases, like National Nutrition Program; Institute of Epidemiology, Disease, Control & Research; Bangladesh Medical research Council, Institute of Public Health & Nutrition etc.

There are large NGOs and International Organizations which have large capacity and role in health information system. These are BRAC- the largest NGO, International Centre for Diarrhoeal Disease & Research Bangladesh, UNICEF, USAID, UNFPA & the World Bank.

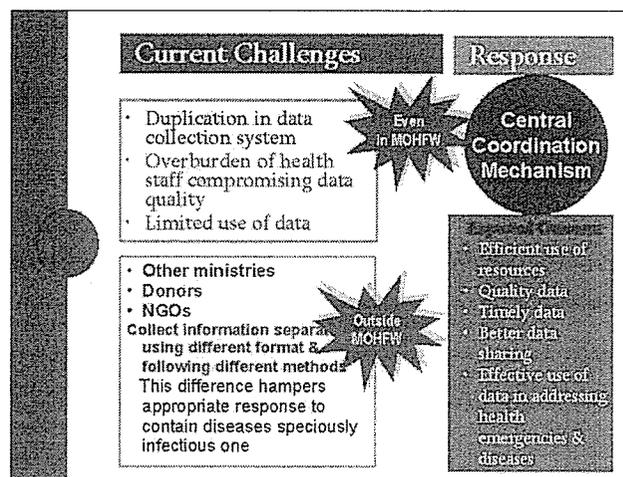
This slide tends to summarize the whole health information system in Bangladesh. In the middle are the levels, where information is collected in the government system. Starting from the Ministry, through Directorates, Districts, sub-districts and down to the rural health centers. The government health system sometimes fed by the information from NGOs, private hospitals and international organizations. But this process is not very coordinated and regular. On the left side, are the major outputs of the government information system.



Just to take further on the data – the features of the information. Information is mainly classified into two categories- routine and non-routine.

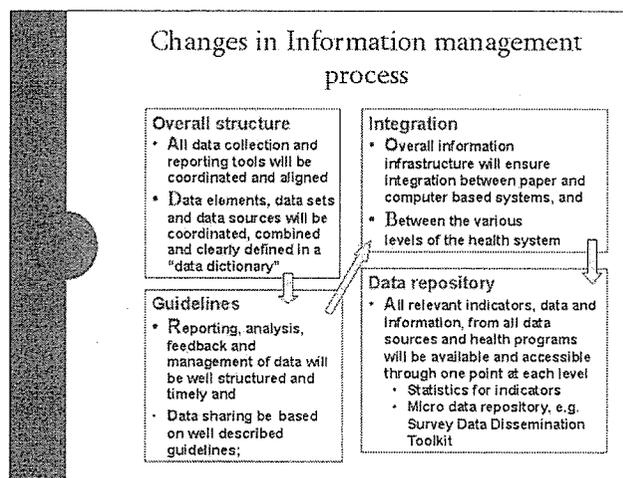
At the left two boxes, present problems are stated. Firstly, Within the Ministry, data collection is very often duplicated. The field staff very often get indent to collect same information many times in many formats. That makes them overburden and de-motivated. Since different set of same data give different results, so it's use becomes very limited.

Down in the box is the problem with others, associated with health information. Other ministry, NGOs, International organizations are collecting and processing information using different formats and methods. That ultimately hampers quick and adequate response to certain infectious diseases. As we all know, health emergencies and out break of Infectious disease needs very rapid response.

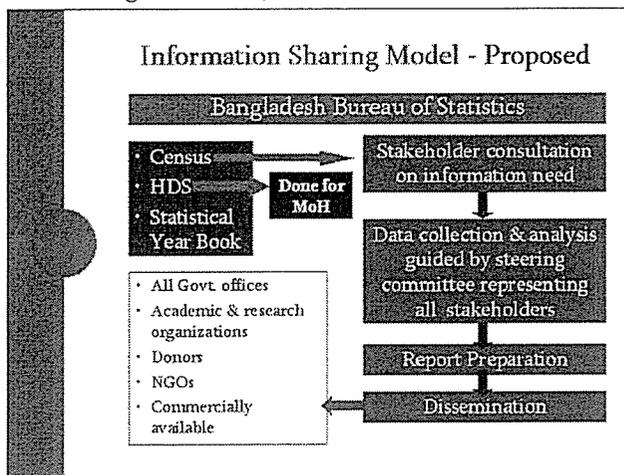


The new initiative is the central coordination mechanism.

