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## ANNEXES

- Annex I: Country Files
- Annex II: Sources
- Annex III: Questionnaire
- Annex IV: Guideline for Telephone Interviews
- Annex V: Additional (Quantitative) Questionnaire
Abbreviations

ADB: Asian Development Bank
ADPC: Asia Disaster Preparedness Centre
AED: Academy for Educational Development
AIDS: Acquired Immune Deficiency Syndrome
AMREF: African Medical and Research Foundation
APSED: Asia Pacific Strategy for Emerging Diseases
AusAid: Australian overseas Aid Program
BMZ: Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung / Federal Ministry for Economic Development and Cooperation, Berlin and Bonn
CBAIC: Community Based Avian Influenza Control
CDC: Centre for Disease Control and Prevention, Atlanta, USA
CDPRG: Communicable Disease Policy Research Group
CHUK: University Central Hospital of Kigali, Rwanda
CIS: Commonwealth of Independent States
ECDC: European Centre of Disease Prevention and Control
ECPP: Epidemic Control Preparedness Program, Bangladesh
EU: European Union
GAR: Global Alert and Response
GFA: GFA Consulting Group, Hamburg
GIP: Global Influenza Programme
GoB: Government of Bangladesh
GTZ: Deutsche Gesellschaft für Technische Zusammenarbeit GmbH, Eschborn
H2P: Humanitarian Pandemic Preparedness Initiative
HIV: Human Immune deficiency Virus
HR: Human Resources
ICDDR,B: International Centre for Diarrhoeal Disease Research, Bangladesh
IEDCR: Institute of Epidemiology, Disease Control and Research, Bangladesh
IHR: International health Regulations
IMAI: Integrated Management of Adolescent and Adult Illness
Inwent: Internationale Weiterbildung und Entwicklung GmbH, Berlin
JICA: Japan International Cooperation Agency
KAP: Knowledge, Attitude, and Practices Study
KEMRI: Kenya Medical Research Institute
KIT: Koninklijk Instituut voor de Tropen (Royal Tropical Institute)
MAFF: Ministry of Agriculture, Fisheries and Forestry, Cambodia
MoH: Ministry of Health
MoHP: Ministry of Health and Population, Nepal
MUHAS: The Muhimbili University of Health and Allied Sciences, Tanzania
NGO: Non-Governmental Organization
NIPORT: National Institute of Population and Research, Bangladesh
NPHLS: National Public Health Laboratories
NRL: National Reference Laboratory, Rwanda
PSTC: Population Services and Training Centre, Bangladesh
RAFT: Réseau en Afrique Francophone pour la Télémédecine
SWAp: Sector Wide Approach
ToR: Terms of Reference
UCR: University Research Co. LLC
<table>
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<tr>
<th>Acronym</th>
<th>Full Name</th>
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<tr>
<td>UNICEF</td>
<td>United Nations International Children’s Emergency Fund</td>
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<td>UNSIC</td>
<td>UN System Influenza Coordination</td>
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<td>UNAIDS</td>
<td>Joint United Nations Programme on HIV/AIDS</td>
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<tr>
<td>URL</td>
<td>Uniform Resource Locator</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>WHO</td>
<td>World Health Organization</td>
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EXECUTIVE SUMMARY

During the last decade the world has been faced with new pandemics, which due to growing mobility increased the risk of spreading rapidly across country and continent boarders. The focus of this fifteen-country-study is on assessing the pandemic preparedness with particular regard to maintaining regular health care delivery under pandemic or epidemic conditions. The goal of this study is to both describe the pandemic preparedness and help identifying needs for capacity building in pandemic preparedness in the selected fifteen GTZ partner countries.

The countries were assessed through different methodological approaches such as a short questionnaire, a detailed questionnaire, telephone interviews, and one in-depth GTZ fact finding mission depending on country specific requirements. A thorough literature research via internet was conducted for all fifteen countries. During the study it was revealed that there are only few adequate focal points in each country that can give concrete information about pandemic preparedness.

Most of the studied countries have pandemic preparedness plans available. However, not all are finalized. Several are still under preparation or not yet incorporated in health service provision or have not been updated for the past five years. Very few plans are comprehensive, and often the plans are not ensuring the continuation of routine health service during an epidemic or pandemic outbreak. All people participating in our study are aware of these plans, whereas this does not necessarily mean that healthcare workers are as well aware of them.

None of the countries offer comprehensive trainings in pandemic or epidemic preparedness. However, a majority of the countries seems to offer pandemic preparedness training in specified areas such as avian influenza. All of the countries indicated that there is a need for comprehensive and coordinated training. Few specialized national training institutions were identified. Mayor providers of training are often limited to international organizations such as WHO, USAID, AED or the Ministry of Health or the Ministry of Higher Education.

E-learning and distance learning including blended distance-learning are often underdeveloped in the partner countries or not yet developed at all. The majority of the interviewees are aware of the concept of distance learning (offline), though this training approach is not yet very common. The majority of the interviewees are also aware of the concept of e-learning (online). Low internet connectivity limits this approach. In addition, most interviewees seem to be aware of the concept of blended-distance learning combining offline and online sessions with seminars. All of these approaches need strong advocacy. An important prerequisite is training material in the local language.

The assessment on the data availability regarding capacity building of health staff and their knowledge, attitude, and skills with respect to pandemic preparedness was integral part of the situational analysis. However, the situational analysis did not identify potential tools for measuring the baseline and impact of capacity building in the 15 countries.
1 BACKGROUND

During the last decade the world has been faced with new pandemics, which due to growing mobility increased the risk of spreading rapidly across country and continent boarders. In 2005 the World Health Organization (WHO) produced new International Health Regulations (IHR) for enhancing national, regional, and global public health security. WHO, and other organizations and networks, have been working on systemic increasing control of disease outbreaks.

As described in Figure 1, pandemic preparedness comprises a complex set of issues and considerations in order to be prepared for a pandemic: (i) Plans need to be developed and exercised; (ii) all levels from “national” (e.g. Ministry of Health or Centre for Disease Prevention and Control) to “front line” (e.g. PHC providers) have to be integrated for generating preparedness; (iii) the implications of prone infectious diseases do not stop at the borders of the health care system, thus, collaboration and coordination with other sectors (e.g. education) must be established for best pandemic preparedness.

Figure 1: ECDC Model for National Pandemic Preparedness

![ECDC Model for National Pandemic Preparedness](image)

Source: European Centre for Disease Prevention and Control, 2009.

The Pandemic Preparedness Initiative was commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). Since 2009 GTZ is leading the Pandemic Preparedness Initiative in its partner countries in order to support pandemic preparedness with particular regard to surveillance and response, medical treatment and human resource development, and health information systems development. The initiative aims at supporting the GTZ partner countries in enabling government and civil society to fulfill their roles as stipulated in national emergency plans, in reaching minimum standards of pandemic preparedness, and in preparing partner countries in retaining control even in case of severe disease outbreaks.
The focus of this fifteen-country-study is on assessing the pandemic preparedness with particular regard to maintaining regular health care delivery under pandemic or epidemic conditions. The goal of this study is to both describe the pandemic preparedness and help identifying needs for capacity building in pandemic preparedness in the selected GTZ partner countries.

GFA was commissioned to conduct a situational analysis across the selected partner countries. The initial study was carried out from 7 October to 10 December 2010. This report is the result of the second revision of the initial report.
2 APPROACH AND METHODOLOGY

The Terms of Reference (ToR) foresee an “assessment of trainings of health care staff in low and middle income countries on medical preparedness towards epidemic prone infectious diseases”. The fifteen by GTZ selected partner countries of the Pandemic Preparedness Initiative are:

- Bangladesh, Pakistan, Nepal, Cambodia, Vietnam, Indonesia;
- Cameroon, Kenya, Rwanda, Tanzania, Malawi;
- Kirgizstan, Tajikistan, Uzbekistan, Ukraine.

GFA proceeded with a three-phased desktop research approach:

2.1 Phase I: Preparatory Work: 17 October – 11 November 2010

Identification of relevant stakeholders and data sources and the development of a questionnaire have been the main activities during Phase I. The questionnaire was designed as short as possible for avoiding disincentives of the interviewees to respond. This draft questionnaire was tested in Romania and Moldova and then adapted as necessary prior to submission. In addition, the questionnaire was translated into Russian language as well as into French.

