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**INTERNATIONAL PROGRAMME ON THE HEALTH
EFFECTS OF THE CHERNOBYL ACCIDENT
(IPHECA)**

**REPORT OF THE
MANAGEMENT COMMITTEE MEETING
GENEVA 16-17 MARCH 1994**



WORLD HEALTH ORGANIZATION, GENEVA

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REPORT OF THE IPHECA MANAGEMENT COMMITTEE

GENEVA 16-17 MARCH 1994

I. INTRODUCTION

1. In May 1991 the World Health Assembly endorsed the establishment of the International Programme on the Health Effects of the Chernobyl Accident (IPHECA) under the auspices of WHO. IPHECA is a cooperative effort between the three most affected countries - Belarus, Russian Federation and Ukraine, WHO and a number of other countries and organizations. In the initial stages the priority of IPHECA was to facilitate efforts to relieve the health consequences of the accident by assisting the health authorities in the affected countries and especially in areas significantly contaminated by radionuclides, through provision of equipment, training, expert advice and exchange of information. However, there has been considerable work to achieve other major objectives of IPHECA: to consolidate scientific knowledge on the health effects of the accident; and to improve the medical preparedness for handling any future nuclear accidents, using as a basis the Chernobyl experience.

2. Four pilot projects are underway in the study territories (related to the former "strictly controlled zones" or "SCZs") of the three countries. These pilot projects deal with the detection and treatment of leukaemia and related blood diseases (Haematology project), thyroid disorders (Thyroid project), brain damage during exposure *in-utero* (Brain Damage *In-Utero* project) and with the development of Chernobyl registers (Epidemiological Registry project). A fifth pilot project on Oral Health is being carried out only in Belarus, but was not discussed by the Management Committee. IPHECA is financed solely through extrabudgetary resources which to date amount to slightly more than US\$ 20 million. In addition to the major contribution from Japan, financial resources have been provided by the Czech Republic, Finland, Slovak Republic and Switzerland.

3. Management of IPHECA is vested in the Management Committee which was established by the Director-General of WHO. The Management Committee comprises representatives of the participating Ministries of the three affected countries, WHO, and representatives of countries who have donated funds to WHO for use in the Programme. Certain international agencies attend the Management Committee as observers.

The Management Committee:

- (i) reviews and approves the annual workplan;
- (ii) establishes appropriate modalities for ensuring that the work of IPHECA is based on scientific grounds with input from international experts;
- (iii) promotes the coordination of all relevant Chernobyl health-related projects, being carried out within the participating Ministries, that are not otherwise incorporated into IPHECA.

4. The first meeting of the Management Committee, held in Kiev, Ukraine, from 5-6 November 1992, approved the 1993 workplan, and considered some managerial and administrative problems in the field of communications, equipment purchase, arrangement of specialist training, conduct of workshops, consultant visits, etc.

5. The second Management Committee meeting was held on 16-17 March, 1994 in Geneva. The meeting was opened by Dr N.P. Napalkov, Assistant Director-General who welcomed the participants. He highlighted the importance of reviewing the current status of IPHECA from organizational, managerial and financial points of view and the necessity to identify further prospective activities which could be conducted within IPHECA. He expressed WHO's appreciation for the contributions which have been received from Japan, Finland, Czech Republic, Slovak Republic and Switzerland. The importance of close cooperation with other international organizations was also emphasized.

6. The agenda for the meeting and the list of the participants is attached as Annexes I and II. Dr W. Kreisel, Executive Director for Health and Environment in WHO served as the Chairman of the meeting with Dr M. Repacholi and Dr G. Souchkevitch from the WHO Secretariat as rapporteurs.

II. REVIEW OF ACTIVITIES TO DATE

7. Status reports on the progress being made in the implementation of IPHECA were provided by the representatives of Belarus, Russia and Ukraine, and the WHO Secretariat. Summaries of these reports are given below. They are divided into general comments from each of the three countries and then the detailed results are combined under each of the pilot projects.