The mechanism how all the initiatives in information collection and analysis will be coordinated.

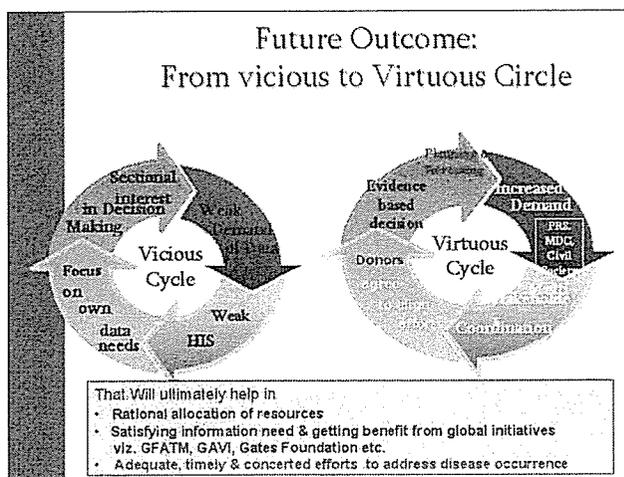


This is an example of the proposed model- how the data collection and processing will be shared. For example, when the Bureau of Statistics will collect data on health, disease and demography, it will consult the information need of the concerned stakeholders. Not only consulting on data requirement, the whole process of data collection and processing will be shared and guided by a steering committee of the stakeholders. Then it will be published and disseminated to relevant stakeholders – like government offices, academic and research organization, donors NGOs etc.



The ultimate goal of the coordination initiative – moving from vicious circle to a virtuous circle. The circle at the left represents the present situation which we may compare to a vicious circle. Weak Health information system leads to focus on own data needs of every small organizations that makes sectional interest in decision making, which creates weak demand of data. Ultimately fails to make appropriate response to health emergencies.

On the other hand, the integration mechanism will ensure multi-stakeholders coordination, development partner’s alignment with government system that will lead to evidence-based decision making and good planning and forecasting.



Ultimately, the health service will be benefited with rational allocation of resources according to the national priorities, it will also satisfy the development partners and global initiatives who are looking for reliable and quality information to support the health systems, and more importantly it will enable the authority to make rapid and adequate response to address to disease occurrence.

Thank you all for your kind attention.

Integrated Disease Surveillance System in India

Karumana Gounder Kolandaswamy

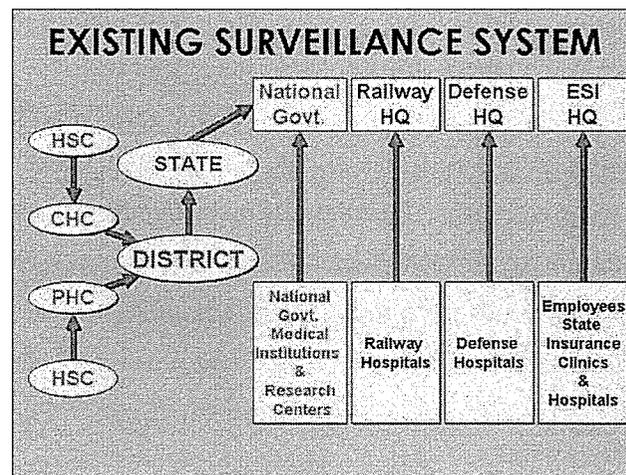
As you all know, India is the largest democratic country in the world with more than 1.1 billion people. We have made quite a lot of improvement in many sectors, but still we should improve a lot in many areas including internationally important disease surveillance systems. The disease surveillance system at present is incomplete because many of the emerging and re-emerging communicable diseases, non-communicable diseases, which are very important today in the changing scenario and the road traffic accidents, are not included. Then the data are not collected from the private sector, non-profit organizations and non-government organizations. The many programs we operate in a vertical manner. Malaria and leprosy program we have integrated. Because the programs are vertical, the sharing of information is difficult, because everyone wants to take only their information. But sometimes the data are reported from the hospitals. So, when we are compiling at the national level, sometimes duplication of data occurs.