As background information a basic literature-review focusing on pandemic preparedness, capacity building, and trainings was done. For this review relevant documents and articles were searched using Google, Google Scholar, ixquick, and PubMed. Additional reports (e.g. from UN and WHO) were found through the respective websites of these organizations. Citations of these documents were checked for relevance and relevant documents were then searched through the above mentioned search engines. The following search terms in combination with respective country name were used to find content-related literature: pandemic preparedness plans, avian influenza, training courses (public) health, capacity building health, (blended) distance learning, E-learning, needs assessment health staff, and knowledge, attitude, and skills. Besides the exclusion criterion of documents and articles not written primarily in English or French, there were no other specific in- or exclusion criteria used in this search.

2.2 Phase II: Collecting Information: 11 November – 3 December 2010

The final questionnaire was sent out to national stakeholders as well as to national WHO and GTZ offices on 1st of November 2010 and the feedback was received until 9th December 2010.

The return of the questionnaire was about 50%. In a second step in retrieving more country specific information telephone interviews with focal points and key persons in the project countries were conducted. For some of the countries this lead to useful first-hand information. A third step in retrieving information, which partly took place simultaneously with the telephone interviews, was to contact the key persons by email once more,
this time with a more detailed questionnaire with some open questions to get more qualitative data.

2.3 **Phase III: Analysis and Reporting**

**22 November – 10 December 2010**

Phase II and Phase III overlapped partially. On an ongoing basis new information was received, reviewed and analyzed. This provided more in-depth replies for analysis and reporting.

2.4 **Extension-phase: Revision of report**

**30 December – 18 February 2011**

After receiving important feedback the initial report as submitted on 10 December 2010 was revised. This implied an alteration of the methodology as mentioned in the proposal. The original methodology was based on gathering information through direct contact with the responsible people in the countries. It only foresaw limited time to do a web-search to gather additional background information available online. After receiving the feedback it was decided to do a full web-search on all fifteen countries to retrieve as much information as possible from online sources.

This web-search was done in a systematically way per country. Where in the initial search we mainly focused on scientific literature, this time more focus was put on information on web-pages and reports of all different kind of organizations. For this search mainly Google, Google Scholar, and to a lesser extend PubMed was used. The main search terms used, always in combination with the country name, were: “training pandemic”, “training materials pandemic”, “distance learning pandemic”, “distance learning health”, “training needs assessment”, “capacity building health staff”, and “KAP study pandemic”. For all of these search-terms at least the first 20 to 30 results were screened on relevance. For searches in countries with higher HIV/AIDS prevalence the addition “-AIDS” and “-HIV” were added to get more accurate results on avian flu pandemics, and when no results on pandemic preparedness were found the searches were broadened to health in general.

The relevant results of the searches, including the appropriate link, were added to the country files (annex I) and reports, presentations and teaching materials were put on a DVD that is attached to this report.
3 LIMITATIONS OF THE STUDY

GTZ is conducting the Pandemic Preparedness Initiative since 2009 and thus has gathered large knowledge regarding pandemic preparedness. During this time they have built up an according network with experts and institutions. The study was based on a number of assumptions and risks which may limit the outcomes of this study.

During the desktop research it turned out that assumptions were not realistic:

- Not all identified partners were willing or available to respond to our questionnaires or phone calls in due time;
- The informational and data sources identified and reviewed mainly were not as relevant as expected. Most information gathered was rather on a meta-level then relevant country-specific data;
- It was not possible to retrieve the needed data from one source per country, but rather a set of stakeholders needed to get involved in this study in order to identify the focal points for local pandemic preparedness;
- A desktop assessment cannot gather as country-specific local data as the conducted GTZ Fact Finding Mission on Pandemic Preparedness in Rwanda.
4 FINDINGS

The findings of this situational assessment are presented in the country-files as per Annex I. The three packages as mentioned in the Terms of Reference are separately discussed in the country files. Information in the country files is originating from the questionnaires, the telephone interviews, as well as from the extended web-search. Whenever information was retrieved through the web-search and (parts of) text were copied from online available information the source was mentioned. Information with no mentioning of a source was generally coming directly from the responsible person in the country.

In comparison with the initial version of this report most changes can be seen in the country-files. With the more elaborate web-search a lot of extra information could be added to these country-files. It is undesirable to also add all this new information into the text of this report, since the readability of this report would not benefit from this. So the country specific chapters of this report were only marginally adapted to the newly gathered information. Through the additional systematic web-search more than 200 new documents, with a volume of over 800 MB were found, which can all be found on the attached DVD, which is an integral part of this report. Important to mention is that information gathered through a web-search is always limited to a certain point in time and one can never be sure that all available relevant information has been found.

In this section we summarize the main findings for the fifteen selected partner countries of the Pandemic Preparedness Initiative. Additionally we describe some general information that was retrieved that can be relevant for more countries.

4.1 General

A very important organization found is the Academy for Educational Development (AED). This nonprofit organization, that works globally, has been involved for the last five years as a key partner in the U.S. Government’s efforts to plan for and respond to pandemics. One of their main focuses is on training and many training and information materials can be found on their website. This material contains reports, guidelines, posters, flyers, and radio- and TV-adds. A large selection of these materials can also be found on the attached DVD.

A wealth of training materials was found on the website of the Humanitarian Pandemic Preparedness Initiative (H2P)\(^1\), an initiative that many different international organizations and agencies joined. Also a lot of useful information was found at the inter-agency resource centre, which was developed under the aegis of the UN System Influenza Coordination (UNSIC)\(^2\). The WHO-website “www.influenzatraining.org” also contains lots of training materials on this subject. Furthermore there is the Communicable Disease Policy Research Group (CDPRG), which staff has published over 140 articles in international peer reviewed journals. Many of these documents and other materials can be accessed through their

\(^1\) http://www.pandemicpreparedness.org/
\(^2\) http://www.influenzaresources.org/
website\textsuperscript{3}. Finally there is the CORE group who does a lot of work on pandemic preparedness, as part of the earlier mentioned H2P initiative. Their website\textsuperscript{4} also contains many links to interesting information, documents, and training materials on pandemic preparedness.

Online trainings were found at the Johns Hopkins Bloomberg School of Public Health\textsuperscript{5}, the Centre for Disease Control (CDC)\textsuperscript{6}, the State of New Jersey Department of Health and Senior Services\textsuperscript{7}, International SOS\textsuperscript{8}, and by Ms. Christine Moore from the Mount Sinai Hospital\textsuperscript{9}.

\subsection{Bangladesh}

For Bangladesh, we could identify a Pandemic Influenza Preparedness Plan, which can be found online on the website of the Directorate General of Health Services (DGHS)\textsuperscript{10}. The most recent version of this plan is the 2\textsuperscript{nd} version\textsuperscript{11}, published January 2009 and targeting the period from 2009 to 2011. This plan was prepared by a National Multi-Sectoral Planning Team consisting of members of the wildlife, livestock, and health sector. Important to know is also that pandemic preparedness is incorporated in training programs.

We could identify both ongoing, as well as finished training programs on pandemic preparedness. The main providers of these trainings were WHO, Ministry of Health and Family Welfare, the Institute of Epidemiology, Disease Control and Research (IEDCR)\textsuperscript{12}, and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)\textsuperscript{13}. At the moment, among others, the IEDCR provides training on emergency health delivery response to healthcare providers. WHO, in collaboration with the Government of Bangladesh, provides training on pandemics to healthcare providers and ICDDR,B conducts an international training course on emergency responses. They provide fellowships to doctors and nurses to get them familiar with cholera and shigella epidemics. In the past, the Epidemic Control Preparedness Program (ECP)\textsuperscript{14} of ICDDR,B organized many different trainings on epidemic preparedness.

