Mission Report to the Greater Darfur Region, Republic of Sudan

Development of the Early Warning System (EWAR) for surveillance control and response to epidemic-prone diseases in the Greater Darfur Region

24 April – 21 May 2004

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WORLD HEALTH ORGANIZATION

Mission objective

- Provide support to the WHO office in Khartoum to develop an Early Warning System (EWAR) for epidemic-prone disease surveillance, response and control as part of the humanitarian response in the Greater Darfur Region.

The author of the present report would like to express his gratitude to all of the persons met during this mission for their participation, collaboration and support.
Calendar of major activities performed

This mission was intended to contact the Federal Ministry of Health (FMoH), the international humanitarian agencies, the NGOs, and the other UN agencies involved in the health activities in the context of the humanitarian action in Darfur region, to develop a common and standardized Early Warning System (EWAR) for surveillance, control and response of epidemic prone diseases.

The mission arrived to Khartoum on 24 April and participated in the health task force meeting held at the WHO Khartoum office to coordinate health intervention in North, South and West Darfur.

On 25 April, there was a briefing with WHO/EHA officers in Khartoum, a coordination meeting in the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) office in Khartoum with other humanitarian agencies. The same day there was a meeting with Dr Osman Bilail who is in charge of the surveillance unit at the FMoH in Khartoum.

On 26 April, there was a meeting in the WHO Khartoum office to define the outline of the EWAR system and define collaboration with the National Public Health Laboratory in Khartoum. A meeting with Dr Mubarak Karsani from the National Public Health Laboratory was also attended.

There was a meeting with the technical surveillance task force: United Nations Children's Fund (UNICEF), the United States Agency for International Development (USAID), Médecins sans Frontières - France (MSF), MSF Holland, Médecins du Monde (MDM) and MSF Belgium to discuss objectives, health events, reporting system, data analysis and responses of the EWAR system for IDPs in the Darfur region.

The development of the EWAR draft protocol and PC application was ongoing from 27 April- 2 May.

On 3 May, there was a presentation of the EWAR protocol proposal to NGOs, international humanitarian agencies and other UN agencies.

On 4 May, there were preparations made for the field trip to South, North and West Darfur to meet local Ministries of Health (MoH), NGOs on the field, medical assistants working in the primary health care (PHC) health units in the accessible camps and to discuss and test the feasibility and acceptability of the EWAR system.

From 5-11 May:
- Travel to Nyala, South Darfur.
- Briefing with the local WHO officers and introduction of the EWAR protocol.
- Meeting at local MoH with the Director General, Director of Preventive Medicine, Director of EPI and Polio eradication program, presentation and discussion of the EWAR protocol.
- Assessment of the Nyala laboratory made by Dr Mubarak Karsany.
- Identification of the local agent for the Kacy transport company for the transport of laboratory specimens.
- Visit to Kalma camp, meet with the local medical assistants and camp community leaders.
- Meeting with MSF Holland, MSF France, UNICEF, World Food Programme (WFP) and OCHA officers to discuss the acceptability and feasibility of the EWAR system.
- Identification of the epidemiologist in charge with the data entry, data analysis, reporting to the Federal level and response activities for the EWAR system.
- Installation of PC application for data entry, data analysis and report production in the PC of the epidemiology unit.
- Training of the designed epidemiologist in charge with the EWAR, Mr Ali Mirgani, on the EWAR protocol and use of PC application.
- Positioning of Cary Blair and Transisololate transport media at EPI/ MoH office and WHO office.

On 11-14 May:
- Travel to El Fasher, North Darfur.
- Briefing with the WHO local officer and introduction of the EWAR protocol.
- Meeting with the Director General of the local MoH to introduce the EWAR system.
- Identification of the local epidemiologist, Ms Badria Abdalla, designed to be in charge of the EWAR system.
- Identification of the local agent of the Kacy transport company for the transport of laboratory specimens.
- Participation in the local workshop to identify major and crucial needs of the humanitarian crisis and introduce the EWAR system to all local partners.
- Meeting with GOAL, International Committee for the Red Cross and Red Crescent (ICRC), MDM, IRC, Save the Children UK and Oxfam to introduce the EWAR system and discuss the acceptance and feasibility of the EWAR system.
- Training of the local epidemiologist and local statistician on the data entry, analysis and report production for the EWAR system.
- Installation in the AIDS/MoH computer of the PC application for the EWAR system.
- Visit to the El Mashmel and Bushok camps, meet with the local medical assistants.
- Positioning of Cary Blair and Transisolate transport media at EPI/ MoH office.