Reports of Belarus, Russia and Ukraine

8. IPHECA is implemented in each of the three countries under the overall direction of a national coordinator and coordinators for the pilot projects in each country. A few leading institutes take responsibility for dealing with all aspects of IPHECA within each country. These institutions compile and analyse the medical information to arrive at scientifically based conclusions. Medical examinations of the population residing in contaminated territories is conducted by teams of specialists. These teams carry out their work in close cooperation with local health authorities. Advanced medical examinations are conducted at the oblast and national levels. Approximately 200 professional staff in the three countries are contributing to the implementation of IPHECA.

9. The implementation of IPHECA in the three countries has been assisted through meetings of temporary expert groups, some with international participation. They have helped to design the programme and to review its implementation and findings. Such groups have also discussed management mechanisms, advanced training needs, equipment requirements, and development of standard protocols to be used by each country.

10. **Belarus** The report of the Belarussian representative noted that IPHECA was dealing with the most important aspects of the accident. Five research institutions and many

medical diagnostic and therapeutic establishments are participating in the programme. The main concern of the Ministry of Health was the situation regarding thyroid cancer among children in the Gomel and Mogilev regions. Widespread screening for thyroid pathology was being carried out in the Republic by teams of specialists. He noted that all cases of haemoblastoses diagnosed on the basis of self-admission or screening were verified by haematologists at the national level. Field teams and specialists had been trained and screen children in the study cohort under the Brain Damage *In-Utero* Project. He stressed the importance of including in the protocol of the Epidemiology Registry Project a section dealing with indicators of health for the study population. Extensive dosimetry studies had been conducted, using standardized approaches, in the study territories. Finally, he emphasized that, thanks to the participation in IPHECA, the level of medical care had significantly improved in the Republic. The Ministry of Health had allocated in 1993 more than 150 million rubles to the programme, and envisaged continuing its financial support in 1994.

11. **Russian Federation** The report of the Russian representative centred on the results obtained from the studies conducted so far, particularly as regards thyroid function and disease of children. While they had not yet concluded that there is a direct relationship between detected thyroid cancers and radiation exposure, recent evidence is being scrutinized for such a relationship. He stressed the importance of being able to compare the data from Russia with those of Belarus and Ukraine. Extensive investigations had also been undertaken with respect to leukaemia and other haemoblastoses. He summarized the organizational set-up for the epidemiological registry project in Russia and the current composition of the data base. It had been significantly extended in 1993. Radiation doses to individuals participating in the pilot projects are being assessed using both physical and biological dosimetry. He informed the Committee that more than 30 scientific papers had been published concerning the implementation of the pilot projects and others were being prepared. He concluded by stating that completion of the pilot phase should lead to the continuation of investigations in all of the areas which the pilot projects are addressing.

12. **Ukraine** The report of the Ukraine representative highlighted the general environmental and health situation in their affected areas. Sampling of water supplies, milk and foods such as mushrooms and berries showed a considerable number exceeding safety standards. He also noted the general deterioration in the health status of the population since 1986/1987. The main goal of the Ukrainian Ministry of Health was to establish a single National Registry of Victims to reconstruct their doses and provide medical and sanitary support for them. A considerable network of medical establishments for treatment of victims had been organized consisting of dispensaries, clinics and a number of specialized departments and hospitals. Thyroid disease was particularly important, having increased substantially since 1986. The IPHECA pilot projects were being implemented by a number of Ukrainian research institutes. The equipment and supplies which had been received were deployed and used both at national and regional levels.