For influenza (both H1N1 and H5N1) surveillance systems from IEDCR and WHO are available. Capacity building for health providers and training is provided by IEDCR, and for other influenza types surveillance is provided by ICDDR,B and IEDCR. In addition to the earlier mentioned organization, other players in adult education in Bangladesh are BRAC University\textsuperscript{15},

\begin{itemize}
\item \textsuperscript{3} http://www.cdprg.org/publications.php
\item \textsuperscript{4} http://www.coregroup.org/our-technical-work/initiatives/h2p
\item \textsuperscript{5} http://www.jhsph.edu/preparedness/training/online/pan_flu.html
\item \textsuperscript{6} http://www.bt.cdc.gov/cerc/CERConline/pandemic/index.html
\item \textsuperscript{7} http://www.state.nj.us/health/training/panflu/print.shtml
\item \textsuperscript{8} http://www.internationalaos.com/en/pandemic-online-learning.htm
\item \textsuperscript{9} http://microbiology.mtsinai.on.ca/education/videos/ChristinePandemicLow.htm
\item \textsuperscript{10} nasmis.dghs.gov.bd/dghs_new/index.php?option=com_docman&Itemid=79&lang=en
\item \textsuperscript{11} GoB: National avian influenza and pandemic Influenza Preparedness and response plan BANGLADESH 2006-2008 - 2\textsuperscript{nd} Draft.
\item \textsuperscript{12} IEDCR: http://www.iedcr.org/
\item \textsuperscript{13} ICDDR,B: http://www.icddrb.org/
\item \textsuperscript{14} http://www.icddrb.org/publication.cfm?classificationID=46&pubID=2738
\item \textsuperscript{15} BRAC University: http://www.bracuniversity.net/
\end{itemize}
Population Services and Training Centre (PSTC)\textsuperscript{16}, and National Institute of Population and Research (NIPORT)\textsuperscript{17}.

No distance learning in the field of pandemic preparedness was found. Distance learning courses offered by other institutes were found, but it is not clear if they also offer courses in the field of health. More information can be found in the country-file. Furthermore, we have found one useful document, written by Karmakar and Wahid\textsuperscript{18}, with recommendations on the e-learning readiness in Bangladesh.

### 4.3 Pakistan

Pakistan seems to mostly focus on emergency / disaster preparedness plans instead of pandemic preparedness plans. It was indicated by the interviewees that pandemic preparedness plans are available in the country. We did not find any indication of pandemic preparedness trainings happening, there was only an indication that a field epidemiology and laboratory training program, focusing on influenza surveillance was being set-up. There is an expressed need for the establishment for such trainings.

Concerning training institutes for e-learning or distance learning we identified the Virtual University\textsuperscript{19} in Pakistan, which offers education programs through a combination of broadcast television and the internet. However, they do not seem to focus on health related subjects. Some other potential partners on distance learning were found and can be found in the appropriate part of the country-file. Also some interesting references to capacity building plans were found which can be found in the country-file. KAP-studies were only found in subjects other than pandemic preparedness.

### 4.4 Nepal

Both an operational plan on National Avian Influenza and Influenza Pandemic Preparedness and Response\textsuperscript{20}, issued by the government of Nepal and a Contingency Plan for an Influenza Pandemic issued by the United Nations System Nepal are available\textsuperscript{21}. Both plans focus in parts on the regular healthcare delivery during epidemic outbreaks and the operational plan has a separate chapter on the capacity building.

The main actors in the Ministry of Health and Population (MOHP) involved in epidemic preparedness and response are the Epidemiology and Disease Control Division (EDCD) and the National Public Health Laboratory under the Department of Health Services. The Regional Health Directorates and District Public Health Offices participate in the direct response to outbreaks through the Regional and District Rapid Response Teams. A network of 28 district hospitals participates in the Early Warning and Response System

\textsuperscript{16} PSTC: http://www.pstc-bd.org/
\textsuperscript{17} NIPORT: http://niport.org/
\textsuperscript{18} Chandan K. Karmakar, C.M. Mufassil Wahid, ‘Recommendations For Bangladesh Towards E-Learning Readiness’, MMT 2006, Tampere
\textsuperscript{19} Virtual University: http://www.vu.edu.pk/
\textsuperscript{21} United Nations System Nepal: Contingency Plan for an Influenza Pandemic. August 2008
(EWARS). BP Koirala Institute of Health Sciences (BPKIHS) and other Medical Colleges support outbreak response and develop training activities on outbreak management. Trainings in the field of pandemic preparedness were held by United Nations Nepal, the Nepal Red Cross Society and UNICEF.

There are some worries about the concept of e-learning in Nepal, because of the bad internet connectivity in the country. One of our interviewees from the government indicated that training of some key persons abroad, who could then train other people in their own country, would be the most appropriate way to roll out trainings fast. Potential partners for training that were mentioned were WHO, CDC, and universities not further specified.

Specific information about e-learning in Nepal was found on the website of ADB Institute. They did a pilot course on developing computer courseware in the beginning of 2007, which was evaluated positively. It seemed, however, that this course was not continued nor got a sequel. A document by the International Federation of Red Cross and Red Crescent Societies on Humanitarian Pandemic Preparedness (H2P) mentions the use of e-learning, but not specifically in Nepal. They do, however, mention three trainings for 90 health professionals in Kathmandu and Nawalparasi, two trainings for 58 community leaders in Ilam, and five trainings for 125 female community health workers in three districts. To increase country coverage, the Nepal Red Cross Society also conducted one-day trainings in 10 districts to reach 511 staff, volunteers and partner organizations' representatives. So they could be considered as a potential partner for further collaboration in the future.

A very brief paper by Amrita Khakurel explores the effectiveness of e-learning in Nepal. The conclusion from this paper is that the cost for the implementation of e-learning are high, but that in the long run the benefits will outweigh the costs.

Finally results were found of a preliminary study by Rajbanshi on the planning and policy of Nepal to combat the H1N1 Pandemic. Some references to training were made in this paper and as one of the actions taken by the Ministry of Health and Population (MoHP) after the emergence of H1N1 virus in 2009 trainings for health workers were conducted on surveillance, case management, infection control and community mitigation.

22 http://www.bpkihs.edu/
23 http://www.nep.searo.who.int/en/Section4/Section27.htm
25 International Federation of Red Cross and Red Crescent Societies: Annual report; Humanitarian Pandemic Preparedness (H2P). April 2010
26 Khakurel A. E-learning – exploring its potential in Nepal
27 Rajbanshi R. Swine Flu: A Preliminary Study of the Planning and Policy of Nepal to Combat the H1N1 Pandemic
4.5 Cambodia

A National Comprehensive Avian and Human Influenza Plan for Cambodia is available\(^{28}\). The extensive plan is a combination of the Animal Health Plan developed by the Ministry of Agriculture, Fisheries and Forestry (MAFF) and the Human Health Plan developed by the Ministry of Health (MoH) in combination with an Inter-Ministerial Cooperation Plan. The date of publication is not clearly mentioned, but the plan is most probably written in 2006.

Both pandemic preparedness plans and human resource development plans exist. According to the interviewees it seems that plans are not just available, but they also focus on the continuation of regular healthcare delivery and in-service trainings on these plans are in place. Some important players in adult learning were given and their names can be found in the attached country file. Potential partners for future collaboration that were indicated are WHO, University Research Co. LLC (URC)\(^{29}\), and US-CDC.

Existing e-learning courses that could be identified are the InWEnt Health Impact Assessment program, but it was indicated by the interviewees that due to the poor English language knowledge, many participants dropped out. However, InWEnt together with the Department of Hospital Services plan to undertake a new e-learning program in 2011. Another institute offering e-learning courses in Cambodia is the Open Institute\(^{30}\). They seemed to have adapted and translated an e-learning program of InWEnt but they are not specialized in health issues. Finally there is the Institute of Business\(^{31}\), which offers e-learning courses, but also not in the field of healthcare.

A Rapid Situation Analysis by the AsiaFluCap, more information about Capacity Building of Health Staff and information from two KAP-studies was found through the web-search.

4.6 Indonesia

For Indonesia we could trace a National Strategic Plan for Avian Influenza Control and Pandemic Influenza Preparedness\(^{32}\). This document was issued in January 2006 and is a joint formulation by the Ministry of Health and the Department of Agriculture and was coordinated by the State Ministry for National Development Planning/Bappenas. While more recent plans, both from MoH as well as a multisectoral plan under the National Committee for Avian Influenza Control and Pandemic Influenza Preparedness (KOMNAS FBPI)\(^{33}\), should be available, they are not accessible online.

