



# WHO

REGIONAL OFFICE FOR EUROPE

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SCHERFIGSVEJ 8  
DK-2100 COPENHAGEN Ø  
DENMARK  
TEL.: (45) 39 17 17 17  
TELEFAX: (45) 39 17 18 18  
TELEX: 15348

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## *DIPHTHERIA CONTROL IN THE RUSSIAN FEDERATION*

Report on a WHO Meeting

Moscow  
20 May 1994

## TARGET 5

### REDUCING COMMUNICABLE DISEASE

*By the year 2000, there should be no indigenous cases of poliomyelitis, diphtheria, neonatal tetanus, measles, mumps and congenital rubella in the Region and there should be a sustained and continuing reduction in the incidence and adverse consequences of other communicable diseases, notably HIV infection.*

### Keywords

DIPHTHERIA – prevent/control  
IMMUNIZATION  
RUSSIA

**DIPHTHERIA CONTROL IN THE RUSSIAN FEDERATION**  
**REPORT OF A MEETING HELD IN MOSCOW 20 MAY 1994**

**SUMMARY**

A meeting was held in Moscow on 20 May to discuss the current epidemic of diphtheria in Russia. A plan of action to control the epidemic proposed by the Russian Ministry of Health, was agreed and costed, and a draft resolution adopted. Seven areas will be tackled:

1. Achieve a high level of immunisation coverage against diphtheria for people in all regions.
2. Establish and introduce a system of information on how to prevent diphtheria (social mobilisation)
3. Train groups of health personnel in the diagnosis, clinical aspects, epidemiology and prevention of diphtheria.
4. Ensure modern levels of output and quality control of preparations used in the diagnosis, treatment and prevention of diphtheria.
5. Organise an effective system for transporting and storing vaccines ("cold chain").
6. Improve the system of epidemiological surveillance of diphtheria.
7. Carry out applied research on the diagnosis, epidemiology and prevention of diphtheria.

## **1. INTRODUCTION.**

An epidemic of diphtheria has been in progress in the Russian Federation since 1990. Attack rates are continuing to rise and 15,210 cases (10.2 per 100 000 population) and 468 deaths were recorded in 1993

The purpose of the meeting was to reach consensus on the National Plan of Action on diphtheria control in the Russian Federation, including an agreement on support of its implementation from international organisations and donors. Participants included representatives from the Russian Ministry of Health, the Russian State Committee on Sanitary Epidemiological Surveillance, the Russian vaccine industry, the World Health Organisation (WHO), USA ID, The Red Cross, The European Union, the Netherlands Ministry of Health and observers from the US Centres for Disease Control and the US Food and Drug Administration. It was particularly noteworthy that the Russian delegation included the Minister of Health, who opened the meeting and set the tone for an open, collaborative discussion. Dr Vaganov (Deputy Minister of Health) and Dr Macfadyen (WHO Euro) acted as Chairpersons for the meeting, and the rapporteur was Dr Begg (WHO temporary adviser).

A list of the participants is shown given in Appendix 1.

## **2. SITUATION ANALYSIS**

This was presented by Dr Monisov, Deputy President, State Committee on Sanitary Epidemiological and Surveillance. Before the introduction of routine diphtheria vaccination, the annual incidence of diphtheria in the Russian Federation was between 55 and 95 per 100 000 population. Routine vaccinations was introduced during the 1950s, and the disease declined rapidly. By the 1970s diphtheria had almost disappeared completely. Since 1980, however, there have been two upsurges: a small increase in 1983-85, and the current increase which began in 1990 and has now reached epidemic proportions.

It is of note that the index case in the present epidemic was a soldier who had recently returned from Afganistan a country where diphtheria is common.

In comparison with the average rate over the previous 10 years, the level of morbidity was 1.6 times higher in 1990, 2.6 times higher in 1991, 5.2 times higher in 1992 and 20 times higher in 1993. In 1993, 15 210 cases of diphtheria were recorded (giving a rate of 10.2 per 100 000 population), of which 4500 were among children (12.5 per 100 000 population).

The disease has spread to almost all areas of the country, with the highest level of morbidity seen in the past two years in 15-20 areas, where 70% of the total number of patients are recorded.

