
World Health Organization
Emerging and other Communicable Diseases, Surveillance and Control

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1. Background

Large-scale epidemics of meningococcal meningitis occur in cycles with irregular intervals in the African meningitis belt. The epidemic season is usually between November and April with peak activity in February-March. The widespread outbreaks which occurred in Niger in 1994 and 1995 indicated that a new epidemic cycle was about to start. In 1996, the worst epidemic ever was reported in Nigeria and vast outbreaks also occurred in Burkina Faso, Chad, Mali, and continued in Niger. The outbreaks in 1996 exhausted the global supply of meningococcal vaccine and evidenced the need for a coordinated response to meet the epidemics anticipated for 1997 with a limited supply of vaccine.

WHO therefore launched an initiative to enhance the ability of countries to respond to epidemic meningitis with targeted immunization programmes based on stronger epidemiological surveillance and laboratory services, improved public health communication and social mobilization and enhanced training in prevention, control and case management. Governments of 16 African countries committed themselves to this initiative in a meeting held in Ouagadougou in October 1996 and developed national plans of action. These plans included a national estimate of needs of vaccine and drugs based on criteria of population at risk, the epidemiological pattern of the disease, and available stocks of vaccine and other supplies at the country level. Similar steps were taken in countries at risk in the WHO region for the Eastern Mediterranean. The plan represented a shift from the epidemic response of the past to epidemic preparedness.

An ad hoc Working Group on WHO Strategy for Provision of Meningitis Vaccine for Epidemic Prevention and Control met in Geneva, 2-3 December 1996 and suggested the establishment of a coordinating group to support the countries committed to a more effective response to epidemic meningitis and to ensure rational use of the limited amount of vaccine available on a priority bases according to agreed criteria. As a result, an International Coordinating Group (ICG) was established in mid-January 1997 with representatives of Federation of the International Red Cross and Red Crescent Societies (IFRC), Médecins Sans Frontières (MSF), United Nations Children’s Fund (UNICEF), AMP (Association pour l’Aide à la Médecine Préventive), the World Health Organization (WHO), and technical partners including WHO Collaborating Centres for Reference and Research on Meningococci at the Centers for Disease Control and Prevention, Atlanta, Institut de Médecine Tropicale du Service de Santé des Armées, Marseille, and National Institute of Public Health, Oslo, as well as manufacturers of vaccine and autodestruct injection material. The Group was asked to review country needs and international resources, to mobilize these resources and make them available to countries according to their need. The sensitive task of distribution of the limited stock of vaccine was given to an Executive Sub-Group made up of IFRC, MSF, UNICEF and WHO with the Secretariat provided by WHO. Within 48 hours of receipt of a request for vaccine, the Sub-Group conferred by electronic mail and decided either to release vaccine for use according to a set of criteria developed by ICG, to request additional information, or whether to recommend and conduct an on-site assessment.

2. Epidemic meningitis in Africa, 1997

The anticipated continuation of epidemics in 1997 materialized, with important outbreaks in Burkina Faso, Gambia, Ghana, Mali, Niger and Togo. No reports were received from Nigeria in 1997 where 50% of the over 150,000 cases reported in 1996 had occurred. Table 1 shows the cases of meningitis reported to WHO for the period 1 January 1995 to
1 June 1997; table 2 refers to the number of cases (60,000) and deaths (6,000) reported to WHO during 1997, showing an average case fatality rate of 10.2%.

3. The Joint Appeal

One of the first activities of ICG was to assess the anticipated need for meningococcal vaccine, treatment drugs, injection and other material for the control of epidemic meningitis in Africa in the 1997 season (Table 3). The total cost, including shipping freight, amounted to nearly US$6.4 million. This assessment was presented to the international donor community in February 1997 in the IFRC-MSF-UNICEF-WHO Appeal for Meningococcal Meningitis Control in Countries at Risk in the African Continent, 1997-2000 (henceforth Joint Appeal).

3.1 Response to the Joint Appeal (table 4 & 5)

The appeal triggered a response reaching 63% of the target. As at 1 June 1997, funds and pledges administered through WHO amounted to over US$ 3 million from the bilateral agencies of Denmark, Netherlands, Norway, United Kingdom, United States of America as well as the Islamic Development Bank and the International Development Association, USA. In addition, US$ 1 million was provided from the WHO Director-General’s development fund.

The funds administered by WHO were used to secure a stock of 10 million doses of vaccine from Pasteur-Mérieux Connaught and from SmithKline Beecham. Funds were used to purchase drugs, autodestruct injection material, and incineration/disposal boxes to cover the needs of 1997 as well. In addition, and to be prepared for the next season, funds have been used to secure a contingency stock of 6.9 million doses of vaccine with the manufacturers and other items.

The IFRC allocated SFr 500,000 for the purchase of vaccine through the Federation’s Emergency Fund (DRAF). In addition, responses to the IFRC from National Societies amount to US$ 790,800 in cash and other in kind donations.

MSF intervened in the 5 most affected countries (Ghana, Togo, Burkina Faso, Gambia and Mali) for a total amount of US$ 2,370,000 (approx).

