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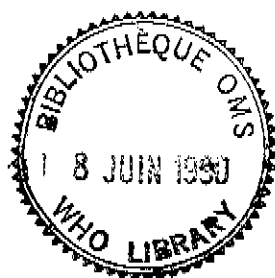
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PROGRAMME FOR THE CONTROL OF  
ACUTE RESPIRATORY INFECTIONS

REPORT OF THE FIFTH MEETING OF THE  
TECHNICAL ADVISORY GROUP  
(Geneva, 5-6 March 1990)

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## 1. INTRODUCTION

The fifth meeting of the Technical Advisory Group (TAG) of the WHO Programme for the Control of Acute Respiratory Infections (ARI) was held in Geneva on 5-6 March 1990. Dr M.H. Merson, Director, opened the meeting and explained that it had been convened in response to a request made by the ninth Meeting of Interested Parties (MIP) in June 1989 that some members of the TAG meet in even years, when the entire Group is not convened, in order to review the annual report, follow up on recommendations made at the previous meeting, and advise on specific matters, including the budget. The 1988-1989 biennium was a period of intensive development for the Programme during which its technical and managerial bases were firmly established. International interest in the control of ARI has increased considerably. The Programme is now in a position to collaborate actively with Member States and offer technical guidance to multilateral and bilateral agencies that are providing support to national ARI programmes.

Dr J. Borgoño was elected as Chairman.

## 2. STATUS OF THE PROGRAMME

The TAG reviewed the progress made by the Programme in 1989, as described in the Fourth Programme Report, 1988-1989<sup>1</sup>.

In the health services component, the Programme continued to give emphasis to the development of clinical and managerial policies and guidelines. Important modifications were made in the Programme's guidelines for the clinical management of pneumonia and other acute respiratory infections. Two ARI Management Charts have been designed which present the key elements of these revised guidelines. Further progress was made in developing appropriate technologies for the diagnosis and treatment of ARI, and specifications for suitable sounding timers and oxygen concentrators were distributed among interested manufacturers. By the end of 1989, plans of operation for ARI control programmes had been developed by 43 countries, 32 of which also had operational programmes. In the area of training, a major achievement was the completion of a Programme Managers' Training Course. The supervisory skills training modules were revised and replaced by a new module on the management of the young child with an acute respiratory infection. The Programme provided support for the establishment of ARI training units in six countries in order to gain experience in ways of organizing clinical training. By the end of 1989 some 7000 health workers had received training in ARI case management. Many countries with control programmes developed health education materials for use in face-to-face communication activities. A manual describing epidemiological and microbiological techniques for the surveillance of bacterial resistance to the antimicrobial agents commonly used to treat pneumonia was drafted. In many of these activities the Programme worked closely with multilateral and bilateral agencies, in particular UNICEF.

In the research component, support was provided in 1988-1989 to 17 new projects on priority topics in the areas of clinical, behavioural, health systems, and disease prevention research. Several studies on case detection provided important information that was used to revise the definitions of the two key signs of pneumonia, namely, fast breathing and chest indrawing, and to prepare special guidelines for the management of pneumonia in the young infant (under 2 months of age). A protocol for a multicentre study to learn more about the clinical signs and etiological agents of pneumonia, sepsis, and meningitis in young infants was prepared at a workshop attended by principal investigators and a group of experts. Standard definitions of clinical and radiological findings were adopted for use in clinical studies. Preliminary field-tests of an ethnographic

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<sup>1</sup> Document WHO/ARI/90.7.

instrument to assess mothers' ability to recognize pneumonia and their home treatment and care-seeking practices showed that it could provide useful information within a short period of time. In the area of disease prevention, a study was initiated to investigate risk factors for pneumonia and preparations were made for an efficacy trial of a conjugated vaccine against Haemophilus influenzae type b.