These areas are mainly major cities and industrially developed and densely populated regions. In a number of them, morbidity rates are 2-6 times higher than the average for Russia as a whole. Among those who have contracted the disease, 70-72% are adults, mainly aged 30-50 years, although the morbidity rates among children of all ages has been higher than that among adults. The group of children worst affected are schoolchildren aged 7-14 years.

The disease is mainly caused by highly toxic strains of the diphtheria pathogen of the Gravis biotype; an increase is being seen in severe clinical forms of the disease and fatal outcomes. In the period 1990-1993, more than 700 people (including over 150 children) died from diphtheria, with 468 (83 children) dying in 1993 alone; the mortality rate has almost tripled in the past two years (1993 - 0.3/100 000).

The main cause of the diphtheria epidemic in Russia is the low level of preventive vaccination coverage of children over a long period and, related to this, an inadequate level of immunity among older age groups. In different years, vaccination coverage of children up to two years of age has thus not exceeded 70-80% (1992 - 72.6%, 1993 - 79.2%), with rates in various regions ranging from 60% to 90%. Data from sample surveys show that more than 60% of the adult population do not have antibodies to the diphtheria pathogen.

This situation has been complicated as a result of unjustifiably broad medical contra-indications to immunisation, the unsatisfactory health status of children and primarily of infants, unsatisfactory work on educating the public about the effectiveness of specific means of preventing infectious diseases, and the inadequacy (in a number of cases) of physicians' qualifications in matters of preventive vaccination, as well as a campaign in the mass media to discredit vaccinations. Factors encouraging the wide spread of the disease include uncontrolled population migrations, as well as the consequences of the unstable socioeconomic situation in the country. The vaccine used and produced in Russia appears to be of adequate potency and meets WHO standards.

### **3. ACTION TAKEN TO DATE**

A number of organisational and practical measures have been taken in recent years with the aims of preventing and controlling diphtheria in Russia.

A federal targeted programme of preventive vaccination has been drawn up and endorsed by the government of the Russian Federation and is now being put into effect. A sum of 1.9 thousand million roubles was allocated by the government for carrying out measures at federal level in 1993, as well as 2.5 thousand million roubles for implementing emergency measures to prevent diphtheria infection.

In the majority of regions, corresponding immunisation programmes have been drawn up and are being put into effect, with funding from local budgets. Steps have been taken to organise the centralised payments, from federal budget funds, for vaccines against diphtheria and other "target" diseases.

In accordance with a decision issued by the country's Chief Medical Officer of Health, mass immunisation of the population has been carried out since the beginning of 1993.

On the subject of the organisation of epidemic control measures, a joint decree was issued by the Ministry of Health of the Russian Federation and the State Committee for Sanitary and Epidemiological Surveillance in October 1992, followed by another decree by the State Committee for Sanitary and Epidemiological Surveillance of the Russian Federation in November 1993. In the same year, a joint plan of action by health care bodies and establishments and the national sanitary and epidemiological surveillance service on organising mass immunisation was drawn up and a number of guidelines\standards (on the treatment of diphtheria patients, a "standard case definition", etc.) were issued. Meetings of physicians\epidemiologists on implementing the federal programme of preventive vaccinations were held in the cities of Pskov and Chelysbinsk in 1993, while an international meeting on diphtheria prevention and control in Europe was held in St Petersburg.

Medical contraindications in administering vaccinations against diphtheria have been reviewed and reduced, and fresh impetus has been given to work by medical personnel with the mass media and the public on providing information about vaccinations and the prevention of diphtheria. Operational information on morbidity, fatal outcomes and the number of vaccinations given has been introduced at federal level. An interdepartmental central operational unit on diphtheria control has been set up at the Ministry of Health and the Medical Industry of the Russian Federation and holds monthly working sessions.

As a result of the measures carried out, the number of those vaccinated against diphtheria in 1993 amounted to 20.2 million people; 13.5 million adults were vaccinated, twice as many as in the previous year. Vaccination coverage of children up to 2 years of age increased from 72.6% in 1992 to 79.2% in 1993, and the number of regions where this rate was higher than 85% increased by 1.8 times. The coverage rate of adolescents aged 16 years increased from 80.2% in 1992 to 86.5% in 1993.

In the first four months of 1994, a downward trend in morbidity has been seen (December 1993 - 2536 cases, January 1994 - 2162 cases, February - 1962 cases, March - 1912 cases, April - 1203 cases).