Weakness of Current Surveillance System

The data collection, compilation, analysis and feedback are slow and sometimes it is very complicated. This is because, actually, it is very contradicting to note, as this morning, Naresh Goel was noting that tertiary health care was very developed and even people from developed countries are coming to India. Similarly, India is exporting world-class software throughout the world, not only the software but the human resource. A significant proportion of the world IT engineers are from India, but still it is very unfortunate we do our own job by manually. Still we do many jobs by manual processing. The use of different systems in every state – we have many states, in each state the system is different. Another important issue is as a result of all these things - the delay. The outbreak response, which is very critical, particularly in infectious diseases, the health policy formulation is often belated because of the delay in getting the information and often incomplete information. A large chunk of the information is local, not collected.

This is the pictorial representation of the existing system. The reports are collected from the Health Service Center to the village level, the Primary Health Centers and the Community Health Centers. The reports have reached the district, then go to the state and to the national government -the government of India. Then the national government itself directly runs several institutions and research centers throughout the country. Those reports are separately sent to the Ministry of Health. And Railway Hospitals, one of the world's largest railway networks, making huge profit. They have their own hospitals for their employees and the family. They have separate reporting systems. Then,

similarly the business hospitals spread across the country. The Employees State Insurance Clinics and Hospitals, the most successful insurance program and the only insurance program in the health sector in India. So, all of them have their own structure for transmitting the information. This clearly shows that there is a lot of scope for improving the coordination, sharing of the information and response mechanism within the government itself. And we also have to include the other organizations like NPOs, NGOs, and private sector.



Challenges for New Surveillance System

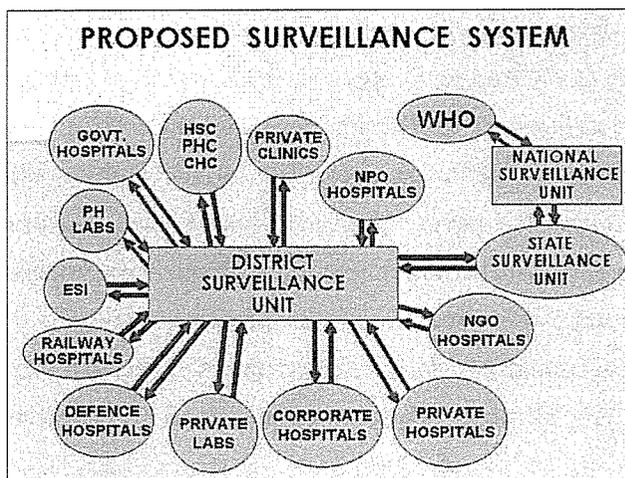
The health vision for the year 2010, it is under progress, to establish an Integrated Disease Surveillance System by the year 2010 for communicable diseases, non-communicable diseases and road traffic accidents by involving all the stakeholders, namely government medical institutions, public health establishment, NPOs, NGOs and other health-related departments to initiate timely local, state, national and international level public health actions and also to formulate effective public health policies with valid data to meet the changing needs.

Key components in the new system, which we proposed, main one are the establishment of surveillance unit and response unit at the district levels, state level and national level. The other one is computerization system to national informatics center network. This has already established 10 years ago through the satellite networking system. All the district headquarters are connected to the national headquarters through the satellite. The satellite system is offering the network facilities, so we have proposed to use the same system for the Health Information system. Then we have strengthened the Public Health Laboratories with modern equipments, training in latest techniques and other methodologies. Then we hope to build a public-private partnership, so that we can mutually – the government sector and private sector be benefited.

And another important key component in this proposed system is Rapid response of the investigation system at all levels, so that the infectious diseases can be dealt immediately. Then networking at all levels including the international information sharing. Although WHO and UNICEF are already doing this, but there is a scope for expanding the international organizations further. Then this proposal also

contains the training of personnel at all levels from the field level to the state headquarters, district headquarters and at every level. The effective policy formulation for health decision making so we can make policies based on valid data.