Pilot project results

13. **Thyroid** The thyroid project aims to detect and characterize thyroid cancers, benign tumours, autoimmune thyroiditis, hyperthyroidism and hypothyroidism - all disorders

that, although prevalent in some areas, can also be caused by radiation and whose incidence may therefore increase in the course of time, especially among children living in the most contaminated areas. Altogether, the screening component of the project being carried out in all three countries is expected to include up to 60,000 children. The territories designated for screening comprise: 11 rayons in the Gomel Oblast and 6 rayons in the Mogilev Oblast of Belarus; 6 rayons of the Bryansk Oblast and 2 rayons of the Kaluga Oblast in the Russian Federation; and 3 rayons in each of the Kiev and Zhitomir Oblasts, and 1 rayon in the Chernigov Oblast of Ukraine.

14. In 1992-93, 9 thyroid cancers were confirmed among 15,000 children screened in Belarus. Approximately 250 thyroid cancers have been reported in Belarus since 1989. 3 cases were detected from screening 20,000 children and adolescents in contaminated areas of the Russian Federation, and 4 cases were found in areas under investigation in Ukraine during the period 1992-93. In total, more than 130 thyroid cancers have been reported in Ukraine since 1989. Although thyroid cancer is very important, the screening programme was directed at thyroid disorders in general. For example, in various rayons of Belarus, nodules were found in 0.4 - 3.4% of children examined, autoimmune thyroiditis in 0.7 - 9.2%, and endemic hyperplasia of the thyroid in 14.9 - 50.6%. The screening programme is being continued. For example, in Ukraine, screening of 20,000 children will be completed during the first half of 1994.

15. Belarus reported that individual radioiodine thyroid doses were reconstructed for 130,000 people. The highest thyroid doses were found among those evacuated from the 30 km zone: on average 157 cGy for adults and 400 cGy for children and adolescents. Even higher doses, on average 500 cGy, were received by children under 7 years old. Five percent of these children had a dose higher than 1000 cGy. As a guide to the seriousness of these values, persons receiving doses higher than 300 cGy will have an appreciable risk of getting thyroid cancer and other forms of thyroid pathology.

16. The Russian Federation reported that they had developed a model for evaluation of doses to the thyroid. Using this model and direct measurements, individual absorbed doses have been determined for 27,800 residents, mainly children and adolescents of the radiocontaminated territories of Kaluga and Bryansk oblasts. Absorbed doses to the thyroid as high as 940 cGy have been found, and doses above 200 cGy have been registered in about 3.4% of children.

17. **Haematology** The project aims to detect and treat leukaemias and related blood disorders in the study territories (population of approximately 270 000) of the three countries. Rigorous epidemiological methods are a prerequisite for the eventual detection of what is expected to be a very small excess incidence. The study territories comprise: 11 rayons in the Gomel Oblast and 6 rayons in the Mogilev Oblast of Belarus; 6 rayons of the Bryansk Oblast of the Russian Federation; and 2 rayons in the Kiev Oblast and 3 rayons of the Zhitomir Oblast of the Ukraine.

18. While residents living in areas contaminated with radioactive contamination levels higher than 555 kBq/m² have been examined, none of the national or international haematology programmes in any of the three countries has found any increase in the

incidence of haemoblastoses, including leukaemia, from the levels recorded before the accident, which might be attributed to radiation exposure. This result is in agreement with expectations. As screening is not effective for acute leukaemia, special attention is given to registration of all cases of this disease at self-admission.

19. **Epidemiological Registry** The completeness, consistency, reliability and accessibility of vital statistical, health and social records of the population on an individual basis are essential for the assessment of its state of health, and for the future conduct of epidemiological investigations of any magnitude. For these, detailed radiation exposure histories are also needed.

20. National registries were established in all three countries and a number of registers are currently in operation there. Information on accident recovery workers has also been recorded. The aim of the project is to enhance the effectiveness and comprehensiveness of the system of data recording at all administrative levels (rayon, oblast and national), so as to eventually include reliable relevant data, properly linked, on all individuals in the contaminated and in control areas. For the IPHECA registers to be fully operational and to ensure their speedy accessibility, a major effort of computerization including programming is required.