#### **4. PLAN OF ACTION FOR THE PREVENTION AND CONTROL OF DIPHTHERIA IN RUSSIA, 1994-5**

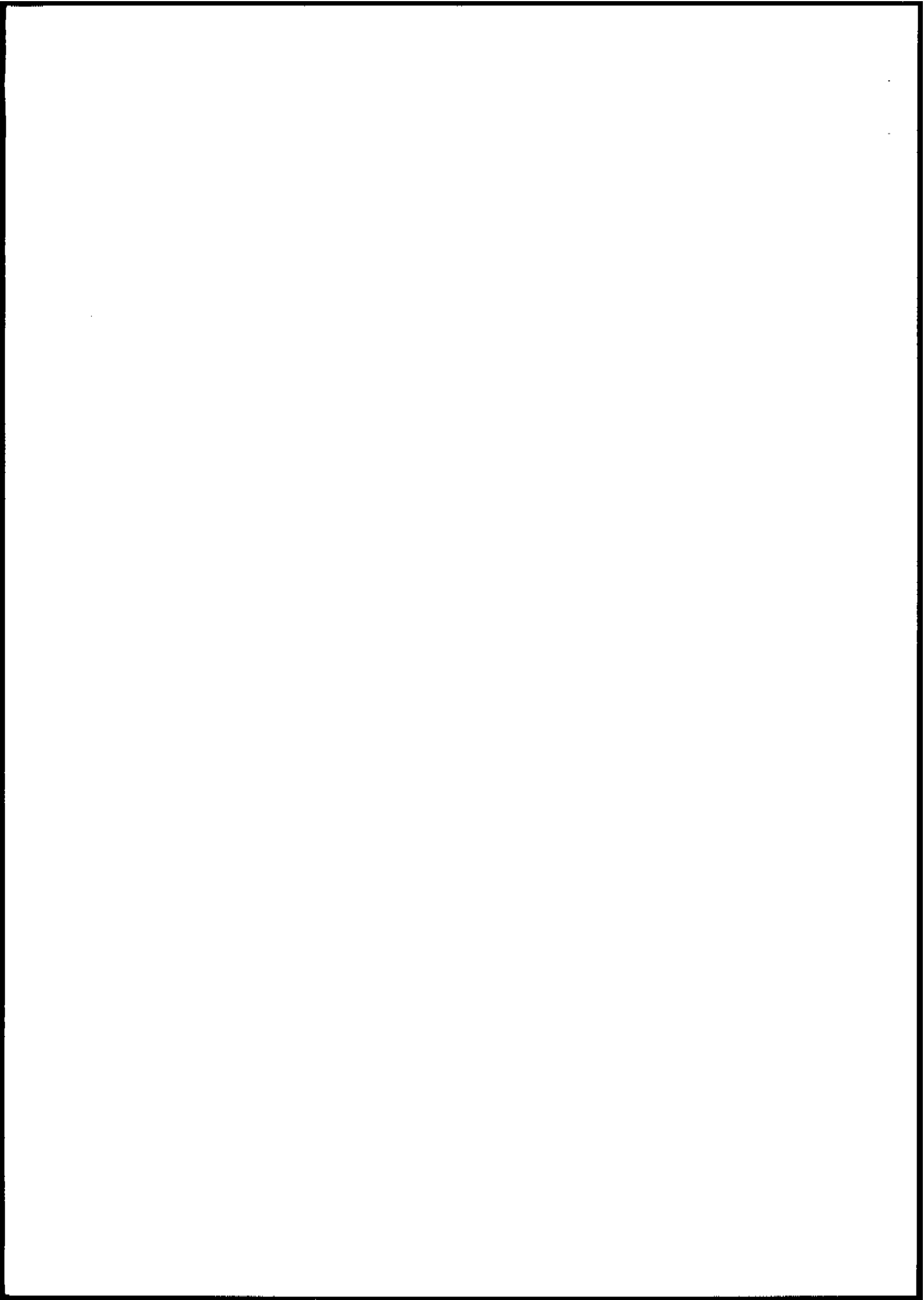
The overall goal of the plan is to reduce diphtheria and mortality. To achieve this goal, it was agreed that seven areas should be tackled:

1. Achieve a high level of immunisation coverage against diphtheria for people in all regions.
2. Establish and introduce a system of information on how to prevent diphtheria (social mobilisation)
3. Train groups of health personnel in the diagnosis, clinical aspects, epidemiology and prevention of diphtheria.
4. Ensure modern levels of output and quality control of preparations used in the diagnosis, treatment and prevention of diphtheria.
5. Organise an effective system for transporting and storing vaccines ("cold chain").
6. Improve the system of epidemiological surveillance of diphtheria.
7. Carry out applied research on the diagnosis, epidemiology and prevention of diphtheria.