### 3. 1990 WORKPLAN OF THE SERVICES COMPONENT

The TAG reviewed the workplan for 1990 of the services component. The Programme will finalize and disseminate the technical guidelines on case management, which will appear in a manual entitled: "Acute Respiratory Infections in Children: Case Management in Small Hospitals in Developing Countries. A Manual for Doctors and other Senior Health Workers".<sup>1</sup> This manual will be supplemented by a series of five technical review papers on case management and an annotated bibliography on the management of pneumonia in children. Available information on the feasibility and cost-effectiveness of strategies to prevent morbidity will be reviewed. Field and laboratory tests of appropriate technologies (sounding timers, oxygen concentrators) conforming to the WHO specifications will be organized. Recommendations will also be issued on the use of plastic foot-pumps for delivering nebulized bronchodilators to children with wheeze, and on methods of administering oxygen to young children. A new video film on the assessment of the child with cough or difficult breathing will be produced, for use in conjunction with the supervisory skills module on management of the young child with an acute respiratory infection. Efforts to plan and implement country programmes will be intensified using the Programme Managers' Training Course and the supervisory skills module. Guidelines and teaching materials will be developed for the directors of ARI training units. Training materials for community health workers will be prepared. Existing flip charts and other educational materials will be revised to make them consistent with the new and revised guidelines. Efforts will continue to develop instruments for measuring the access, use, and impact indicators in national programmes. Collaboration with multilateral and bilateral agencies will be expanded.

### 4. RESEARCH MANAGEMENT PLAN

The TAG reviewed the research management plan<sup>2</sup> which was implemented in 1989 and will be consolidated in 1990. The plan seeks to focus research on priority topics and to respond efficiently to the demands of the services component. An original scheme for research management within WHO has gradually been established, as recommended by the TAG in 1989.

According to this scheme, research priorities established by the TAG are made widely known to scientists and proposals are solicited. Technical workshops are held to assist in (i) reviewing findings on specific priority topics, including the progress and final reports of supported projects; (ii) establishing appropriate methodologies to address the research priorities; (iii) reviewing proposals; and (iv) advising on the design, implementation, and analysis of specific projects. Commissioned research is undertaken in situations where results are urgently needed, similar studies are required at multiple sites, or a difficult methodology is involved. Proposals and commissioned protocols are reviewed by at least two external experts, using a standard review form. Decisions on project funding are made by the Secretariat taking into account the reviewers' comments, the research priorities, and the available funds. The TAG is consulted as necessary to advise on competing proposals or to arbitrate in the event that there are conflicting views on a particular proposal. It will also undertake a review of funded projects at its annual meeting.

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<sup>1</sup> Document WHO/ARI/90.5.

<sup>2</sup> Document ARI/RES/89.1 Rev. 1 (1990).

## 5. 1990 WORKPLAN OF THE RESEARCH COMPONENT

The TAG reviewed the workplan for 1990 of the research component. The Programme will continue to support projects in the priority areas. Three documents describing the priorities in case management research<sup>1</sup>, behavioural research<sup>2</sup>, and health systems research<sup>3</sup> will be published and disseminated. The multicentre study to provide needed information on the clinical signs and etiological agents of pneumonia, sepsis, and meningitis in infants aged less than 3 months will be initiated. The pharmacokinetics of chloramphenicol in severely malnourished children and of co-trimoxazole in young infants will be established. The safety and efficiency of methods of administering oxygen at small hospitals and bronchodilators at first-level health facilities will be investigated. In the area of behavioural research, the ethnographic instrument for assessing maternal recognition of pneumonia, home treatment, and care-seeking will be tested. Studies are planned to evaluate the effectiveness of the ARI case management strategy when it is carried out within national programmes; to solve the methodological problems involved in developing a household morbidity and treatment survey instrument; and to evaluate methods of monitoring the pneumonia case-fatality rate.

## 6. PROGRAMME TARGETS FOR 1995

At this early stage in the Programme's development, there is little baseline information of a global nature available to help the Programme to establish targets for the future. It is nevertheless thought to be worthwhile to set targets to assist in planning programme activities. A major target is for operational control programmes to be established by 1995 in all countries with an infant mortality rate greater than 40 per 1000 live births per year; at present, 88 countries fall in this category. Another target is to have 50 000 facility-based health workers trained in case management by 1995; this estimate is based on the experience of the Diarrhoeal Diseases Control (CDD) Programme. If the training target is achieved, and improvements occur in the supply and distribution of antibiotics, it is expected that, by 1995, 50% of the population will have access to a trained health worker and a source of free or affordable antibiotics. If national programmes develop as planned, a ("use") target of 40% of cases of childhood pneumonia treated with recommended antibiotics could also be reached. Achievement of these targets will result in a considerable decrease in mortality from pneumonia.