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\(^{28}\) Government of Cambodia: Cambodia; National Comprehensive Avian and Human Influenza Plan

\(^{29}\) URC: http://www.urc-chs.com/


\(^{31}\) Institute of Business: http://www.nib.edu.kh/


\(^{33}\) KOMNAS FBPI: http://www.komnasfbpi.go.id/policies.html
As can be seen in the country-file, Indonesia does offer training courses in pandemic preparedness. Thematic areas that these trainings focus on are: pandemic simulation, pandemic preparedness for emerging diseases, emerging diseases critical care and clinical management, infection control for healthcare workers, and Avian Influenza Early Detection for primary healthcare workers. These trainings are implemented by the Ministry of Health (MoH) in collaboration with WHO, and financed by WHO and external donors like EU, JICA, AusAid, USAID, and APSED.

In relation to the situational assessment we noted that already quite some developments have been going on in Indonesia in relation to pandemic preparedness. These are things like the development of the above mentioned guidelines and trainings, pandemic simulations, documentation of national response during a pandemic and the lessons learned, monitoring and evaluation programs, and further development of healthcare facilities, mainly focusing on medical equipment. For baseline data the number of H5N1 and H1N1 cases are known as well as the infection prevention control baseline data in selected hospitals. Furthermore, in 2006 the multi-year Community Based Avian Influenza Control (CBAIC) project (set to end in August 2008) was part of the USAID strategy for reducing the risk of pandemic flu in Indonesia.

MoH, NGOs, universities, and international organizations are occupied in the country with adult learning. Both, conventional as well as distance learning courses are offered. Potential partners for development of (distance learning) trainings in the field of pandemic preparedness that were identified are: ADPC (Asia Disaster Preparedness Centre)34, US CDC, WHO, CIAIC, KIT University35, North Carolina Centre of Public Health36, and the John Hopkins University37.

Several different assessments and KAP-studies were done on this subject that can be found in the country-files.

4.7 Vietnam

Pandemic Preparedness plans are available. One is the Integrated National Plan for Avian Influenza Control and Human Pandemic Influenza Preparedness and Response; 2006 – 200838. Another is the Integrated National Operational Program for Avian and Human Influenza; 2006-201039. Both the documents were issued by the government of Vietnam and the first one with support of World Bank and the UN. A third document, dated November 2005 is a National Plan of Action on Human Influenza Pandemic Prevention and Control in Vietnam40.

34 ADPC: http://www.adpc.net/v2007/
35 KIT: http://www.kit.nl/
36 UNC Centre for Public Health Preparedness: http://cphp.sph.unc.edu/training/index.php
37 John Hopkins University: http://www.jhu.edu/
The pandemic preparedness plan is linked with the national health plan. Continued health care delivery during epidemic and pandemic outbreaks is addressed in the plan. Moreover pandemic preparedness is addressed in pre-service curricula and includes nurses, nurse assistants, doctors, medical assistants, lab technicians and public health officers. There are also trainings in place for in-service training. It was not specified who organizes or conducts these trainings. Further information about training that was found were a UNICEF training program funded by USAID, training of commune-based animal health workers, veterinarians, and healthcare workers organized by the Ministry of Agriculture and Rural development and the Ministry of Health, and trainings organized by the Kenan Institute Asia. More information about all these trainings can be found in the country-files.

In an overview of University-level e-learning in the ASEAN (Association of Southeast Asian Nations) they indicate that there are many projects in e-learning supported by the Ministry of Education and Training in Vietnam. A web portal by the Ministry of Education on e-learning, unfortunately only focuses on ‘diet & weight loss’ as well as on ‘family and parenting’. Moreover, there is an extensive document available which evaluates e-learning options in Vietnam.

Assessments were found on training needs, the degree to which Avian Influenza is of concern to poultry farmers and other stakeholders, and on the functioning of medical associations in Vietnam. Also two KAP-studies were found.

4.8 Cameroon

Through the questionnaire, it was indicated that there is a pandemic preparedness plan, which is linked to the national health plan as well as a human resource development plan in place. Its implementation is monitored and the continuation of health care delivery during epidemic and pandemic outbreaks are addressed. According to our interviewees there are pandemic preparedness trainings in the planning for in-service health care staff, but not yet implemented. It was suggested that the coordination and implementation of the trainings should be the original task of the Ministry of Health, the Ministry of High Education and partners in development. National partners could be the faculties of medicine (Yaounde, Douala and Buea) as well as UNICEF, WHO and GTZ.

Apparently, there are distance and e-learning training courses available, but there are difficulties in the implementation. Some institutes were identified and more information about these can be found in the country-

41 Charmonman S. University-Level eLearning in ASEAN. Proceedings of the Second International Conference on eLearning for Knowledge-Based Society, August 4-7, 2005, Bangkok, Thailand
42 http://www.elearningvn.com
files. The literature review revealed that there is an assessment\(^{45}\) of the national avian influenza prevention and control emergency plan in Cameroon available online. This assessment focuses especially on animal health and only gives recommendations but no feedback on implementation of the recommendations. A communication plan in case of avian flu is in place, but only has a very limited budget (US$ 50,000). The assessment also recommends that the national work plan should be tested in a multisectoral simulation process with the participation of all the district structures involved in order to ensure its working.

Through an internet research, the Red Cross and the Red Crescent action\(^{46}\) were also identified as possible partners for implementing pandemic preparedness trainings. The Cameroon Red Cross Society trained its relief and health directors from ten provinces on avian flu in 2007.\(^{47}\) Also the Francophone African Network for Telemedicine – Réseau en Afrique Francophone pour la Télémédecine (RAFT)\(^{48}\) was identified as a possible partner for distributing pandemic preparedness trainings. They offer webcasts interactive courses, videoconferences and teleconsultations.

Two country-comparison assessments of Cameroon were identified focusing on human resources and capacity building. The main conclusion from these assessments was that there has been improvement in human resource capacity over the past years and that the situation in Cameroon is not as bad as it is in many other African countries.

### 4.9 Kenya

Pandemic preparedness plans are available, but no information on human resource development plans or training courses regarding pandemic preparedness could be obtained. A short presentation on Disease Surveillance and Response in Kenya\(^{49}\) was found during our internet research. In this document the Head of the Department of Disease Surveillance and Response of the Ministry of Public Health and Sanitation, issued in August 2009, outlines the types of surveillance available in Kenya and briefly gives an overview of existing and needed capacities. This report states that over 6,000 Health Care Workers have been trained in surveillance and response since 2005. The country does have National Public Health laboratories (NPHLS) and the Kenya Medical Research Institute (KEMRI)\(^{50}\), however, surveillance linkage to action is weak at lower levels due to lack of capacity. Furthermore, they struggle with a weak reporting and communication system from health facilities to district/Central surveillance unit, weak laboratory capacity and the lack of quarantine and adequate isolation facilities. In addition a major constraint is an insufficient early warning system for epidemic preparedness and response and limited...
financial resources. The presentation identifies the following areas where support for capacity building is needed: training of health personnel in surveillance data management, provision of support in implementation of international health regulations and support of the mobilization of finances to support rapid response teams with necessary supplies for effective outbreak response.

A possible implementation partner is the African Medical and Research Foundation (AMREF)\(^{51}\) having its headquarters in Nairobi, Kenya. This foundation has experience in distance learning and is currently offering 10 print based courses on health topics including some short courses that address relevant aspects and competencies for pandemic preparedness. However, there is no full training package of pandemic preparedness and training curricula could not be obtained. Finally, there is also the African Virtual University\(^{52}\) in Kenya. They offer many different courses, but once more not in the health field. This reference was found through the very helpful site Re.ViCa\(^{53}\), which gives an overview of a systematic review of Virtual Campus initiatives of the past decade within higher education and throughout the world.

### 4.10 Rwanda

Only in September 2010 an extensive fact finding mission on pandemic preparedness was done in Rwanda by GTZ\(^{54}\). We used the results of this study for our assessment. Rwanda does have a preparedness plan\(^{55}\) but this still seems to be under construction. In 2009 the MoH initiated a process of health disaster management contingency planning to overcome the existing problems in the planning, management, coordination, and supervision of response activities and health disaster preparedness within the health sector. Together with various stakeholders they try to develop a national disaster management system.