Consensus was reached on all seven areas. The funding requested for each activity is shown in Appendix 2. A significant proportion of the external funding sought is for modernisation of vaccine and antiserum production facilities. The Russian Ministry of Health was requested to provide further details of this component of the plan in order that donor agencies can calculate the potential effectiveness of this measure.

Other areas of discussion focused on the implications of introducing compulsory vaccination and the need for well defined managements for implementation of the plan. In particular it is important to identify which agency will hold the budget.

Finally, a resolution was formally adopted (Appendix 3)



Appendix 1

**Meeting on diphtheria control in the Russian Federation**

**Moscow, 20 May 1994**

**LIST OF PARTICIPANTS**

**RUSSIAN FEDERATION**

**Ministry of Health and Medical Industry**

Dr E.A. Netchajev  
Minister of Health

Chadarzev OS

Fedorov Ju M

Dr N.D. Juschuk  
Chair of Infectious Diseases  
Moscow Stomatological Institute

Karpeyeva EE

Dr R.I. Khalitov  
Head, Directorate for Prevention

Konowaltschuk PV

Dr M.I. Narkevitch  
Deputy-Head of Directorate for Prevention

Dr M.Kh. Turjanov  
Chief Expert on Communicable Diseases

Tymtschakovskaya IM

Dr N.N. Vaganov  
Deputy Minister

**Russian Government, Health Division:**  
Tscherepanov VM

**State Committee on Sanitary Epidemiological Surveillance**

Dr A.A. Jassinski  
Head  
Department of Programme Implementation

Dr E.A. Kotova  
Deputy-Head of Department

Dr A.A. Monisov  
Deputy President

Sadownikova VN

Savinich A

Wedicheva MM

**WORLD HEALTH ORGANIZATION**

**Headquarters**

Dr J.W. Lee  
Director, Global Programme for Vaccine

**Regional Office for Europe**

Dr David Macfadyen  
Director, Programme Management

Dr Colette Roure  
Regional Adviser, Communicable Diseases

Dr Mark S. Tsechkovski  
Director, Disease Prevention and Quality of Care

**TEMPORARY ADVISER**

Dr Norman Begg  
PHLS Communicable Disease Surveillance Centre  
61, Colindale Avenue  
London, NW9 5EQ  
United Kingdom

Telephone:  
Telefax 44 81 2007868

**GOVERNMENTAL AND NON GOVERNMENTAL ORGANIZATIONS**

Fridrichs M  
Embassy of Germany in Russia

Pozchwiryan  
Embassy of Japan in Russia

Dr J.K. van Wijngaarden  
Medical Officer of Health  
for Infectious Diseases  
Department of Health  
P.O. Box 5406 or 3008  
2280 MK Rijswijk  
The Netherlands

Telephone 31 70 3407911  
Telefax 31 70 3405394

**USAID**

Dr J.W. LeSar  
Senior Health Advisor  
USAID  
Moscow  
Russian Federation

Telefax: 7095 205 2813

Dr Nikita  
USAID  
Moscow  
Russian Federation

Dr Alexis Ioann Shelokov  
USAID, ENI-NIS, DIHHR  
Department of State  
Washington, D.C. 20523  
USA

Telephone:  
Telefax: 1 202 736 7750

**European Union Office**

Ms Hilary Mackay  
European Union Office  
Moscow  
Russian Federation

**INTERNATIONAL FEDERATION OF RED CROSS  
AND RED CRESCENT SOCIETIES**

Dr H. Sandbladh  
Regional Health Delegate  
Cheremushkinskaya, 15  
109028 Moscow  
Russian Federation