21. The pilot projects of IPHECA are represented by a subregistry of the national registry in each country. The national registry in Belarus has records of over 150,000 residents and liquidators. In Russia there are records of over 320,000 and in Ukraine over 370,000 residents and liquidators. The register for the Epidemiological Registry project of IPHECA has been composed in accordance with the protocol. About 6800 residents in contaminated territories have been recorded under this protocol in Belarus, over 5000 in Russia and about 38,000 in Ukraine.

22. **Brain damage in-utero** It is planned to examine all children born within one year after the accident whose mothers were evacuated from within 30 km of the accident and those whose mothers lived in areas included in the SCZs (up to 4000 children altogether). Controls numbering up to 5000 will consist of children born in uncontaminated areas matched for age, socio-demographic and educational levels. The investigations, for which a protocol has been adopted, include assessments of mental retardation and of cognitive impairment, anthropometric measurements, neurological and endocrinological assessments, and brain mapping.

23. The number of births in the interval 26 April 1986 to 26 February 1987 within the three countries was estimated to be 7900. Approximately half of these are being examined from "clean areas" where the deposition of radionuclides was less than 37 kBq/m² and approximately half from contaminated areas in 3 subgroups (those living in areas with 37-555 kBq/m², >555 kBq/m², and those who were evacuated from the 30 km zone). However, the actual number of births for study will be less due to migration from the contaminated territories. Children born in contaminated areas as well as their parents are being compared for psychiatric and psychological status with children born in clean areas. The number of children examined in Belarus up to the end of 1993 was 824 in contaminated territories and 1000 in clean areas. The corresponding numbers over the same period in

Russia were 725 and 300 respectively, and 832 and 730 respectively in Ukraine. Preliminary results have shown some differences in behaviour between children exposed in-utero compared with control children.

24. **Dosimetry support activities** At the Centre in Obninsk, Russian Federation, different methods are being used to assess the dose of individuals and the radioactive contamination in the study territories. To evaluate an individual's annual dose from external irradiation, 1200 thermoluminescence dosimeters have been distributed among the population of contaminated areas. 30,000 whole body measurements of ^{134}Cs and ^{137}Cs were conducted on residents living in contaminated rayons during the period 1986 to 1993. The individual doses have also been estimated by ESR-spectrometry of tooth enamel in 1,200 persons from the Bryansk and Kaluga Oblasts. Mean accumulated doses for the whole period since the accident were found to be in the range 13 to 22 cGy. Biological dosimetry based on cytogenetic methods has also been conducted in 668 persons living in the SCZs of Bryansk and 621 persons from Kaluga Oblast. Mean radiation doses for residents of the contaminated territories were found to range from 9 to 14 cSv.

25. In the SCZs of Belarus with radioactive contamination from 555 to 1480 kBq/m² the average doses in the population during the whole period since the accident are in the range from 50 to 60 mSv. The average radiation doses in the population from less than 555 kBq/m² contaminated territories is in the range from 20 to 40 mSv.

26. In 1992 the annual average effective dose for the population in selected territories of Ukraine was found to vary within the range 0 - 3.2 mSv, being composed of 0 - 0.2 mSv from external irradiation and from 0 - 3.0 mSv from internal irradiation. Soil contamination from ^{134}Cs and ^{137}Cs in a few villages was found to vary in the range 1480 - 19,400 kBq/m².

WHO Report

27. WHO's role in IPHECA is to provide support for the consolidation of scientific data, equipment purchase, specialist advanced training, protocol development for each of the pilot projects, programme management and coordination and budget control. The WHO progress report for 1993 is in Annex III. In summary, most items of material and technical support planned for the project areas in 1993 have been acquired. During 1993 WHO acquired equipment and consumables for Belarus totalling US\$ 2.41 million, for Russia - US\$ 2.52 million, and Ukraine US\$ 2.86 million. 93 specialists from the three countries received or were contracted to receive advanced training in 23 separate programmes in various countries in 1993. Six programmes, including the training of seven specialists from Belarus, nine specialists from Russia and nine specialists from Ukraine were carried over to the 1994 workplan.