The most potential partner for collaboration in the future on training in pandemic preparedness is the National University of Rwanda’s School of Public Health\(^{56}\). They maintain close links with the MoH and the school offers a Masters program in Public Health. Additionally they also offer short courses in various topics, of which one of them is pandemic preparedness. They have indicated that they are keen on collaborating with the Pandemic Preparedness Initiative in the future. Other potential partners for collaboration in training and for development of preparedness plans could be the University Central Hospital of Kigali (CHUK)\(^{57}\), which could do more on direct health staff training, the National Reference Laboratory (NRL),

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51 AMREF: http://www.amref.org
52 African Virtual University: http://www.avu.org/
53 Re.ViCa: http://www.virtualcampuses.eu/index.php/E-learning_Progress_at_Ain-Shams_University
54 Herzog K, Utazirubanda AK. Pandemic Preparedness in Rwanda; A Fact Finding Mission – Technical Report (no date)
55 Mbarubuye S, Kagwisage Y. Plan d’urgence de prévention et de lutte contre la grippe aviaire au Rwanda; draft 0. Kigali, Mars 2006
56 National University of Rwanda: http://nur-sph.org/
57 CHUK: http://www.chk.org.rw/
and the MoH, more specifically the Environmental Health Desk and TRAC Plus\textsuperscript{58}.

Besides information from this fact finding mission some additional information about distance learning and an interesting District Capacity Needs Assessment, supported by DFID was found online.

### 4.1.1 Tanzania

In general the topic of pandemic preparedness seems to have the focus of the people and they are keen on collaborating. Pandemic preparedness plans are available in the country. Interestingly it is believed that these plans are not reaching their goal and that these plans do also not ensure the continuation of normal healthcare during a pandemic.

Trainings in pandemic preparedness are available, however not much information on these trainings could be found online. From the questionnaires and the interviews it was understood that these trainings are mainly organized by the government, more specifically the Department of Training and Human Resources Developments. Trainings were funded by the Government of Tanzania, CDC and USAID. The target groups of these trainings are mainly the health workers. It seems that training on pandemic preparedness is not part of the standard pre-service training program.

The concept of e-learning or distance learning is known, but since this concept is very new too many Tanzanians, awareness creation is very important in this aspect. A potential partner that is mentioned to run such a course is The Muhimbili University of Health and Allied Sciences (MUHAS)\textsuperscript{59}. Some institutes offering distance learning courses could be traced and an interesting assessment was done by the International Training & Education Centre on HIV on the use of distance learning to alleviate the shortage of healthcare workers in Tanzania. In this assessment many training centre were mentioned and a full list of these centers and their web-addresses can be found in the country-files.

### 4.1.2 Malawi

An internet research showed that there is a pandemic preparedness plan in place in Malawi\textsuperscript{60} and in 2007 there was a needs assessment study on human resources / capacity development within the Health Sector conducted in cooperation with the Ministry of Health and the Malawi Health SWAp Donor Group\textsuperscript{61}. Furthermore a power point presentation was found with a Status Report on the Avian Influenza Emergency Preparedness Plan for Malawi\textsuperscript{62}. The major activities in this presentation included public awareness creation on Avian Influenza, strengthening of the surveillance for Avian Influenza in animals and humans, strengthening of the capacity

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\textsuperscript{58} TRAC plus: http://www.tracrwanda.org.rw/index1.htm

\textsuperscript{59} MUHAS: http://www.muchs.ac.tz/

\textsuperscript{60} Ministry of Health, Malawi: “Status Report: Avian Influenza Emergency Preparedness Plan for Malawi” (no date known)

\textsuperscript{61} Ministry of Health, Malawi: “Human Resources / Capacity Development within the Health Sector Needs Assessment Study”, Malawi Health SWAp Donor Group, GTZ (June 2007).

\textsuperscript{62} Available on attached CD-Rom
for managing the disease and strengthening of monitoring and evaluation including an overview of the budget allocation.

We have information that the implementation of the pandemic preparedness plans lies in the hands of the government but are not reaching the envisioned goals. We found no details about official trainings in this thematic area. However, during last year’s epidemic, the biggest encountered problem was to communicate with the Ministry of Health. For example, one hospital was trying to coordinate with the MoH to set up an emergency plan, which failed. Finally the hospital developed trainings and teachings not only for themselves but also for other municipal and Regional/Central hospitals. However, several weeks later a group from MoH came to teach them about pandemic influenza preparedness. Hence, coordination of activities with regards to pandemic preparedness seems to have some problems in Malawi.

It was suggested that when planning the training courses it would be advisable to plan “visible” interventions accompanied by teaching, because the target group might sometimes lack self-motivation.

The web-page of the, USAID sponsored, Human Resources for Health (HRH) Global Resource Centre has a wealth of interesting materials. Looking for information about the capacity building in Malawi already resulted in 35 interesting articles, reports, and powerpoint presentations. Most documents do focus on the impact of HIV/AIDS on the Human Resource situation in the country.

4.13 Kyrgyzstan

The evaluation of the questionnaires showed that there is a pandemic preparedness plan in place in Kirgizstan and it is linked to the national health plan. Moreover also a human resource development plan has been set up in the country. Health care delivery during epidemic and pandemic outbreaks is addressed in the plan and includes risk communication, development of preparedness plans, the setting up of referral systems, outbreak management, prevention measures as well as general infection control measures, basic medical care, special training for influenza and exercises to implement plans. However, pandemic preparedness is not part of the national pre-service curricula. It is part of the in-service trainings, where they also already have been implemented.

The questionnaires and the according responses in particular provide a list of the thematic areas of the conducted training and the according target group. However, no comprehensive training package is available. Through the web-search some references to trainings by UNICEF, the U.S. Naval Medical Research Unit No. 3, CDC and Who could be found. Regarding the institution that is implementing and coordinating the trainings the Kyrgyz State Medical Academy\(^63\) was named as well as the Ministry of Health. These trainings are financed by the MoH and various donors and a needs assessment might have been conducted but our informant was not too sure about it.

Distance learning is perceived as a suitable approach as long as the training material is provided in Russian. However, there are currently no

\(^{63}\) Medical Academy: http://www.ksma.edu.kg/
distance or e-learning courses with particular regard to pandemic preparedness in the country. Probably, the best implementing partner would be the Medical Academy, who is already offering some internet-based training courses. The main training so far on pandemic preparedness has been done by the WHO. Some courses have also been funded by USAID.

A. Aidakayeva gives an updated overview about e-learning in Kirgisztan\textsuperscript{64}, though not focused on e-learning in health care or pandemic preparedness in particular.

### 4.14 Tajikistan

Procedures and measurements for pandemic preparedness are described mainly on a meta-level, indicating what should be done and how training should look like. We found one training power point presentation on Avian Influenza Surveillance as well as a presentation on training on Rapid Response (in Russian)\textsuperscript{65}.

WHO Tajikistan performed trainings, which started in 2007 and were finished in May 2010 during the avian flu pandemic hence the material focuses only on avian flu. Overall 1,442 participants were trained, including some with the National Red Cross (H2P). The target group was mainly health workers and the World Bank financed the project. The focus of the training was on human resources development, strengthening laboratory capacity, the establishment of early warning systems, active surveillance and reporting, the procurement of Tamiflu and vaccination as well as on an improvement of communication, clinical management and the setting up of isolation rooms on a national and regional level. Furthermore tabletop simulations exercises were carried out. The WHO national office was working in collaboration with the Ministry of Health. The cooperation between WHO and Ministry of Health is proposed as the best implementing partner for GTZ. As far as we know there are currently no more regular trainings, distance learning or e-learning training programs on pandemic preparedness in place in Tajikistan. The avian flu training was completed in May 2010. Moreover, no non-governmental national partner could be identified who either has already experience with distance or e-learning or who would be suitable for a partnership with GTZ.\textsuperscript{66}

A rapid health assessment on behalf of the Health Cluster was undertaken at the end of 2008 and results were published in 2010 only. This assessment, which was led by the Tajikistan Country Office of WHO, in collaboration with the MoH provides interesting information on health status of the population and the availability of resources. Another interesting paper by the Swiss Agency for Development Cooperation compares different countries in the area of Human Resources for Health. Interestingly Tajikistan scores relatively high on the number of health personnel, but most are employed in the public sector and there is an uneven distribution across the regions.