In this proposed surveillance system, the district will be the key unit. The district surveillance unit will collect reports from the NGO hospitals, private hospitals, corporate hospitals, the private laboratories, the defense hospitals, railway hospitals, ESI hospitals, then the public health laboratories, all governmental institutions, the field level institutions, like health sub-center, primary health center, community health center and also the private clinics, the NPO hospitals. In this system, we have also proposed the Indian system of medicine, like Ayurveda, Unani and Suda. Now the government of India is giving quite a lot of importance to the traditional medicine, which have been there in the country for more than thousands of years. Then this district unit will send the information to the state and also to the nation and also to the international organizations like WHO. We can also see there is an inbuilt mechanism not only for collecting the information. That is, we can electronically collect the information system to help in analysis feedback and also sharing of the information between one state, between government and private and different sectors.



We expect at least 4 outcomes in the new system. 1) Integrated Electronic System capable of collection, compilation, analysis, feedback and information sharing. 2) Complete and timely information, is the key to this. 3) Early detection and rapid response to outbreaks. 4) Effective policy formulation and health decision making. So that these are all the benefits that we have planned and I am sure that these projects are agreed and the World Bank and international agencies have come to our support. The government of India is doing in my state and certain other states.

Fighting SARS and other Emerging Infections Diseases; Controlling Epidemics

Flores Corazon Ignacio

As we look to the future during this conference, we look at it with concern and hope. Concern, for the newly-emerging infections which are on the move as never before, threatening the health of the people around the world and affecting travel and trade.

I would like to focus on the SARS experience in our country, how we were able to fight it and the other emerging problems. Some of these might not be new to you but I'm sure we can learn a lot from such occurrence.

SARS. Severe Acute Respiratory Syndrome is like a beast no weapon could wound, no vaccine or drug could protect or treat. Over 8,000 people were affected worldwide with 800 deaths. Worst hit were countries in the Asian region, including our country

In all, the Philippines had a tally of 14 SARS cases, of which 2 died (Adela and her father, Mauricio). The crisis lasted for 5 months, from March 15, 2003 to mid-July 2003.

The height of the crisis occurred in the Philippines when Adela Catalon, a Filipina balikbayan from Toronto, Canada came home asymptomatic upon entry to the Philippines. She later developed severe Pneumonia and died, becoming the first SARS death in the Philippines. Careful contact tracing covered 5 provinces where her travel took her. Some 250 contacts were identified and counseled about the possibility of SARS infection. Her hometown, Barangay Alcala, Pangasinan (northern part of the Phil.) was placed in quarantine for 14 days while residents were monitored daily for SARS symptoms.

THE PHILIPPINE SARS EXPERIENCE		
REPORTED SARS CASES IN THE COUNTRY March 17 to August 21, 2003 (N=93)		
SARS Suspects:	Hospital	Total number admitted
• Total Cumulative Admission: 93	RITM	33
• Total Discharged: 93	SLH	32
• SARS Cases: 14	Region 1	7
• SARS Deaths: 2	Region 2	4
• SARS Recovered/Cured: 12	Region 6	3
	Region 7	5
	Region 8	2
	Region 10	1
	NCR	2
	CAR	4
	TOTAL	93

The Philippines defended against the SARS contagion by choking its route of spread through effective epidemiological surveillance, contact tracing, quarantine of suspects and isolation of cases. It was a massive organizational effort facilitated by EO 201 designating Health Secretary as the Crisis Manager.

Through this, the Department of Health effectively mobilized a vast array of forces to fight SARS contagion.

These included:

- a) The network of epidemiological surveillance units in the regions, provinces, cities and municipalities.

The Dept. of Health has a training program for health workers called Field Epidemiology Training Program. Hence we have a vast array of field epidemiologists, strategically working in different Regional DOH offices, cities and provinces. They were responsible for the surveillance system of every notifiable infectious diseases, especially SARS.

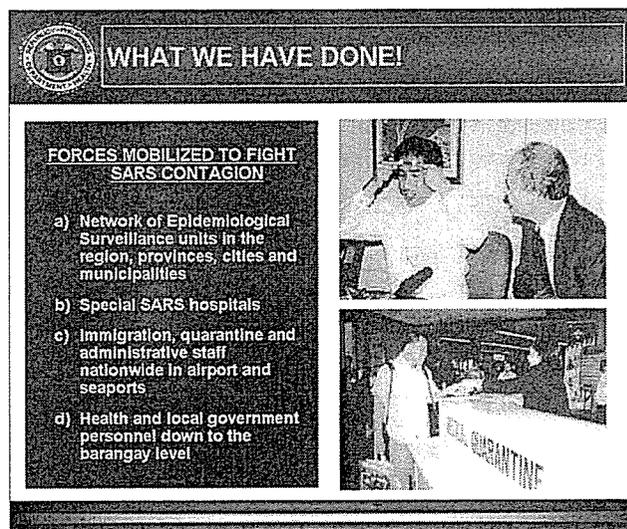
- b) Special SARS hospital including the RITM, San Lazaro Hospital, Lung Center, DOH Regional Hospitals, selected private hospitals e.g. Makati Medical Center