On 15-17 May
- Travel to Al Genina, West Darfur.
- Briefing with the WHO local officer and introduction of the EWAR protocol.
- Meeting with the Director General of the MoH to introduce the EWAR system.
- Identification of the local epidemiologist, designed to be in charge of the EWAR system.
- Identification of the local agent of the Kacy transport company for the transport of laboratory specimen.
- Participation at the local health coordination meeting, held at MoH, to present the EWAR system to the NGOs and other partners involved in the health assistance in West Darfur.
- Meeting with MSF France and MEDAIR to discuss the feasibility and acceptance of the EWAR system.
- Training of the local epidemiologist and local statistician on the data entry, analysis and report production for the EWAR system.
- Visit to the Riad camp and meet with the local medical assistant.
- Positioning of Cary Blair and Transisolate transport media at EPI/ MoH office.

On 17-18 May
- Travel to Nyala, West Darfur.
- Meeting with the local WHO officer to revise the final version of EWAR protocol.
- Meeting with the local epidemiologist for further training on the use of PC application.

On 18-20 May
- Travel to Khartoum.
- Meeting with the WHO officers from North, South and West Darfur to define the plan of actions for the implementation of the EWAR system in the States.
- Meeting with Dr Mubarak Karsani to identify further needs for the National Public Health Laboratory.
- Meeting with DART and GOAL national coordinators to discuss the implementation of the EWAR system.
- Installation of PC application at the federal level.
- Identification of epidemiologist and statistician to be in charge at the federal level with data entry, analysis and report production for the EWAR system.
- Introductory training to the use of EWAR PC application at the federal level.
- Debriefing with Dr El Sakka Hammam, from WHO/EMRO to define further actions for the implementation of the EWAR system.

Due to the security situation, the visits to the camps was limited to the most accessible camps for international staff. To visit other camps, further security permits were required from each state's capital. Each permit required at least two days to be delivered by federal and local authorities. Therefore, there was not enough time to reach camps where security permits were required.

**Background information on major risk factor for epidemic prone diseases**

- **General security conditions:**

The general situation in the three states of the Darfur region for the Internal Displaced Population (IDPs) remains highly dramatic.

According to the last UN humanitarian profile No. 2, security for the displaced population remains of great concern in spite of the cease-fire agreement. Human rights abuses are still being reported by IDP communities and other war-affected populations. Many areas where IDPs are concentrated are not easily accessible for security reasons and the displaced population live under the continuous risk of attacks from Janjaweed (militia) groups.

In some areas, most people are not free to leave their locations of displaced/refuge and live under the continuous threats of harassment, looting, intimidation and other kind of human rights violations.

This insecure condition limits enormously the access by the majority of the displaced population to basic needs such as health assistance, water supply, food, firewood, appropriate shelters, basic services and humanitarian assistance.
• **Food security, nutritional status:**

According to UN report of May 2004, food security situation in Darfur remains precarious in spite of the efforts of WFP and its implementing partners. In April 2004, WFP distributed 8,895 tonnes of food assistance, however the agency estimates that for a population of 1.2 million displaced, the food assistance will require approximately 13,540 tonnes per month (UN Darfur humanitarian profile No. 2 p. 10).

The nutritional status of the displaced population is therefore of great concern even among the population in the accessible camps. A nutritional assessment carried out by some NGOs, such as MSF-France in West Darfur, have produced the following figures:

Mornay (West Darfur): 3% severe malnutrition, 17% moderate malnutrition (expressed in Z score)

Zalinge (West Darfur): 4.5% severe malnutrition, 18.9% moderate malnutrition (expressed in Z score, Epicentre, April 2004)

A recent rapid nutritional assessment, based on MUAC measurement, carried out by MEDAIR in the West Darfur in camps around Genina (May 2004), has produced the following figures: 3% red band, 27% Orange band, 38% Yellow band and 32% green band (no figures of the number of children included in the survey were available).