\textsuperscript{64} See: http://spacejournal.ohio.edu/issue12/aidakyeva.html
\textsuperscript{65} Presentations available on attached CD-rom
\textsuperscript{66} A detailed assessment on e-learning in Tajikistan can be found under http://www.midasebook.com/dosyalar/volume_II.pdf
4.15 Uzbekistan

There is currently no pandemic preparedness training in place, but it is in the planning for 2012. WHO and MoH are working on a concept note, which is in its draft version at the moment and not yet ready to be distributed. Focus will be among others on surveillance and response, and, international health regulation and will be implemented through the government / Ministry of Health, and the National Influenza Centre. The target group will be doctors, nurses, and government officials. Trainings in rapid response and laboratory testing and on epidemiology and disease surveillance for public health experts is provided by USAID and the U.S. Department of Health and Human Services’ Centers for Disease Control and Prevention (HHS/CDC).

At the moment, there is no distance or e-learning courses available with particular regard to pandemic preparedness. However, the national concept of education (2002) foresees distance learning. The Technical University of Tajikistan (TUT) and the University of Technology in Tajikistan (UTT) became members of an association of “Virtual University of Europe and Central Asia”. Both Universities may serve as potential local partners for any further distance / e-learning programmes.

4.16 Ukraine

WHO published a report with the title “Assessment of Health Systems’ crisis preparedness Ukraine” in May 2009. According to this report, the system for mobilizing, coordinating, and integrating all available resources into an overall response is not fully coherent at all levels (horizontal and vertical). The health care facilities have no human resources development plan based on needs assessments. There is no preparedness plan in place for pandemics. There seemed to be understaffing in certain health sector specialties for instance in epidemiology and many of the present staff are nearing retirement age. Moreover, little training seems to take place in public health issues, e.g. disaster management, rapid health needs assessment and hospital crisis preparedness planning.

The preparation for a pandemic preparedness plan has started in 2006, was finalized in 2009 and it was financed by USAID. There are currently no Health Plans or national Health Strategies in place but their development is in progress. At the moment there is an assessment going on regarding the Human Resource Development Plan where WHO is working in cooperation with the Ministry of Health. This work is intended to be finished by the end of 2011.

Currently pandemic preparedness is only part of the national pre-service curricula for public health officers, not for doctors or nurses. In 2009, during the epidemic, there were some in-service training conducted for doctors and nurses, but these trainings seemed to have been very un-coordinated and did not follow any national plan. Currently there are no more trainings happening on pandemic preparedness and there are no comprehensive training packages available. Best partners for adult learning are probably

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67 TUT: http://www.tut.tajik.net (not functional as per 05.01.2011)
68 UTT: http://www.university-directory.eu/Tajikistan/Tajikistan.html
69 WHO: Assessment of health systems’ crisis preparedness – Ukraine. Copenhagen 2010
the National Academy of Post Grad Medical Education\textsuperscript{70} (for in-service) and the National Medical University\textsuperscript{71} (for pre-service). Furthermore, the National Kiev Academy with the School of Public Health\textsuperscript{72} and the Institute of Strategic Research\textsuperscript{73} an institution of the Ministry of Health were named as possible local partners. Usually the doctors are financing their own training courses, but there is some budget allocation for training in the MoH. Moreover, it will be rather difficult to conduct such training with an e-learning or distance-learning approach, because both approaches are quite new in the country and not very well known. The educational system in the Ukraine is characterized by lectures and direct contact courses; hence there is a need for advocacy. In order to increase the effectiveness of CME, distance learning/e-learning may become important incentives in the future.

\textsuperscript{70} Nat. Academy for Post Grad Med. Education: http://kmapo.edu.ua/en/home
\textsuperscript{71} National Medical University: http://ksmu.kharkov.ua/
\textsuperscript{72} National Kiev Academy: http://www.ukma.kiev.ua/ua/general/present/bookl_e.pdf
\textsuperscript{73} Institute of Strategic Research: http://old.niss.gov.ua/index_new.htm
LESSONS LEARNT AND RECOMMENDATIONS

The majority of the fifteen countries have pandemic preparedness plans available. However not all are finalized. Several are still under preparation or have not been updated for the past five years. All participants of our study are aware of pandemic preparedness plans. This does not necessarily mean that healthcare workers are as well aware of them.

The majority of the countries seem to offer pandemic preparedness training in specific areas such as avian influenza. However, none offer comprehensive trainings in pandemic or epidemic preparedness, i.e. including continued routine health care during outbreaks.

There are only few adequate focal points and contact persons in each country that can give concrete information about pandemic preparedness. Moreover most of the published information only gives a general overview of pandemic preparedness and gives little detail on country specific procedures, actions and activities.

Most interviewees seemed to be aware of the concept of distance and e-learning and are keen on introducing this format in their countries. However, e-learning and distance learning are often underdeveloped in the partner countries or are not developed at all.

There was a huge difference in the willingness of the people in different countries to participate in our study. This means that further in-depth contacts are necessary for future collaboration with these countries.

Field visits are most appropriate for gathering more detailed insight. Direct and personal contact allows access to key stakeholder and decision makers and thus significantly improves the outcome of country specific and relevant data with particular regard to pandemic preparedness, including currently available training materials and courses, assessments of performed needs assessments, and tools on capacity building assessments (e.g. KAP studies).

Good coordination with all active players in pandemic preparedness is necessary to avoid duplications, i.e. between curative and preventive systems or provincial and central levels.

We recommend additional investigations for generating more detailed information in terms of needs assessment for distance learning and e-learning as measures for pandemic preparedness.

Consultation with active institutions that offer distance learning should be held.

Advocacy and awareness raising of distance and e-learning approaches are important and necessary.
Annex II: Internet Sources

Asian countries in general

Regional Office for Asia and the Pacific. Pandemic Influenza Contingency Unit
http://ochaonline.un.org/roap/AvianHumanInfluenzaUnit/PlannedSimulationExercise/tabid/4323/Default.aspx

Regional Office for Asia and the Pacific. National Pandemic Preparedness Plans

UN: The Pandemic Preparedness Forum
http://un-influenza.org/regions/asia/ppf

WHO Regional Office for the Eastern Mediterranean
http://www.emro.who.int/index.asp

Bangladesh

Pandemic Influenza Preparedness and Response Plan Bangladesh

National AIDS/STD Programme Bangladesh
http://www.bdnasp.net

National Anti Tuberculosis Association of Bangladesh
http://www.natab.org

International centre for Diarrhoeal Disease Research, Bangladesh
http://www.icddrb.org

Institute of Epidemiology, Disease Control and Research and National Influenza Centre, Bangladesh
http://www.iedcr.org/

Epidemic Control Preparedness Programme (ICDDR, b)
http://www.icddrb.org/publication.cfm?classificationID=46&pubID=2738

Population Services and Training Centre, Bangladesh
http://www.pstc-bd.org

WHO Regional Office for South-East Asia: Bangladesh
http://www.searo.who.int/EN/Section313/Section1515_6038.htm

BRAC University
http://www.bracuniversity.net/

National Institute of Population Research and Training (NIPORT)
http://niport.org/
Avian and Pandemic Influenzas Resource Link
http://avianflu.aed.org/southasia.htm

UNICEF Bangladesh
http://www.unicef.org/bangladesh/media_2756.htm

UNICEF South Asia
http://www.unicef.org/rosa/emergencies_2499.htm

FluTrackers
http://www.flutrackers.com/forum/

University of London International Programmes
http://www.londoninternational.ac.uk/bn/index.shtml

Bangladesh Open University
http://www.bou.edu.bd/home.php

Research Training and Management International
http://www.rtm-international.org/assignments_completed.html

Developing Urban Health Systems in Bangladesh

Bangladesh Center for Communication Programs
http://www.bangladesh-ccp.org/index-success_AI.html

**Pakistan**

WHO Regional Office for the Eastern Mediterranean - Pakistan
http://www.emro.who.int/pakistan/programmes_eha.htm