UNICEF supplied a total of 3,595,000 doses to Africa and 3,720,000 doses to the rest of the world at the total cost of US$679,000. These were to five West African countries (Angola, Gambia, Ghana, Mali and Togo) and Pakistan. The sum of US$50,800 was provided by donors in response to the joint appeal.

3.2 Availability of meningococcal vaccine A/C in 1997

The availability of meningococcal vaccine was the key issue for countries facing epidemics and for ICG in the 1997 season. A review at the end of the season shows that a total of 14.9 million doses had been made available to countries in Africa up to 1 June 1997 (Table 6). These included a contingency supply of 4.2 million in 8 countries in January 1997, before the epidemics started, 5.3 million doses distributed to 5 countries through ICG and 5.4 million doses shipped to 13 countries from other sources. Information is being collected on
how many of these doses were actually distributed and how many remain in countries as a contingency stock for the 1998 season but is not yet complete (Table 7).

3.3 Vaccine distribution through ICG

Nearly 50% of the vaccines supplied in Africa were made available through ICG. Table 8 shows in more details which countries received vaccines through ICG and other channels, and the pie chart illustrates how the different partners managed the supply of vaccines.

4. Role of the International Coordinating Group

4.1 Cost, delivery and use of vaccine

ICG contributed to improved delivery and rational use of vaccine during the meningitis epidemics in Africa in 1997 which ultimately benefitted the population at risk. Negotiations with manufacturers for a reserve stock of vaccines resulted in preferential prices for the vaccine. No request for vaccine had to be rejected because of lack of vaccine thanks to the stock which ICG maintained as a reserve with the manufacturers. This reserve also assured that the vaccine was readily available at short notice. Other materials delivered included autodestruct injection material and disposal boxes, oily chloramphenicol, latex agglutination kits and transisolate transport/culture media.

4.2 Ensuring Safe Injections

Orders for vaccine were “bundled” with orders for the corresponding quantity of autodestruct injection material and disposal boxes in most cases. This was a precedent set by the ICG to ensure that safe injection practices were observed during the vaccination campaigns.

4.3 Coordination

The work of ICG improved coordination between international agencies on the local as well as headquarters levels and developed or improved working relationship between the partners. The funds raised in the Joint Appeal and managed through ICG ensured that urgently needed vaccine could be sent without delay and supported operations of ICG partners in countries (e.g. MSF in Togo).

At national level: The ICG decision mechanisms allowed a strengthening of the coordination at the national level, where the Ministry of Health could assume leadership assisted by the partners. In Ghana, and in Gambia, once coordination had been established after some initial difficulties, the Ministry of Health mobilised local resources to cover all needs, and eventually reimbursed the ICG. In some instances, the funding/financial partner would call WHO to re-confirm the needs/requests; but in most instances, the requests formulated by the local teams were accepted, reinforcing their credibility in relation to the international community.

At the international level: International partners represented in the country were encouraged to improve coordination between themselves. They received better back-up from their respective regional office or headquarters which allowed them to make decisions in a short time.
Within the agencies of the ICG executive group: ICG improved the coordination and collaboration between headquarters and regional/country offices.

5. Measures to improve the functioning of ICG

The coordinated system for vaccine provision managed by the ICG was set up to deal with the special problems in the 1997 meningitis season, when a shortage of vaccine was anticipated. If this arrangement is maintained in future, the following improvements are proposed:

5.1 Awareness of the role of ICG

Close collaboration of ICG members is needed to ensure unified vaccine forecasts and ultimately sufficient vaccine stocks. The role of the ICG needs to be better communicated to the national authorities and the local representatives of ICG partners. The partners of the executive ICG sub-group should inform on the scope of ICG and its work, provide a report on ICG activities during 1997 and outline activities for the coming season in a note to the Ministry of Health of all countries concerned and to the local representatives of ICG partners.

5.2 Timeliness of ICG decisions

Countries submitting vaccine requests with well supported epidemiological information made it possible for ICG to make a decision to send vaccine within 24-48 hours (e.g. Togo, Gambia). Conflicting information or poorly documented requests resulted in a complicated decision making process. ICG rejected a request from WHO to send vaccine to a country whose vaccination plan was for preparedness for a potential epidemic rather than to control an outbreak. As the terms of reference for ICG only covered vaccine needs for control of epidemics the vaccine eventually shipped was not from the ICG supply.

5.3 Criteria for approval of requests

The interpretation of the criteria for vaccine distribution established in advance of the season suggests areas for improvements for the 1998 season, if the ICG-coordinated system for vaccine procurement is to continue in future. The criteria stipulated that the Executive Sub-Group should base its decision on epidemiological information and laboratory confirmation of group A meningococcal meningitis. Additional criteria are needed to ensure appropriate use of the vaccine and also to avoid time-consuming discussion at the time of the epidemics, such as the inclusion of a vaccination plan for epidemic control with the initial requests. Subsequent requests should be considered in light of regular reports to ICG from a local monitoring system on vaccine use and the amount of vaccine in stock. Unless warranty that autodestruct injection material would be available on site/by other means, all vaccine orders were combined with orders for similar quantities of auto-destruct injection material and disposal boxes.