In Mukjar, West Darfur, MSF-Holland finalized a nutritional survey in May 2004. The survey targeted 900 children and the survey revealed a Global Acute Malnutrition of 20% with 3% severe malnutrition

• **Water and Sanitation:**

There are not yet precise figures about the water supply in the accessible camps. All camps visited by the mission: Kalma in Nyala, Al Bushok in El Fasher and Riad in Genina, had hand pumps. Water distribution points were noticed in all camps with long waiting queues for daily water collection. According to UN figures, the general access to clean water is estimated in the whole camps around 15 per cent.

During the workshop held in El Fasher, North Darfur, to identify the unmet needs of IDPs, the water supply for the population hosted in the accessible camps was estimated around five to ten litres per day per person. This is still far from the needs of 20 liters per person per day. However, there is an urgent need to assess the real water distribution in each camp and quantify the daily access to water supply per person.

During the last assessment mission from 6-9 May in Um Labasah, Mukjar, Um Dukhum and Kabum, West Darfur, the water supply situation varied from area to area.

In Mukjar and Kabum, the water supply is almost covering the needs of IDPs in terms of quantity and quality. However in Um Dukhum, Dagdusa and Um Labasah, water is still scarce and is very poor quality.

Sanitation is very poor in most of the areas where IDPs are seeking refuge.

In the camp of Al Bushok, near El Fasher, North Darfur, latrines have been built in sufficient number in respect to number of shelters, however their appropriate use is still a problem. It will require further sensitization of the camp population for their appropriate and correct use.

The official UN figures give an overall sanitation gap of 96 per cent, which means sanitation is still a big problem for the entire IDP population.

In the other camps visited by the mission, Kalma in Nyala and Riad in Geneina, the number of latrines was insufficient and the sanitation conditions in these camps could precipitate with the incoming rainy season in the next 15 to 21 days.

• **Morbidity and data collection:**

In almost all the camps where NGOs are providing health assistance, morbidity figures are collected on a daily basis. However, these data collection forms and reports are not yet standardized, remain limited to each camp and are not widely distributed.

The introduction of the EWAR system will immediately facilitate the standardization of data collection forms and the production of a weekly bulletin, which will facilitate the dissemination of information.

Acute Respiratory Infection (ARI), diarrhea, Malaria and measles are the most frequently reported health events in the last months, recorded in almost every region and among the major camps visited by the mission.
Outbreaks of measles have been reported by local authorities and international NGOs in the months of April and May in several localities among the three states of Darfur region. According to MSF surveillance reports in West Darfur, there have been 311 cases in Zalinge and 782 cases in Niertiti in April (weeks 15-18). According to EPI/MoH official reports collected during our visits, only 406 cases of measles were registered in April in West Darfur, 279 cases in North Darfur and no cases in South Darfur. Discussing with local EPI responsible, it seems there is an evident under reporting of measles cases in the whole region.

Other morbidity conditions reported from less accessible areas reveal conditions of trachoma, conjunctivitis, night blindness whooping cough and skin infections.

**Mortality and data collection:**

Mortality information remains sporadic and limited to the most accessible camps.

Data collected during April in Kalma camp, South Darfur, revealed a crude mortality rate (CMR) of 2.14 deaths per day per 10 000 and an Under Five mortality rate of 5.32 of deaths per day per 10 000. The major causes of deaths among children under five were acute diarrhoea and measles.

According to information collected by MSF at the end of April, a simple mortality surveillance system was providing regular information in Mornay since 6 Weeks. It is based on a regular grave count in 11 main cemeteries of the Mornay camp. Data is collected daily, with home visitors reporting new graves to MSF.