Virtual University of Pakistan
http://www.vu.edu.pk/

Avian and Pandemic Influenzas Resource Link
http://avianflu.aed.org/approach.htm

Pakistan: Distance Learning Program on Arsenic Mitigation
http://washasia.wordpress.com/2008/05/08/pakistan-distance-learning-program-on-arsenic-mitigation/

Modern Institute of Informatics and Management (MIIM)
http://www.mycareer.edu.pk/skill-development-council.htm and
http://www.miim.edu.pk/Courses/Medical/health__care.htm)

Institute of Health & Management Sciences (IHMS)
http://www.ihms.edu.pk/index.htm

University of Karachi
http://www.uok.edu.pk/
Tele-Health Care
http://tele-healthcare.org/

National Institute of Health

**Nepal**

ADBI Institute: National course on E-Learning and Computer Courseware Development (Nepal)
http://www.adbi.org/event/2276.elearning.com.courseware.dev/

WHO Country Office Nepal: Epidemic Alert and Response
http://www.nep.searo.who.int/en/Section4/Section27.htm

WHO Regional Office for South-East Asia: Nepal
http://www.searo.who.int/EN/Section313/Section1523.htm

UN Nepal Information Platform

B.P. Koirala Institute of Health Sciences Dharan, Nepal
http://www.bpkihs.edu/

United Nations Nepal Information Platform
http://www.un.org.np/node/11044

Nepal Red Cross Society
http://www.nrcs.org/core-area/dm-h2p.php

Avian and Pandemic Influenzas Resource Link
http://avianflu.aed.org/southasia.htm

Center for Molecular Dynamics Nepal

Our Technology: Prosperous Nepal

The British Council
http://www.britishcouncil.org/nepal-exams-other-exams.htm

Tribhuvan University
http://www.tribhuvan-university.edu.np/

USAID Nepal Family Health Program II
http://nfhp.jsi.com/About/about.htm

Healthright International
http://www.healthright.org/where-we-work/nepal
Nepal Safer Motherhood Project
www.nsmp.org/publications_reports/documents/InfoSheet4CapacityBuilding.pdf

Cambodia

National Institute of Business (Cambodia): E-Learning Courses
http://www.nib.edu.kh/

Open Learning (E-Learning) Program Cambodia

URC
http://www.urc-chs.com/

Bulletin on Avian and Pandemic Influenza in Cambodia
gms-cdc.org/resource/doc_download/833--bulletin-on-avian-influenza-in-cambodia-no-254-as-of-31-may-2010.html and

Cambodia hosts Pandemic Health Training Exercises for ASEAN Countries

AED
ttp://www.influenzaresources.org/index_570.htm

Shining a Light on Health – Health Messenger

Loma Linda University School of Public Health
http://www.llu.edu/public-health/distance/index.page

HealthNet TPO
http://www.healthnetinternational.org/files/16/cambodia-country-programme.pdf

Reproductive and Child Health Alliance (RACHA)
http://www.racha.rg.kh/programCB.asp

Avian and Pandemic Influenza. Communication Resources
http://www.influenzaresources.org/index_570.html

Indonesia

WHO Regional Office for South-East Asia: Indonesia
http://www.searo.who.int/EN/Section313/Section1520.htm

Indonesia National Committee for Avian Influenza Control and Pandemic Influenza Preparedness (KOMNAS FBPI)
http://www.komnasfbpi.go.id/policies.html
Asian Disaster Preparedness Center (ADPC)
http://www.adpc.net/v2007/

Royal Tropical Institute (KIT)
http://www.kit.nl/

UNC Centre for Public Health Preparedness
http://cphp.sph.unc.edu/training/index.php
John Hopkins University
http://www.jhu.edu/

Community-Based Avian Influenza Control (CBAIC) Project
https://www.comminit.com/en/node/270898/293

DAI

ADB Jakarta Workshop Training Regional Experts to Combat Human Pandemic Influenza
http://www.adb.org/Media/Articles/2006/11082-Indonesia-avian-influenza/

National Committee for Bird Flu Control and Pandemic Preparedness
http://www.globalsecurity.org/security/library/news/2008/05/sec-080502-irin01.htm

Central Fund for Influenza Action
mdtf.undp.org/document/download/1528

Universitas Terbuka
http://www.ut.ac.id/ and http://www.ut.ac.id/icde2011/

Jarkarta Distance Learning Centre (DLC)
http://www.clr.ui.ac.id/jdlc/

University of Udayana DLC
http://gdln.unud.ac.id

University of Riau
http://uir.ac.id/uir/

University Hasanuddin Makassar
http://tinyurl.com/689ardv

International Federation of Red Cross and Red Crescent Societies
www.ifrc.org/docs/appeals/annual10/MAAID00210pu2.pdf

AsiaFluCap project

Avian Influenza Working Group of the US Embassy
USAID Review and Assessment of the private health care sector in Indonesia
http://www.hrhresourcecenter.org/node/2855

Avian and Pandemic Influenza Resource Center (AED) KAP Study
http://avianflu.aed.org/seasia.htm#indonesia

Vietnam

E-Learning Vietnam
http://www.elearningvn.com

Internet and e-learning. The case of Viet Nam
http://gauge.u-gakugei.ac.jp/apeid/apeid04/country_papers/Vietnam.pdf

USAID
http://vietnam.usaid.gov/node/209

Ministry of Agriculture and Rural development and the Ministry of Health about Avian and Pandemic Influenza

Kenan Institute Asia (K.I.Asia)
http://www.kiasia.org/EN/Group_Tier.asp?GroupTierId=5

Partnership on Avian and Human Pandemic Influenza (PAHI)

Vietnam Development Information Center (VDIC)
http://www.vdic.org.vn/?name=home&mid=310

Global Development Learning Network
http://www.gdln.org

Ho Chi Minh city Development Learning Center
http://hdlc.org.vn/Home

Vietnam e-Health website
www.thuoc.net.vn and
http://healthmarketinnovations.org/program/thuocnet-viet-nam-e-health-network

AED
http://avianflu.aed.org/seasia.htm

People and Organisation UK, Research and Training Centre for Community Development (RTCCD)
African countries

Cameroon

WHO Regional Office for Africa: Cameroon
http://www.afro.who.int/index.php?option=com_content&view=article&id=1020&Itemid=2051

RAFT
http://raft.hcuge.ch/

Grippe aviaire
http://www.grippeaviaire.gov.cm/anglais/pointsituation_details.php?op=0&id=8

Ecole Nationale Supérieure Polytechnique
http://www.polytechcm.org/

University of Yaoundé
http://www.uy1.uninet.com/

Panafrican Research Agenda on the Pedagogical Integration of ICTs

Telemedicine and e-Health
http://www.telemedicinealerts.com/Archives/2009/Feb_09/feb_06_09.htm

Journal of Telemedicine and Telecare
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Annex III: Questionnaire

This little international survey assesses in 15 countries the preparedness of medical staff towards epidemic prone infectious diseases. This is a question of how doctors and nurses “in the field” are prepared to face epidemic prone diseases rather than questions regarding epidemiologic warning systems etc. Please indicate your answer with an –X– in the appropriate field. Thank you for your cooperation.