28. In accordance with the 1993 workplan, WHO convened a meeting in Kiev in October 1993 on thyroid cancer. This meeting discussed the results of all thyroid pathology detected since the accident. WHO also produced a brochure in the Russian language for distribution to people living in the contaminated areas. This brochure described IPHECA and its objectives, and provided factual information on radiation exposure and health. A major goal of the brochure was to alleviate psychological tensions caused by the Chernobyl accident.

Protocols for all the pilot projects were translated into English from the Russian originals.

Discussion of projects

29. It was noted that an inventory of all thyroid cancers will be completed by the end of 1994. All country representatives noted that they would not have been able to conduct their programme to the extent achieved without equipment supplied under IPHECA. The great difference between the number of thyroid cases found in Belarus compared to Russia was noted. There is a need to compare data, especially with respect to use of stable iodine and other factors. It is unclear why the difference exists but this is one of the reasons why this programme must continue after completion of the pilot phase. Russia is currently putting considerable effort into trying to explain the difference. It was noted that thyroid doses were obtained immediately following the accident, but for dose reconstruction after the accident, special methods must be developed and this would be best done under a "dose reconstruction project" as recommended by the Management Committee.

30. To complete the pilot phases of IPHECA, the three countries need more reagents for installed equipment, diagnostic ultrasound facilities designed for rayon level hospitals, high temperature thermoluminescent dosimetry facilities for Belarus and Russia, laptop computers for data collection in the field and Medline scientific information retrieval systems. In addition financial support is also needed for maintenance and repair of installed equipment.

31. The representatives of the three countries confirmed that WHO project protocols, equipment and training programmes have been instrumental in meeting their needs. They emphasized the importance of special studies on dosimetry and recovery workers' health.

III. REPORT ON THE PILOT PHASE OF IPHECA

32. The Management Committee approved the contents and plan of the preparation of the final report on the Pilot Phase of IPHECA. The report is to be completed in two parts in Russian and English:

1. The Main Report
2. The Summary Report

33. The drafts of the two reports will be discussed at a Russian language meeting, then translated and reviewed by international agencies and experts. The final draft will be discussed at an English/Russian meeting and the results presented at an international conference to be held in early 1995. The publication of the report is planned for Spring 1995. It was emphasized that the Report must be published under the auspices of WHO. In addition to these reports, the Management Committee recommended that scientific publications be prepared and sent to international peer reviewed journals, so the results of IPHECA can be more widely disseminated.

IV. WORK PLAN FOR 1994

34. A proposal for activities to be undertaken in 1994 was provided by WHO in a

working paper for Agenda item 4 and its two annexes (see Annex IV to this report). Table 1 in the working paper contained a summary of the proposed utilization of the remaining resources in the amount of US\$2,910,000 among 7 categories as follows:

- | | | |
|------|----|---|
| Item | 1. | 1993 carry-over activities |
| | 2. | New equipment purchases for the pilot projects |
| | 3. | Continuing maintenance support for pilot projects |
| | 4. | Preparation and publication of IPHECA report |
| | 5. | Programme management and coordination |
| | 6. | Programme support costs |
| | 7. | New activities |

35. The specific activities to be undertaken, including procurement of equipment and training, were detailed in the Work Plan for 1994 in Annex II to the working paper.

36. The Management Committee reviewed the proposals for work and use of resources in 1994. Its comments and decisions are summarized in the following paragraphs.

37. As regards items 1 to 3, on the recommendations of the representatives of Belarus, Russian Federation and the Ukraine the procurement of the following equipment and supplies was agreed to (also see para 30 of this report) :

1. Reagents, diagnostic kits, etc. - approx. \$100,000 per country
2. Ultrasound equipment (Hitachi 405 or similar) - 3 per country
3. High temp. TLDs for Belarus and Russia
4. Cytovision units for Belarus and Ukraine
5. Laptop computers for data collection - 6 per country
6. Medline scientific information retrieval systems for each country
7. X-ray machines and syringes - to be supplied by the Czech and Slovak Republics

38. These will be funded from resources identified for items 1 to 3 in the working paper. Included will also be training not carried out in 1993.