Every week, an average CMR is calculated and trends followed. From Week 12 to Week 17, CMRs have evolved between 0.5 and 0.9 deaths / 10,000/day. (MSF report on surveillance, May 2004).

In all camps visited by the mission, the medical assistants working in the health units collect mortality data almost regularly, and IDP community leaders provide most of the mortality information.

**Availability of IDPs population figures in greater Darfur Region:**

The following figures have been published by the office of UN resident and humanitarian coordinator (UN RC) for the Sudan in the Darfur Humanitarian profile No. 2, May 2004.

<table>
<thead>
<tr>
<th>State</th>
<th>Total Number</th>
<th>IDPs</th>
<th>Affected residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Darfur</td>
<td>349 333</td>
<td>320 906</td>
<td>28 427</td>
</tr>
<tr>
<td>South Darfur</td>
<td>284 847</td>
<td>233 138</td>
<td>51 709</td>
</tr>
<tr>
<td>West Darfur</td>
<td>455 829</td>
<td>432 329</td>
<td>23 500</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1 090 009</strong></td>
<td><strong>986 373</strong></td>
<td><strong>103 636</strong></td>
</tr>
</tbody>
</table>

During our visit to the three states, it was also possible to collect figures by camp and by the two major age groups: 0-4 years old and 5 years old and older.

See Annex 1 for detailed population figures in the camps from the last UN coordinator reports

See Annex 2 for the geographical distribution of camps from the last UN coordinator reports

**Setting up the EWAR system among IDPs camps**

**Meeting with Federal Ministry of Health and Humanitarian Agencies at the central level:**

A close collaboration between the main NGOs, humanitarian agencies and the FMoH has been implemented since the beginning of the mission to develop a standardized protocol to establish a standardized Early Warning System for epidemic prone diseases among the internally displaced population.

The process was also intended to standardize the data collection forms and feedback reports among all the partners involved in health assistance in the three States of the Darfur region.
A technical working group, composed of representatives of the surveillance unit of the FMoH, WHO, UNICEF, USAID, MSF-Holland, MSF-Belgium, MSF-France, and other NGOs in Khartoum, went through a process of revision and adaptation of the existing national surveillance system to identify and prioritize the health events to be put under surveillance.

Among the 22 health events and diseases included in the national surveillance system, the group selected and prioritized 12 health events for the Darfur EWAR system considered as major threats for the displaced population and include:

- Acute Watery Diarrhea
- Acute Flaccid paralysis
- Acute Respiratory Infection
- Bloody diarrhea
- Malaria
- Suspected measles
- Neonatal tetanus
- Suspected meningitis
- Acute jaundice syndrome
- Unexplained fever
- Injuries
- Severe malnutrition

For each health event, the working group agreed to collect information for two major age groups: 0 to 4 years and 5 or more than 5 years of age.

Death information will also be collected for each health event and for each age group.

- **Production of a standard protocol to be adopted by all partners at all levels of the system:**

A standard protocol (Attached document 1) for the whole system has been produced by the WHO consultant and submitted for revision to all partners on 26 April 2004.

The protocol describes in detail all aspects of the Early Warning System:

- Rationale
- Objectives
- Population under surveillance
- Health events under surveillance and case definitions
- Type of system
- Reporting units
- Population figures to be adopted
- Flow of data
- Data collection form
- Data entry and data analysis
- Indicators to be produced
- Data validation and data quality control
- Threshold triggering action for response and control of outbreaks
- Methods for rumours verification
- Early warning actions to be put in place according to thresholds definition
- Procedures to be done at each level of the system
- Description of the laboratory activities for diagnosis and confirmation
- Data recording forms in English and Arabic.

The protocol is intended to:

- Standardize all procedures of the system
- Be a practical guideline to train all actors in the system at all levels
- Be a reference document for all partners involved in the system

A simple standard case definition was formulated for each selected health event. Each case definition has been compared with the existing national case definitions for the similar health conditions to avoid the production of different case definitions that could create difficulties in their comprehension and application by medical assistants at the front line level.
A definition of thresholds for each health events has also been formulated to standardize the alert signals to trigger actions for the response and control of eventual outbreaks.