<table>
<thead>
<tr>
<th>1. Are you aware of any pandemic emergency preparedness plans within the country?</th>
<th>[ ] yes [ ] no</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1. If so, who developed these plans?</td>
<td>[ ] government [ ] WHO [ ] Other UN-agency [ ] GTZ [ ] NGO [ ] University [ ] CDC [ ] Other</td>
</tr>
<tr>
<td>1.2. Who is responsible for distribution and implementation of them?</td>
<td>[ ] government [ ] WHO [ ] Other UN-agency [ ] GTZ [ ] NGO [ ] University [ ] CDC [ ] Other</td>
</tr>
<tr>
<td>1.3. What is the target group for these plans?</td>
<td>[ ] doctors [ ] nurses [ ] government officials [ ] NGO-workers [ ] Others</td>
</tr>
<tr>
<td>1.4. Do you think that these plans are reaching its goal?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>1.5. Do these plans also ensure the continuation of normal healthcare during pandemics?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>1.6. If these plans do not exist, do you feel the need is there to have such plans?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>2. Are there trainings in place on pandemic preparedness?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>2.1. If yes, who is conducting these trainings?</td>
<td>[ ] government [ ] WHO [ ] Other UN-agency [ ] GTZ [ ] NGO [ ] University [ ] CDC [ ] Other</td>
</tr>
<tr>
<td>2.2. If yes, who is attending these trainings?</td>
<td>[ ] doctors [ ] nurses [ ] government officials [ ] NGO-workers [√] Others</td>
</tr>
<tr>
<td>2.3. If not, do you feel that there is the need for such training?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>3. Are you aware of the concept of distance learning or e-learning?</td>
<td>[√] yes [ ] no</td>
</tr>
<tr>
<td>3.1. Have you ever attended a distance learning or e-learning course?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>3.2. Do you know about any distance learning or e-learning programmes in your country?</td>
<td>[ ] yes [ ] no</td>
</tr>
<tr>
<td>3.3. Would you like to participate in a distance learning or e-learning course?</td>
<td>[ ] yes [ ] no [ ] don’t know</td>
</tr>
<tr>
<td>3.4. In your opinion who would be the best to implement these trainings?</td>
<td>[ ] government [ ] WHO [ ] Other UN-agency [ ] GTZ [ ] NGO [ ] University [ ] CDC [ ] Other</td>
</tr>
</tbody>
</table>

4. Do you have any other comments concerning this subject:
Annex IV: Guideline for telephone interviews

Country: ___________________________
Name/institution: ___________________________
Date/time of interview: ___________________________

Start with brief introduction of study. To include some explanation about GTZ pandemic preparedness initiative, which was initiated by WHO. Now, GTZ is preparing the ground for assisting the partner countries in implementing (trainings on) pandemic preparedness plans and HR development plans. Clarify potential benefits for countries: Initiative may lead to distance learning programmes focussing on health care delivery during an epidemic in the country.

Package 1:

- Do you know about existing (or planned) training programmes (either conventional or distance learning) that focus on health care delivery during epidemics? Or do you know of trainings for health care staff that already have been performed?
- If so, try to get more information about this training
  - In which thematic area;
  - Who is implementing;
  - Who is financing;
  - Who is the target group;
  - Against which policies and plans (e.g. pandemic preparedness plans, health sector plans, human resource plans, etc.)
  - etc.
- If such training exist
  - What subjects/thematic areas are included (see list in TOR)?
    - Surveillance and response
    - Early warning systems in health care facilities
    - Infection control
    - Clinical management
    - Facility based planning (e.g. planning contingencies, screening and referral systems, lines of command, task shifting, stockpiling)
    - Exercises to implement plans
    - Other aspects, if relevant
  - Is it possible for us to acquire the training materials (e.g. curriculum) of these trainings?

- According to interviewee
  - What kind of training would be suitable with regards to this subject and
  - Who would be the best national or international implementing partner(s)?
**Package 2:**

- How do developers perform need assessments?
- How many health staffs (nurses, nurse assistants, doctors, lab technicians, CHW) are in the country?
- How many need to be trained/ have been trained on organization and provision of continued delivery of care during an outbreak?
- Who are the major players in adult learning in your country?
- Do you know of any (additional) national or international institutes (universities, public health institutes, NGO’s, WHO) that offer health training and / or distance learning courses, or could be suitable to do this?
Annex V: Additional (quantitative) questionnaire

Assessment of capacity building in the area of pandemic preparedness

Country:

Name/institution:

Date:

- Is there a pandemic preparedness plan or any other emergency preparedness plan (e.g. disaster plan)?
  
  [ ] Yes  [ ] No

- **If yes**, how is it linked with the national HEALTH PLAN or national HEALTH STRATEGY?
  
  [ ] Yes  [ ] No  [ ] Don't know

- Is there a human resource development plan in your country?
  
  [ ] Yes  [ ] No  [ ] Don’t know

- Is implementation monitored?
  
  [ ] Yes  [ ] No  [ ] Don't know

- Approximately how many health staff are in the country?

  Nurses [ ]
  Nurse assistants [ ]
  Doctors [ ]
  Clinical officers [ ]
  Lab technicians [ ]
  Community health workers [ ]
  Public health officers [ ]
  Estimated total [ ]

- Is continued health care delivery during epi- and pandemic outbreaks addressed in this plan?
  
  [ ] Yes  [ ] No  [ ] Don’t know
- If yes, what aspects?

  [ ] Implementing International Health Regulations
  [ ] Risk communication
  [ ] Early detection and response (Early warning systems in health care facilities)
  [ ] Field Epidemiology Training
  [ ] Development of (facility based) preparedness plans
  [ ] Setting up referral systems
  [ ] Outbreak management (planning and organization of the response, staff, triage, equipment, finance allocation, logistics)
  [ ] Prevention measures (e.g. non-pharmaceutical: quarantine, social distancing, using personal protective equipment, hand washing, closing public venues and pharmaceutical – immunizations, role of antivirals, antibiotics etc.)
  [ ] General infection control measures – hygiene
  [ ] Basic medical care: diagnosis, differential diagnosis, appropriate treatment and management
  [ ] Special training for influenza: e.g. management of acute respiratory diseases
  [ ] Exercises to implement plans

- Is pandemic preparedness part of national pre-service curricula?
  [ ] Yes
  If yes, for what target group? Nurses, nurse assistants, doctors, medical assistants, lab technicians, public health officers.
  What thematic area (prevention, immunization, care, emergency care, hygiene, handling of emergencies or other?
  [ ] No
  [ ] Don’t know

- In-service trainings:
  Are there any in-service training programs existing, planned, or finished that prepare for health care delivery during epidemics
  [ ] Yes, are planned (please answer question number 6.)
  [ ] Yes, have been implemented, exist (please answer question number 3.)
  [ ] Not planned
  [ ] Don’t know

- If you know about training programmes, could you tell us:
  In which thematic area (please tick, multiple choices are possible, please add target group, e.g. nurses, nurse assistants, doctors, medical assistants, lab technicians, public health officers, others)

  [ ] Implementing International Health Regulations
     Target group: [______________________________]

  [ ] Risk communication
     Target group: [______________________________]
[ ] Early detection and response (Early warning systems in health care facilities)
Target group: [ ]

[ ] Field Epidemiology Training
Target group: [ ]

[ ] Development of (facility based) preparedness plans
Target group: [ ]

[ ] Setting up referral systems
Target group: [ ]

[ ] Outbreak management (planning and organization of the response, staff, triage, equipment, finance allocation, logistics)
Target group: [ ]

[ ] Prevention measures (e.g. non-pharmaceutical: quarantine, social distancing, using personal protective equipment, handwashing, closing public venues and pharmaceutical – immunizations, role of antivirals, antibiotics etc.)
Target group: [ ]

[ ] General infection control measures – hygiene
Target group: [ ]

[ ] Basic medical care: diagnosis, differential diagnosis, appropriate treatment and management
Target group: [ ]

[ ] Special training for influenza: e.g. management of acute respiratory diseases
Target group: [ ]

[ ] Exercises to implement plans
Target group: [ ]

Is it possible for us to receive the training materials (e.g. curriculum) of these trainings? Please kindly attach or provide the link.

- Is there any comprehensive training package addressing the whole scenario of continued care during outbreak situations?
  [ ] Yes    [ ] No    [ ] Don’t know
    o Integrated into or an expansion of existent in-service trainings
    o Part of pre-service trainings (or curricula)

If yes, can you provide it, a link, a contact we could follow up with?
• Who are the major players in adult learning in your country? Who is coordinating and implementing the trainings?

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• Do the training developers perform need assessments? If so, how?

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• Who is financing delivery of trainings:

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**Distance learning (may be e-learning or paper-based)**

• Is blended distance learning, i.e. distance learning with support of a mentor at a medical college plus some direct contact courses) a suitable approach to capacity building of staff in your country?

• What tools, e-learning or distance learning courses are available?

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• If yes, who would be the best national partner to run such a course (high quality medical college, teaching hospital or university plus/minus NGO as organizer)?

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• Do you know of any (additional) national or international institutes (universities, public health institutes, NGO’s, WHO) that offer health training and/or distance learning courses, or could be suitable to do pandemic preparedness courses (please give as detailed information as possible)?

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• Do you have additional comments or suggestions with respect to capacity building in the area of pandemic preparedness?

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Thank you for your cooperation!
Please kindly return the questionnaire to GFA Consulting Group