## 7. FINANCIAL MATTERS

The TAG reviewed the 1988-1989 financial report, the revised budget for 1990-1991, and budgetary projections for the 1992-1993 biennium.

### 7.1 Financial report for the 1988-1989 biennium

During the 1988-1989 biennium, the actual obligations amounted to US\$ 4.2 million, which represented 71% of the estimated obligations. The main explanation for the unspent funds is that many contributions were received only late in the biennium; a secondary reason is that some areas of the Programme developed at a slower pace than had been anticipated. As a result, an amount of US\$ 1.8 million was carried forward to the 1990-1991 biennium. This carry-over is however essential to enable the Programme to undertake a number of important activities during the first half of 1990.

### 7.2 Revised budget for the 1990-1991 biennium

A revised programme budget for 1990-1991 has been prepared, taking into consideration

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<sup>1</sup> Document WHO/ARI/RES/90.1.  
<sup>2</sup> Document WHO/ARI/RES/90.2.  
<sup>3</sup> Document WHO/ARI/RES/90.3.

revised estimates of future extrabudgetary contributions, actual obligations in 1988-1989, and the Programme's priorities. The revised budget of US\$ 9.3 million represents an 11% decrease compared with the original budget. Increases are planned at the regional level for training and at the global level for strengthening of the administrative structure. Decreases are planned in most other Programme areas, the most significant being in the development and testing of further training materials and guidelines, regional operations, and support for vaccine trials.

### 7.3 Budgetary projections for the 1992-1993 biennium

Projections for the financial period 1992-1993 total US\$ 10.6 million. This amount represents an 11% increase over the revised 1990-1991 budget, mainly to allow for the costs of inflation, which are distributed equally over all components of the budget, and for increases in support for research.

## 8. CONCLUSIONS AND RECOMMENDATIONS

Based on its review of the current status of the Programme, its more detailed examination of the research management plan, and its follow-up review of the recommendations made at its fourth meeting, the TAG presents the following conclusions and recommendations.

### 8.1 General

8.1.1 In the view of the TAG, the 1988-1989 biennium represented an important transitional period, during which the Programme significantly expanded its human and financial resources and built a solid foundation for its global implementation. The TAG commends the Programme for the rapid progress made in strengthening its scientific bases and in developing managerial instruments such as technical guidelines, training materials, and appropriate technology, and welcomes the increased support provided to ongoing country programmes.

8.1.2 The TAG notes with satisfaction the close integration of services and research activities within the Programme, which has led to the formulation of focused research priorities related to important policy questions on ARI control. This is exemplified by the fact that some decisions in respect of important revisions in the technical guidelines were directly influenced by the results of research studies supported by the Programme. The TAG encourages the Programme to maintain this close inter-relationship between services and research activities. This is consonant with the recent recommendations of the Commission on Health Research for Development.

8.1.3 The TAG understands that a document presenting the Programme's strategies and activities will be submitted to the Executive Board and the World Health Assembly in 1991 during discussions on the WHO Proposed Programme Budget for the Financial Period 1992-1993. It urges the Governing Bodies to emphasize the high priority that should be given to ARI control in the effort to attain the child survival objectives of the Health for All strategy, and to encourage Member States and international and bilateral agencies to undertake concerted action to reduce mortality from pneumonia in children.

8.1.4 The TAG endorses the target of a one-third reduction in mortality from pneumonia in young children by the year 2000 recommended by the Programme and adopted by the Bellagio IV Conference organized by the Task Force for Child Survival in Bangkok on 1-3 March 1990. It hopes that the growing interest in the control of ARI among developing countries and donor agencies will mobilize sufficient national and international resources for the achievement of this target. In this regard the TAG requests the Programme to present to its sixth meeting a plan for the expansion of management, services, and research staff at the global, regional, and country levels up to the end of 1995.