**Development of computer application for data entry, analysis and production of standard reports**

A simple computer application based on free share software EPIINFO 6.04 and EpiData 3.1, was produced to facilitate the process of data entry, data analysis and automatic production of simple and standard reports in text format at State level and at Federal level.

The application is conceived to automatize the whole process of data analysis in the way to produce the following indicators:

- Number of new cases and deaths for each health event by week
- Total attendance per week
- Case Fatality Ratio for each health event
- Proportional morbidity by age groups (0-4 and 5+)
- Distribution of new cases by geographical level
- Distribution of new cases by age groups and geographical level
- Number of deaths by age and geographical level,
- Number of health facilities reporting/number of health facilities expected to report
- Incidence of health events by week and geographical level
- Under Five years Mortality rate per 10 000 population per week
- Crude Mortality Rate per 10 000 population per week
- Timeliness from camps to the state
- Timeliness from the state to the federal level
- Completeness of the reporting units

Epidemiologists at state level and at federal level were introduced to the application through short training sessions in their place of work and on the computer where the application has been installed.

Practical and simple guidelines (Attached document 2) have also been produced and provided to each epidemiologist at the state and at federal levels.

The application allows the user to update population figures for each camp included in the system in a way to apply the most correct denominators for the computation of incidence and mortality rates.

The production of standard reports by state level, administrative units level and by camps, allows to produce immediate weekly bulletin in Word format or simple Text format.

The application allows for the transformation of data into graphs using Excel software to be inserted in the text standard reports.

**Testing reporting capacity, simplicity, acceptability and feasibility at field level.**

Once feedback was received on the protocol draft proposal from all partners involved, the mission went to visit the three states of the Darfur region to introduce and discuss with the local MoH the feasibility and acceptability of the EWAR system. A meeting with the local MoH Director General, the local epidemiologist responsible for the epidemiology unit and the director of preventive medicine, was held in each state to present the objectives and contents of the EWAR system. The discussion focused essentially on the identification of the practical aspects of the feasibility and applicability at the local level of the system. Information was collected about existing communications between the camps and the state, communications between the states and the federal level, availability of PCs at the state level and the involvement of NGOs with local MoH on planning and implementing health activities among IDPs.

Communication between camps and the state level remains still very difficult. Some camps are connected with the center by local transports for trades or transport of people. Other camps are connected with the state capital through the communication tools provided by local NGOs working in the camp, usually radios or satellite internet connections.

All NGOs contacted at field level have defined the EWAR system as simple, feasible and useful to standardize information and trigger actions for outbreak control and response.
Simplicity and comprehension of case definition and threshold definition have been tested among the few medical assistants met in the camps visited. Most of the case definitions as described in the EWAR protocol are already used by the local surveillance system put in place by some NGOs.

In addition to this, a training process is already planned, starting from 24 May, to present the EWAR protocol to all medical assistants involved in the health care activities in the camps.

The first training courses for medical assistants will be held from 24 May for the most accessible camps or in camps already supported by international NGOs as showed in the following table:

<table>
<thead>
<tr>
<th>South Darfur</th>
<th>North Darfur</th>
<th>West Darfur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalma camp</td>
<td>Al Bushok camp</td>
<td>Genina town</td>
</tr>
<tr>
<td>Bilel camp</td>
<td>El Fasher town</td>
<td>Ardamata camp</td>
</tr>
<tr>
<td>Kutum town</td>
<td>Masteri</td>
<td>Kernik</td>
</tr>
<tr>
<td>Kutum rural</td>
<td>Mornei</td>
<td>Kulbus</td>
</tr>
<tr>
<td></td>
<td>Sirba</td>
<td>Zallingi</td>
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<tr>
<td></td>
<td></td>
<td>Nertiti</td>
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</tbody>
</table>

The less accessible camps will be contacted and trained in the following weeks with the hope to cover all of them by the end of June 2004. Therefore the implementation of the EWAR system will take place in at least four weeks to allow for the training of all medical assistants from the camps that will be involved in the system.