- c) Immigration, quarantine and administrative staff nationwide in airports and seaports.

You can see in the picture is our former Health Secretary (Minister) is putting the temperature patch in his forehead. This is what we used for taking the temperature for those who enter our country. With him is Dr. Olive, WHO representative in the Phil.

These included:

- d) Health and local government personnel down to the barangay level.

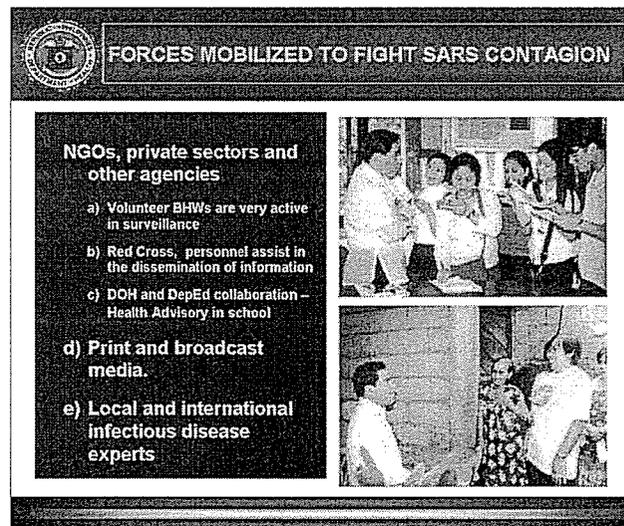


NGO, private sectors and other agencies, composed of Volunteer BHWs or Barangay Health Workers. BHWs are our village volunteer health workers, who help our public health units in tracing contacts during the SARS phenomenon. They helped us through following up every new individual who enters the community, especially those who came from abroad and are asymptomatic upon entry.

They were of great helped to us, because they knew everyone in the community. In the picture, is our Health Leader talking to community barangay health workers.

The Red Cross personnel also helped us through the dissemination of information. There was also a tie-up between the Department of Health and Dept. of Education to disseminate information in school, so that any children who are affected will be immediately reported.

- e) Print and broadcast media was really of great use. In the picture. You can see our Health Secretary talking to media personnel.
- f) Local and international disease experts. It is important to be kept abreast with international experts from WHO, CDC and other health workers in other country so we collaborate with them.



The strategy that was used against SARS rested on 5 pillars:

1. Minimizing the entry of imported cases through monitoring and screening of passengers in seaports and airports.
2. Averting local transmission of cases through contact tracing, quarantine of suspects and isolation of cases.
3. Preventing SARS deaths by supportive treatment in hospitals.
4. Dissemination of public information and health advisories to control fear and panic.

5. Mitigating the non-health consequences of SARS (a task shared with other agencies like the Department of Tourism and the private sector e.g. Filipino-Chinese Chamber of Commerce).

Results

Among the 30 countries that was infected by SARS, our country belong to those who have the lowest number of cases SARS caused an estimated \$59 B lost in business revenues in ASIA, broken down in table as follows. The Philippine has a minimal lost of 0.6B Minimal expenses were used. The president allocated 1 billion pesos from Phil. Charity Sweepstakes Office, but only one million was used for hospital facilities, PPEs, training of health personnel. The Social Weather Station (SWS) gave the DOH A 58+ net approval rating for its efforts against SARS.

At the end of the crisis, the DOH has strengthened its infection control infrastructure nationwide, to include systems for epidemic alert, international quarantine, and hospital management.