8.1.5 The TAG welcomes the close collaboration between WHO and UNICEF in promoting ARI

policies and implementing global, regional and country activities. It endorses in particular the joint support given to national programmes, and the uniform recommendations in respect of drugs and equipment. It encourages the Programme to sponsor and provide full technical assistance to the First International Conference on Control of Acute Respiratory Infections, tentatively scheduled to be held in December 1990.

## 8.2 Health services component

### 8.2.1. Technical policies

8.2.1.1 The TAG agrees with the modifications so far introduced into the technical guidelines on case management, especially the new definitions of the two key signs for the clinical diagnosis of pneumonia in children, i.e., fast breathing and chest indrawing. It understands that the modifications are based on data obtained from a variety of country settings and research studies, and endorses the approach of obtaining results from a sufficient number of observations before major modifications are made in global guidelines.

8.2.1.2 The TAG concurs with the cautious approach of the Programme in delaying policy decisions related to potential preventive strategies until a thorough analysis of their feasibility and cost-effectiveness has been completed. It recognizes that the relationship between the various risk factors identified and pneumonia incidence is complex, and that it is not possible at present to predict with any certainty the likely impact of risk factor reduction on subsequent pneumonia incidence.

### 8.2.2 Programme implementation

8.2.2.1 The TAG notes with concern that insufficient progress has been made in the African Region in the planning and implementation of national control activities. Although it recognizes that there may be a number of understandable factors to account for this situation, such as other competing health problems and financial constraints, the TAG urges the Programme to increase the efforts and resources required to ensure a more rapid development of control activities in this Region.

8.2.2.2 The TAG endorses the decision to develop appropriate health technologies in four areas: sounding timers, oxygen concentrators, footpump nebulizers, and durable otoscopes. However, the TAG recognizes that the cost of these technologies may be beyond the resources of many country programmes, thus limiting their use on a national scale. The TAG recommends that guidelines for the maintenance and replacement of equipment be formulated by WHO and other collaborating agencies before these technologies are actively promoted.

8.2.2.3 The TAG agrees with the emphasis given to face-to-face communication methods in the first stages of ARI country programmes and highlights the need for ethnographic studies to provide information that will facilitate the composition of messages and the development of communication guidelines for peripheral health workers.

8.2.2.4 The TAG reaffirms that, because of the magnitude of the problem, ARI control should be organized as an integrated programme within the primary health care system, implemented in close coordination with national programmes for essential drugs, diarrhoeal diseases control, and other child survival initiatives.

8.2.2.5 The TAG recommends that data be collected on the costs and cost-savings involved in implementing ARI programme activities. It also suggests that cost-effectiveness studies be undertaken as soon as the necessary data are available. Such studies may be important to convince health administrators of the value of ARI programmes.

### 8.2.3 Training

8.2.3.1 The TAG welcomes the completion of the Programme Managers' Course and the

Supervisory skills training module on the management of the young child with an acute respiratory infection, and encourages the Programme to complete as soon as possible the five technical review papers that are under preparation. The TAG recommends that all national ARI programme managers be invited to take the Programme Managers' Course within the next two years.

8.2.3.2 The TAG notes with satisfaction the emphasis placed by the Programme on clinical training for staff at first-level health facilities and first referral hospitals, and endorses the plan to develop guidelines and training materials for ARI training units (ATUs).

8.2.3.3 The TAG considers that the teaching of correct case management in medical schools and other institutions for the training of health workers should be seen as an important Programme activity. It encourages the development of materials for this purpose and believes that this process can be facilitated by the establishment of ATU's under the responsibility of the Departments of Paediatrics in teaching hospitals.

8.2.3.4 The TAG endorses the Programme's plans to develop prototype materials for use in training community health workers. Emphasis should be given to close supervision and monitoring of the performance of community health workers after their training.