The following table shows the list of camps and locations of IDPs that will be involved in the system in the coming four weeks:

<table>
<thead>
<tr>
<th>South Darfur</th>
<th>North Darfur</th>
<th>West Darfur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kass town</td>
<td>Korma</td>
<td>Sisi</td>
</tr>
<tr>
<td>Mersheng</td>
<td>Tawilla</td>
<td>Sandada</td>
</tr>
<tr>
<td>Kubum</td>
<td>Fata Borno</td>
<td>Seleia</td>
</tr>
<tr>
<td>Um Labassa</td>
<td>Tina</td>
<td>Kandabei</td>
</tr>
<tr>
<td>Jemeza Komera</td>
<td>Kornoi</td>
<td>Gulu</td>
</tr>
<tr>
<td>Hashaba</td>
<td>Umm baru</td>
<td></td>
</tr>
<tr>
<td>Nyamma</td>
<td>Kabkabiya</td>
<td></td>
</tr>
<tr>
<td>Singita</td>
<td>Serif Omra</td>
<td></td>
</tr>
<tr>
<td>Limo</td>
<td>Birkat</td>
<td></td>
</tr>
<tr>
<td>Kirew</td>
<td>Mellit</td>
<td></td>
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<tr>
<td>Guba</td>
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</tr>
</tbody>
</table>

- **Installing specimen collection and transportation to the reference laboratory in Khartoum for diagnosis and confirmation**

The Public Health Laboratory in Khartoum has accepted to be the reference laboratory for all specimens that will be collected and sent from the Darfur region for diagnosis and confirmation.

During the field visits, Cary Blair's and Transisolate transport media have been positioned in the EPI/MoH refrigerators in each State. All NGOs working in medical assistance in the camps have been informed of the availability of transport media and of the possibility to use the Public Health Laboratory in Khartoum for specimen confirmation and diagnosis.

The private carrier, Kacy, already working for the specimen transport for the polio eradication program, has been contacted and instructed to transport all specimens collected in the field. Transport will be covered by the budget of the EWAR system.

The director of the Public Health Laboratory in Khartoum carried out a rapid assessment of the Nyala laboratory in the Nyala Hospital in South Darfur. A list of reagents and basic needs have already been submitted to improve the capacity of the Nyala Laboratory and to ensure the presence of a microbiologist for at least six months to ensure diagnosis capacities for this field laboratory.

The same process should be carried out in the next weeks for the field laboratories in El Fasher and Genina. At moment the diagnosis capacities of these three laboratory are practically nil.

A supply order of reagents and basic material for the central public health laboratory in Khartoum has already been submitted to support and strengthen the technical capacities of this laboratory.
**Preparedness and response capacities**

As described in the protocol, one of the main objectives of EWAR is the early detection, response and control of outbreaks. All NGOs met during the visit in the three States of the Darfur region have been briefed about the crucial role they can play in the early detection and response to outbreaks among the IDPs camps.

The definition of threshold for each health event under surveillance has been discussed with national and international partners to agree upon the actions to be triggered in case of an alert or an epidemic among the displaced population. In all meetings with the FMoH and the states' MoH strongly emphasized the importance that the early detection of unusual patterns of diseases or syndromes is crucial in triggering prompt investigation and response. In each state, in collaboration with the local WHO office, the people, financial resources and the transports have been identified to organize a local outbreak control team to be mobilized in case of an alert of a suspected outbreak.

Positioning the transport media for laboratory specimens in all the three States is one of the crucial procedures for the preparedness for the investigation and confirmation of an outbreak. Because most of the camps in each State can only be reached by a car journey of at least four or five hours, it was decided during the last WHO coordination meeting in Khartoum (20 May) to distribute transport media to the NGOs that are operating in camps far from the state capitals as well. This procedure will facilitate the specimen collection, increase the quality of specimens and reduce the time for diagnosis and confirmation.

**Cholera and shigellosis preparedness:**

At present in most areas of agglomeration of IDPs, all major risk factors enhancing an eventual development of an outbreak of cholera or dysentery are actually present, namely: overcrowding, inadequate supply of quantity and quality of water, poor personal hygiene, poor washing facilities, poor sanitation, total insufficiency of soap and inadequate cooking facilities.