RESULTS		
	COUNTRY	LOST REVENUES (in billions of \$)
<ul style="list-style-type: none"> • Lowest number of cases amongst 30 countries • Minimized the lost revenues • Only Minimal budget was used (\$5 M) • DOH got a 58+ net approval ratings as per SWS survey, as well as the President • WHO declared Philippine is - SARS Free 	China	18.0
	Hong Kong	12.0
	S. Korea	8
	Taiwan	6.1
	Thailand	4.6
	Malaysia	4.5
	Indonesia	1.9
	Philippines	0.6
	Vietnam	0.4

But other Emerging Infections and re-emerging problems will continue to plague such. Avian flu, meningococemia

Meningococcal disease

From 1 Oct. 2004 to 28 Jan. 2005, a total of 98 cases (74 from Baguio City, 22 from MT. Province and 2 from Ifugao) of meningococcal disease and 32 deaths (case fatality ratio, 33%) has been reported. Out of the 78 cases, initially reported on 19 Jan 2005, 11 have been confirmed positive for *N. meningitidis*.

Current measures include case management of suspected cases, active surveillance and

chemoprophylaxis of close contacts as well as vaccination of health workers. WHO, with the assistance of partners in the Global Outbreak Alert and Response Network (GOARN) is supporting the Department of Health in strengthening epidemiological surveillance, increasing laboratory capacity for detection /confirmation of meningococcal disease.

Avian Flu

I'm very happy to inform you, that contrary to the interim report last July 2005, for the alleged presence of AI virus among chicken in a poultry farm in Bulacan, confirmatory test done by the Australian Animal Health Reference Laboratory for AI, revealed that we are negative for Highly Pathogenic AI and may resume export of chicken.

But, to defend against avian flu, which has so far already affected the neighboring Asian countries, the President issued EO 280, activating a crisis management system similar to the SARS system. The Dept. of Agriculture also banned the importation of poultry from countries affected by the H5n1 virus.

NEW EMERGING/ RE-EMERGING PROBLEMS:

- Baguio City (Oct 04 ~Jan 05)
- 98 CASES/ 32 DEATHS
- CFR = 33%

Water-borne Cholera

- In Tondo (2003)
- Due to contaminated water pipe

CAMPAIGN EFFORTS WILL ALL BE PATTERNED WITH SARS CRISIS MANAGEMENT!!!

Map Callouts:

- CA MENINGOCOCCEMIA**
98 Cases /32 deaths
Oct 04-Jan 05
- CHOLERA '03**

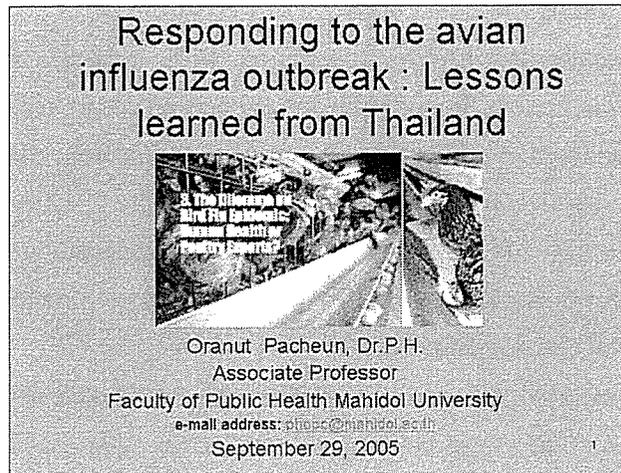
Geographic Labels: I, II, III, NCR, IV-B, VI, VII, VIII, XII, XI, ARMM

In this entire problem, our president stated that the government and private sector will work together to prevent entry of possible infection from poultry.

Thank you very much for listening! Mabuhay!

Responding to the Avian Influenza Outbreak : Lessons Learned from Thailand

Oranut Pacheun



At the end of 2003, there were news reports that chickens in coops in a province of Thailand were dying of a strange illness. The Ministry of Public Health announces that the deaths were not caused by avian influenza (AI), but from the change in climate during the end of rainy season to early winter. The deaths of 100,000 birds in the same province were blamed on chicken cholera. In January 2004, The Bureau of Epidemiology announced that three people were ill suspected cases of AI. The Ministry of Agriculture and Agriculture Cooperative found H5N1 in a chicken farm. The government accepted that there was avian influenza in Thailand and ordered the slaughter of 13.9 million chickens on 3,459 farms.

As of 22 September, 2005, twelve Thais died from the illness. There is no new confirmed case.