8.2.3.5 The TAG appreciates the importance of "ARI News" in disseminating information on case management among health administrators, general practitioners, nurses, and other health workers in developing countries. However, it is concerned to note that, owing to a lack of financial resources, circulation of the English version is very limited and publication of the French was discontinued in 1988. The TAG encourages the Programme to invite multilateral and bilateral agencies to make direct contributions in support of the newsletter to the publisher (Appropriate Health Resources and Technologies Action Group [AHRTAG], London, United Kingdom).

#### 8.2.4. Evaluation

8.2.4.1 The TAG endorses the efforts that are under way to develop simplified and indirect methods of estimating overall mortality in young children. It encourages the Programme to continue to collaborate with the School of Tropical Medicine and Hygiene in London in developing a valid methodology for the measurement of ARI-specific mortality. The TAG recognizes the difficulties inherent in this approach and suggests that indirect process indicators and case-fatality rates may be useful additional measurements.

8.2.4.2 The TAG is favourably impressed with the data that have emerged from a few national programmes documenting a reduction in the inappropriate use of antibiotics by health workers after training in ARI case management. It believes that such data can have an important influence on estimates of the cost-effectiveness of ARI programmes, and recommends that these achievements be publicized.

8.2.4.3 The TAG is aware of the difficulties currently faced by national programmes in measuring access to and use of correct case management. It urges the Programme to continue its efforts to develop practical means of measuring these essential indicators and to produce a simple country programme profile for use by countries in reporting the status of their programme.

8.2.4.4 The TAG emphasizes the importance of establishing valid national surveillance systems to monitor Streptococcus pneumoniae and Haemophilus influenzae isolates obtained from cases of community-acquired pneumonia for resistance to the antibiotics recommended by the ARI Programme. It commends the Programme for the action taken to establish appropriate epidemiological and laboratory methods for such surveillance and to develop a manual describing these methods. It endorses the Programme's efforts to compare the antimicrobial sensitivity of nasopharyngeal and invasive strains of S. pneumoniae and H. influenzae; if the sensitivity is comparable, this would help to simplify surveillance.

### 8.3 Research component

#### 8.3.1 General

8.3.1.1 The TAG congratulates the Programme on the excellent progress made in addressing its research priorities in the past year. It recognizes that this has been achieved with only limited human resources and emphasizes the need for the Programme to have sufficient manpower to carry out all the activities in the research workplan successfully.

8.3.1.2 The TAG recognizes that a delay in initiating some of the research activities has been unavoidable owing to the limited manpower available, difficulties in identifying and recruiting research teams, and the emphasis appropriately given to the development of detailed specific methodologies prior to the implementation of projects. It endorses the planned expansion of research activities in the coming year.

8.3.1.3 Having reviewed the projects supported during the 1988-1989 biennium, the TAG notes with satisfaction the emphasis given to studies in developing countries. It recognizes that the use of commissioned as well as non-commissioned studies has helped to make this possible. The TAG looks forward to receiving an annual review of the status of completed and ongoing projects.

#### 8.3.2 Research management plan

8.3.2.1 The TAG endorses the proposed research management plan. It notes with satisfaction that the plan makes it easier to obtain rapid answers to priority research questions yet assures adequate peer review and accountability. The TAG agrees to review funding decisions and progress reports of studies as required. It would like to evaluate the functioning of the management scheme at its next meeting.

8.3.2.2 The TAG commends the Programme for the rigour of the methodology, data management, and statistical analysis being applied in its current studies. It recommends that the Programme continue to ensure that results are promptly disseminated to other research groups and to national programmes.

8.3.2.3 Although the limited research budget currently does not permit institution strengthening grants or training fellowships, the TAG considers that many of the Programme's research projects have provided developing country investigators with pertinent training in study methods, data management, and other technical skills.

#### 8.3.3 Research priorities

8.3.3.1 The TAG reaffirms its support for the focused research priorities identified at its last meeting. It reiterates its view that highest priority should be given to important case management topics and to behavioural research. It approves the priority attention given to the validation of evaluation methods in view of the need for these in national programmes.