The 28 April 2004, WHO guidelines for Cholera and shigellosis outbreak control have been sent to all national and international partners, asking also to inform the WHO office and MoH about the amount of drugs and equipment available in each state in relation to cholera and other diarrhoeal diseases. During the field meeting with international NGOs, the high risk for cholera and shigellosis outbreak present in all camps due to the very poor sanitation conditions and to the scarce water supply was emphasized. In all coordination meetings at state level, the importance of readiness with all material for cholera and shigellosis preparedness before the beginning of the rainy season in the next few weeks was stressed.

The WHO office in Khartoum has already ordered 20 Cholera kits that have been transferred to FMoH. However, the federal authorities have been requested to pre-position as soon as possible, three Cholera kits in each State of the Darfur region.

At the time of the visit, it was evident that the preparedness in terms of drugs availability, ORS, IV fluids, chlorine for water disinfections and material to organize cholera treatment corners were still insufficient for adequate preparedness in case of a cholera outbreak in the three states. There is, therefore, an urgent need to accelerate the preparedness operations before the coming rainy season.

For the confirmation and testing of antibiotic resistance of the pathogens related with the health events under surveillance, all international and national partners have been informed that the national Public Health Laboratory in Khartoum will be the reference laboratory to test antibiotic resistance for the three States in the Darfur region using the specimen transportation system as described above.

**Measles immunization campaign**

The FMoH, along with the UN humanitarian agencies and international NGOs, agreed to launch a campaign for measles immunization in the three Darfur states, starting the 5 June 2004. The campaign will target all children from nine months to 15 years.
**Malaria preparedness**

Given the incoming rainy season in the Darfur areas, some NGOs with the coordination of the WHO office in Khartoum are ready to supply anti-malarial drugs for chloroquine-resistant malaria. The National Malaria Control program will coordinate and support the implementing NGOs for vector control and environmental control in the IDPs areas. Impregnated bed nets should also be provided to the displaced population, however their distribution and use will be related with the shelter conditions in each camp.

**RECOMMENDATIONS**

- **Implementation and coordination of the EWAR system**

According to UN Humanitarian Coordinator Office, official figures of accessibility to IDPs camps are 77 per cent as a whole (82 per cent for North Darfur, 63 per cent for South Darfur and 87 per cent for West Darfur). Thus, it has been envisaged by the local WHO offices in the Darfur States as well as from the WHO Khartoum office to start the implementation of the EWAR system in all accessible areas since the 29 May and to enroll all other areas in the system every time security standards allows accessibility to new camps.

A WHO officer, who will be directly in charge of the implementation and supervision of the EWAR system, was identified in each WHO local office in the three states of the Darfur region. This officer will closely cooperate with the national epidemiologist and statistician of the local MoH and will support them in the management of the data entry, data analysis and data interpretation of results. The same officer will also be part of the outbreak control team in case of Alert of an outbreak.

Dr El Sakka Hammam, from EMRO/WHO is the coordinator, for the moment, of the EWAR system and will be in charge of the first implementation phase of the system. As soon as he receives his travel permit to Darfur, he will travel in the three states to supervise the implementation of the system, to support the local MoH and meet the national and international NGOs to assess their involvement in the implementation of the system and ensure a durable coordination between WHO and field implementers.

There is an urgent need to recruit in the next 15 days, before the departure of Dr El Sakka, an epidemiologist who will be in charge with the whole coordination of the EWAR system to ensure its sustainability and consolidate the contact between the federal and national levels. The terms of reference have already been prepared and sent to CDS HQ.

- **Laboratory support**

A list for strengthening laboratory capacities at the central level in Khartoum as well as at field level in Nyala, El Fasher and Genina has already been submitted to the WHO Khartoum office at the beginning of May. There is a need to closely follow up the supply process in the next few weeks to ensure the capacities of these laboratories to support outbreak confirmation and diagnosis.