39. The proposed allocation of resources for the preparation and publication of a report on IPHECA, including a conference to present the results (item 4 in the working paper) was strongly supported. It was noted that the proposed allocation for this item may be low and that the schedule for producing the report was extremely tight and would put great pressure on each of the three countries to have their contributions in on time.

40. Item 5 on Programme Management and Coordination includes the allocation for day to day operation of the programme (secretarial support, advisory services, duty travel, etc.), coordination with other organizations (including meetings of specialists, etc.), review of results, provision of information and promotion of scientific exchange. This was accepted as necessary for continued smooth operation of IPHECA.

41. Item 6 on Programme Support covers the 13% charge by WHO for all its infrastructure costs to support extrabudgetary activities.

New activities

42. The Management Committee expressed its support for initiating three new activities, i.e. accident recovery workers, dose reconstruction, and thyroid epidemiology, as part of the IPHECA programme which were proposed by the representatives of the three countries. The resources proposed for this purpose, i.e. \$272,000, would be used as "seed money" to support these activities. A brief overview of each of these, together with comments from the Management Committee, are included in the following paragraphs. Also included is a recommendation from the Management Committee for the preparation of guidelines on public health action following nuclear accidents.

43. **Accident recovery workers** The Russian Federation, with the support of Belarus and Ukraine, proposed a new project to evaluate the health status of the workers involved in the clean-up after the Chernobyl accident (these people are called Recovery Workers or Liquidators). These workers, some 800,000 in total (350,000 in Russia alone), received various radiation doses. It has been estimated that about one-third of those who participated in clean-up operations in 1986 received doses in excess of 20 cGy. These people are on registries and an increased morbidity has already been seen. Bilateral projects with specific and limited goals are underway with various countries. There needs to be good coordination to ensure that overlap of activities does not occur. The Russian Ministry of Health will provide a substantial contribution (1 billion rubles). A preliminary protocol already exists which takes account of previous IPHECA protocols.

44. A meeting in St Petersburg to discuss this project is planned for late June 1994. The final date for the meeting will be decided soon. The meeting will be held within the framework of IPHECA with active participation of WHO. WHO in collaboration with the Russian Ministry of Health will be responsible for identifying participants from non CIS countries and extending invitations.

45. In the discussion it was noted that a series of bilateral studies are underway in the three States in collaboration with scientists from several countries. Similar protocols are in use in the epidemiological studies, thus ensuring minimum overlap of activities in this area. Several pilot epidemiological studies on liquidators are underway with EC support and results are expected in 1994-95. These results may be useful in the development of the epidemiological component of the IPHECA protocol. It was agreed that there are a number of areas not covered by existing bilateral agreements, in particular health status of liquidators, treatment and rehabilitation, which could be covered by the IPHECA project. Psychosocial effects in recovery workers must also be addressed. It was clear that additional extrabudgetary resources will need to be mobilized to further support this activity.

46. **Dose reconstruction** Reconstruction of individual radiation doses is needed to:

- estimate the risk of radiation-induced disorders, and
- conduct worthwhile epidemiological and other research.

The experience gained in reconstructing doses may allow health institutions to make informed decisions on follow-up actions needed after radiation accidents. This information would also be valuable to research projects needing to obtain information on doses to groups or individuals.