8.3.3.2 The TAG particularly welcomes the initiation of a multicentre study of clinical signs and etiological agents of pneumonia, sepsis, and meningitis in young infants. It recommends that adequate attention be paid to the relative roles of prematurity and intrauterine growth stunting in placing low-birth-weight infants at high risk for serious bacterial infections. The TAG also recognizes the importance of demonstrating programme efficacy in infants under 2 months of age, since the ARI intervention studies and the former treatment protocol did not adequately address the case management of acute lower respiratory infections (ALRI) in young infants. Where possible, these results should be compared with those obtained in the original intervention studies in this age group.

8.3.3.3 The TAG recommends that risk factor studies be limited to those that stand a good chance of identifying factors that are modifiable and affect pneumonia incidence or severity. Effective study methodologies to identify these factors need to be identified.

Studies that explore the variation in ARI and ALRI incidence among different groups of children may help to elucidate these risk factors.

8.3.3.4 The TAG approves the Programme's plan to play a technical and coordinating role in any future field studies of vaccines against S. pneumoniae and H. influenzae infections. Given the limited financial resources, large sums should not be devoted to vaccine trials.

#### 8.4 Programme targets for 1995

8.4.1 The TAG endorses the targets proposed by the Programme for 1995: to establish operational programmes in all countries with an infant mortality rate greater than 40 per 1000 live births; to train 50 000 facility-based health workers in case management; to increase to 50% the rate of access of the population to correct case management; and to increase to 40% the percentage of childhood pneumonia cases treated with recommended antimicrobials. The TAG appreciates the efforts being made to develop instruments to measure progress in the achievement of these targets and hopes that these will be made available to national programmes during the 1990-1991 biennium.

8.4.2 In view of the importance of formulating targets related to the main mortality reduction objective of the Programme, and the endorsement it has given to the target for the reduction of mortality from pneumonia by the year 2000 adopted by the Bellagio IV Conference of the Task Force for Child Survival (see 8.1.4), the TAG requests the Programme to formulate more explicit mortality targets.

8.4.3 The TAG recognizes that the proposed targets, though closely related to services activities, are in fact targets for the whole Programme. It suggests that the Programme formulate clear research goals to help in assessing the achievements of the research component.

#### 8.5 Budgetary matters

8.5.1 Having reviewed the resources received and the actual obligations incurred by the Programme during the 1988-1989 biennium, the TAG recommends that the Programme present to the MIP an explanation for the variation among the regional offices in the utilization of their allocated budget.

8.5.2 The TAG approves the revised budget of US\$ 9.3 million for 1990-1991, which it understands reflects a realistic projection of future extrabudgetary resources. It notes that about 19% of the budget is the product of funds carried over from the 1988-1989 budget and that this carry-over is necessary to cover expenses in the first six months of the current biennium.

8.5.3 The TAG endorses the relative proportions proposed for services and research activities in the revised 1990-1991 budget. Although the amounts for research have been diminished by about 20% in comparison with the original budget, the revised research budget is about three times greater than the sum actually obligated in 1988-1989, and accounts for 40% of global extrabudgetary funds.

8.5.4 The TAG agrees in general with the budget projections for the 1992-1993 biennium, given the anticipated level of resources. It hopes that additional resources can be realized, and that the activities of the Programme can be increased.

#### 9. SIXTH MEETING OF THE TECHNICAL ADVISORY GROUP

The TAG expresses its satisfaction with the format of the fifth TAG meeting and recommends that the Chairman report on its outcome to the sixth meeting. The TAG reaffirms its decision to meet in Geneva on 11-15 March 1991.

The TAG requests the Programme to plan an agenda for the sixth TAG meeting, in

consultation with the Chairman, by the end of September 1990. It suggests that the following topics be considered: research priorities and a progress report on research activities, Programme targets for 1995, collaboration with other agencies, and integration and decentralization of Programme activities.

The TAG recommends that the Programme explore the possibility of enlarging the responsibilities of TAG members by assigning certain tasks to them during the year, or by arranging for them to review specific aspects of the Programme in connection with their attendance at the TAG meeting.

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