There is a need to test, as soon as possible, the functionality of the specimen transport system that was put in place during this mission, to correct in time eventual difficulties and bottlenecks.

Dr Mubarak Karsani, from the central laboratory, should travel in the next days to El Fasher and Geneina STATE to assess the condition and needs of the local laboratories and identify the technicians to be employed in these laboratories.

The Outbreak kit arrived in Khartoum more than three weeks ago, and containing laboratory material, reagents and material for specimen collection and transport should be positioned in El Fasher state, as already discussed in WHO Khartoum office.

- **Training activities to support implementation of the system**

As agreed in the meeting held 20 May in WHO Khartoum office, in the week of 24-29 May, the local WHO officer in the three States will train the first group of medical assistants from the camps nearest to the state capitals and accessible within a few hours by car.
The medical assistants will be introduced to the EWAR system and trained in the use of recording forms, use of case definition, application of threshold definition and reporting activities. They will also be trained in the implementation of rumors verification at camp level as described in the EWAR protocol. The protocol of the EWAR system will be used as a guideline for the training. The training will last one day.

For the camps where NGOs are present, their health personnel will be asked to be in charge of training on the EWAR system for the local medical assistants.

In the following weeks, all other accessible camps will be involved in the training activities to enroll them in the EWAR system.

Dr El Sakka Hammam will be in charge of further training on the use of PC application of the WHO officer and MoH epidemiologists and statisticians. He will also be in charge of organizing training sessions in each state for the same personnel in the interpretation of data and production of weekly bulletin.

- **Increase response and control capacities at state level**

As agreed in WHO office in Khartoum, an outbreak control team of three persons will be organized in each state. Two WHO officers and the epidemiologist from the MOH in charge with the EWAR system will compose the team.

There is a need to train the team in outbreak investigation, production and use of case specific investigation form, analysis and interpretation of results. This training can be started by Dr El Sakka Hammam and continued by the next EWAR coordinator.

As already agreed with WHO Khartoum office, all activities for outbreak response and control of the team will be covered by the budget of the EWAR system already available.

- **Accelerate the preparedness for epidemic prone diseases**

As already stated in this report, there is an urgent need to pre-position Cholera kits, drugs, material and chlorine for water and environmental control in the three states before the incoming rainy season in the next two weeks.

There is also an urgent need to pre-position all material and drugs for malaria control in the three states before the beginning of the rainy season.

**Activities planned at WHO Khartoum office to be carried out for the implementation of the EWAR system in the next four weeks**

As agreed during the WHO coordination meeting held in Khartoum on 20 May and with the participation of WHO staff from the Darfur states offices and the EHA staff in Khartoum, some activities need to be urgently finalized to allow the immediate implementation of the EWAR system.

Most of the following activities have already been planned with the agreement of the national and international staff already present in the three Sates in Darfur as well as with Dr El Sakka Hammam from WHO/EMRO in charge with the EWAR system coordination:

- Complete the training of the medical assistant from the IDPs camp on the EWAR system.
- Re-production and distribution of the record forms in Arabic and English together with case definition and definition of thresholds.
- Re-production of EWAR protocol and distribution.
- Supervision and assistance of the epidemiologist and statisticians in the local MoH at state level, especially during the first weeks of data entry and production of reports.
- Close monitoring of the first weeks of implementation of the system to check its functionality.
- Production of the first weekly bulletin to be discussed in each state's weekly health coordination meeting.
- Close supervision of the functionality of the specimen collection and transport to the Khartoum reference laboratory.
- Ensure the distribution of further Cary Blair and Transisolate transport media to most peripheral camps supported by NGOs.
- Follow up the requested laboratory supply and ensure they are distributed to the Khartoum Public Health Laboratory.
- Organize in-service training for WHO and MoH staff at State level for the interpretation and use of data analysis and reports produced by the computer application.
- Closely follow up the understanding and interpretation of threshold definitions and support the defined actions to be implemented.
## Annex 1: Number and locations of conflict-affected people (IDPs and host communities)

### North Darfur

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<tr>
<th>Locality</th>
<th>Administrative Units/locations</th>
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