5.4 Standardized formats for requests

If the coordinated mechanism for vaccine procurement continues in the 1998 season, a standardized form should be prepared to facilitate the decision making process. This form should clearly include the essential information for a request to be considered, such as epidemiological information and details on the vaccination plan (area to be covered, vaccination plans, target population, stock of vaccines and injection material).
other information such as the names and address of the local recipients, method of payment, details of the local coordinator (e.g. Ministry of Health, NGO, other) should also be indicated. The request should be forwarded by the Secretariat to the other members of the executive sub-group of the ICG, with a clear deadline for their response/comments.

5.5 Monitoring of procurement outside ICG

To avoid duplication and waste of vaccine it is essential that vaccine procurement outside the ICG system is promptly reported to the Secretariat.

5.6 Local coordination

Usually there was good coordination between national authorities and international partners represented locally, and this resulted in several requests where decisions could be taken quickly by the Executive Sub-Group. In some occasions, the decisions which should have been made locally were deferred to the executive sub-group of the ICG and this resulted in delays in decision making and more complicated coordination of the Executive Sub-Group.

5.7 Reporting on implementation of vaccination plans

In the 1997 season, the information needed to evaluate the implementation rate of vaccination plans and additional vaccine needs in the countries receiving support through ICG was not always available. As this information is essential for decisions regarding additional supplies, the national authorities or local representatives of ICG partners should provide regular updates on the progress of vaccination programmes at the district level.

5.8 Coordination with vaccine manufacturers

In spite of the willingness of vaccine manufacturers to work with the ICG, there were some difficulties, e.g. information on dates and amount of doses each country had ordered directly from a manufacturer was not always available, making the ICG decisions difficult. On one occasion, a shipment of 500,000 doses sent erroneously twice to one country caused much administrative work for the Secretariat which received little help from the manufacturer to rectify this error.

For the 1998 season, these problems should be overcome through various measures. For example, the ICG should identify alternative or additional mechanisms to manage vaccines reserved for the ICG. In addition, improved forecasting of vaccine requirements from countries should assist the manufacturers in planning production to ensure that these needs are met. Lastly, information from manufacturers on their total sales of vaccine to countries at risk of epidemic meningitis in Africa would improve ICG’s forecasting of vaccine needs for epidemic preparedness and control.


6.1 Evaluation and planning

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5Vaccine taken from the ICG stock without previous notice to ICG/WHO.
The executive ICG partners should analyse and evaluate experiences gained during the ICG operation in the past season and suggest solutions to problems identified for consideration in planning the ICG activities in the 1998 season. In particular, ICG should develop:

- a plan of action for the coming months;
- common monitoring tools (individual or common format);
- a mechanism for sharing information;
- revised terms of reference and mandate of ICG, including continuation or termination of the Executive Sub-Group

6.2 Establishment of a fund for epidemic preparedness

The response of donors to the Joint Appeal in 1997 helped create a fund for epidemic response in 1997. Reimbursements from some of the recipient countries and shipment of vaccines outside the ICG mechanism created a balance of funds and vaccines for operations during 1998. It is proposed to used these resources to start an epidemic preparedness fund for 1998-2000. This would be basis for a mechanism to ensure replenishment of emergency stocks of vaccine and injection material, guaranteeing immediate availability of vaccine and auto-destruct syringes as needed and avoiding dependency in vaccine procurement.

In preparation for the 1998 season, ICG should make clear to all potential recipient countries the conditions for receiving support within the ICG system. To clarify the role of ICG and secure complete understanding and support for the funding arrangements proposed, ICG should provide a full report of the epidemiological situation and the ICG response to countries during the 1997 season.

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Tables

Table 1  Cases of meningitis (CSM) in African countries reported to WHO 1995-1997 (as of 01 June 1997)

Table 2  Number of cases and deaths due to meningitis (CSM), reported to WHO; and case fatality rate (CFR) 1997 (as of 01 June 1997)

Table 3  1997 IFRC-MSF-UNICEF-WHO Appeal for meningococcal meningitis control in countries at risk in the African Continent, 1997-2000

Table 4  1997 IFRC-MSF-UNICEF-WHO Appeal for meningococcal meningitis control in countries at risk in the African Continent. Funds received as of 01 June 1997.

Table 5  1997 IFRC-MSF-UNICEF-WHO Appeal for meningococcal meningitis control in countries at risk in the African Continent. Use of funds received through WHO as of 04 September 1997.

Table 6  Supply of meningococcal A/C vaccine; selected African countries, 1997.

Table 7  Distribution of meningococcal A/C vaccine and oily chloramphenicol to selected African countries, 1997.

Table 8  Procurement of meningococcal A/C vaccine through ICG and through other channels as of 01 June 1997.

Table 9  Decisions of the Executive sub-group of the ICG on meningococcal A/C vaccine, January - May 1997