Telephone: 7 095 230 6620  
Telefax: 7 095 230 6622

Dr Carol Jacobsen  
IFRC  
Moscow  
Russian Federation

## OBSERVERS

### Russian Medical Academy for Postgraduate Training:

Bokov MM  
Ivanenko IP  
Jermakov VV  
Kasparova T Ju  
Kovaleva EP  
Mkrtshan SV  
Simkina ES  
Tscherkassova OD  
Vartanjan FE

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Dr V.P. Gansenko  
President

Professor V.I. Pokrovski  
President RAMS "Immunogen" Vaccine Production Industry

Dr N.T. Tukhonova  
Deputy-Director of the Epidemiology and Microbiology Research Institute named after  
Gabrichevski-Russian Academy of Medical Science

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Arsentjev D Ju  
Bakina AM  
Bektimirov TA  
Belizkij VI  
Chisomov AI  
Debatov OD  
Frolov VV  
Ivanenko IP  
Ponomarjeva EV  
Repin Ju I  
Rybkina IN

Radio Russia  
Itar-Tass  
Tarassevich Institute:  
TV Ostankono 'Medicine for you'  
Medizin heute  
"  
Offenes Radio  
Chair of Epidemiology  
Volkszeitung und Moskauer Pravda  
Russian Association Epid-Biomed  
Moscow Center for Epidemiological Surveillance

---

Bascom F. Antony, M.D.  
Dr I. Eranova  
Dr Flemming Lyrdal  
Jain Hardy, M.D.

Director, Division of Bacterial Products FDA  
IFRC  
ULHCR (LFRC)  
Medical Epidemiologist, National Immunization Programme,  
Centre Disease Control and Prevention,  
Atlanta, SA, USA

Faiz Henni  
Vedisheva M.M.

Assist 24  
Assistant of Committee Chairman  
Presse-Secretary of Committee Chairman

## Appendix 2

<b>BUDGET SUMMARY</b>		
<b>Russian Federation Extra-Budgetary</b>		
<b>Activity</b>	<b>Roubles (millions)</b>	<b>US\$ (000s)</b>
1. Achieve high levels of immunization	15825.0	-
2. Develop and implement programmes for social mobilization	600.0	500.0
3. Train health care personnel	215.0	835.0
4. Ensure production and quality of diphtheria toxoid and other preparation	6215.0	7360.0
5. Organize an effective "cold chain"	180.0	420.0
6. Improve epidemiological surveillance	1000.0	1750.0
7. Undertake applied research	310.0	170.0
<b>TOTAL</b>	<b>24345.0</b>	<b>11035.0</b>

## Appendix 3

### RESOLUTION

The participants in the meeting on diphtheria control in the Russian Federation, Moscow, 20 May 1994,

Aware of the fact that the current diphtheria in the Russian Federation and in the eastern countries of the European Region, must be considered as most serious, and make coordinated support for the affected countries an international priority.

Recall regional HFA strategy adopted by the Regional Committee in 1984, whereby there should be no indigenous diphtheria by the year 2000.

Noting the political will of the Government of the Russian Federation to control diphtheria in the Russian Federation by investment of adequate human and financial resources.

Call on the international community to support its action, which comprises a number of control measures, such as:

- high immunization coverage against diphtheria in target groups no less than 95% coverage with primary immunization by 2 years of age by 1996
- no less than 95% coverage of schoolchildren and adolescents with diphtheria revaccinations (by 1996)
- no less than 80% coverage of the adult population, giving priority to high incidence areas and members of risk groups;

establishment and introduction of a system of information in support of prevention of diphtheria and respective social mobilization and training of health personnel on prevention and control of the disease

guarantee of modern level of production and quality control of preparations used for diagnosis, prevention and treatment of diphtheria and organization of effective "cold chain system"

improvement of the system of epidemiological surveillance and adequate control measures of diphtheria cases and outbreaks,

Endorse the commitment of the Government of the Russian Federation and the Regional Office for Europe of the World Health Organization to the control of diphtheria in the Russian Federation by the year 1996;

Urge that the control efforts should be based on:

- the national Plan of Action for the prevention and control of diphtheria in the Russian Federation (1994-1995) and
  
- WHO's Plan of Action for the prevention and control of diphtheria in the European Region (1994-1995)

Invite international agencies, governmental and non-governmental organizations to support the implementation of the Action Plan of the Russian Federation in providing technical and financial assistance.