47. While some dose reconstruction is ongoing for each of the IPHECA pilot projects, this is not being performed under a common protocol. At present there are only a few laboratories around the world which have specialised in various techniques for determining individual doses. A separate project needs to be established that can utilise available technology on dose reconstruction to compare techniques and develop the best available method or methods for determining individual doses. The Management Committee agreed that the project should be well coordinated with on-going bilateral dose reconstruction activities such as those currently being sponsored by the EC, USA and other countries. The terms of reference of the dose reconstruction project would be as follows:

1. Develop a common methodology for dose reconstruction of individuals exposed in contaminated areas.
2. Reconstruct internal and external doses to determine an individual's accumulated dose.
3. Compile an inventory of verified doses of people in Russia, Ukraine and Belarus.
4. Strengthen dose monitoring programmes for people in the 3 countries.
5. Provide the data to research programmes.

48. **Thyroid** There is a significant problem with thyroid disease, including thyroid cancer, particularly in Belarus but also in Ukraine and to a lesser extent in the Russian Federation. The differences in reported prevalence of thyroid disease between the three countries do not appear to be explained by the differences in estimated radiation exposure. This needs to be explained. The IPHECA Thyroid Pilot Project has been instrumental in revealing the extent of the problem and has contributed essential equipment and training in the three countries. It is essential that this basis is utilized in the further development of the activities in this area. A proposal to extend the thyroid pilot project to a long term project was accepted by the Management Committee. Six modules would compose this project and would be carried out as resources become available. These modules would include:

1. Reconstruction of thyroid doses;
2. Continuation of surveillance of the same population as in the pilot project;
3. Expansion of surveillance to areas most affected by radioiodine provided module 1. is feasible;
4. Investigation of thyroid cancer etiology in children;
5. Studying thyroid cancer in adults, provided module 1. is feasible; and
6. Support for local production of diagnostic kits.

49. As part of this effort, the Management Committee endorsed the WHO/EURO initiative on thyroid cancer with Belarus which would; (i) identify groups most at risk, (ii) lead to a better understanding of the nature and cause of the outbreak of the disease, and (iii) assist Belarus to manage the disease. Supported by Switzerland, EURO, which will be responsible within WHO for coordinating this project, has created a WHO Collaborating

Centre in Minsk and six international centres covering the disciplines required for responses to the elevated thyroid cancer incidence in Belarus. An International Scientific Advisory Committee is presently planning a programme of activities based at these collaborating centres. This group will consider all proposals for studies at its second meeting early in the summer of 1994 as an extension to the IPHECA pilot project. Support is needed for the centre in Minsk to provide the necessary equipment and allow it to have a coordinating role in the treatment of this disease within the framework of IPHECA. The Management Committee requested that this WHO/EURO initiative be extended to all three countries. By agreement with Russia and Ukraine, all activities related to thyroid cancer in the three countries would be coordinated through this centre. WHO was asked to seek funding for this project and complete the modules in the plan as resources become available.

50. Guidelines on Public Health Action The Management Committee noted that in line with the finalization of the pilot projects there should be a cost-benefit analysis conducted and recommendations made concerning public health action following disasters such as that at Chernobyl. Was screening the population cost-effective? What emergency measures should be taken? What approach was optimal for investigating the consequences to health in the population? These were some of the questions which needed to be answered. The development of soundly based guidelines on public health action were some of the reasons for conducting research. A proposal to set up a working group to look into this matter was supported by the Management Committee. It was noted that other international organizations would be interested in collaborating in such a working group. A scope and terms of reference needed to be drafted.

51. The Committee was informed that a network of WHO Collaborating Centres of Radiation Emergency Medical Preparedness (REMPAN) had been established to consolidate the experience on emergency medical assistance and mitigation. The representatives of the Centres had held coordination meetings to draw up and agree on action plans.

V. RESOURCE MOBILIZATION

52. During 1993 various activities as described in the working paper had been undertaken to provide information on IPHECA and to solicit support for it. This will be continued in 1994 with renewed representation being provided to ECOSOC and the UN General Assembly as was done previously. Close coordination of activities and of fund-raising efforts by the three countries and WHO was a key to possibilities for raising additional extrabudgetary resources. The forthcoming scientific report on IPHECA and the planned conference should be instrumental in obtaining additional support.

VI. COORDINATION WITH OTHER ORGANIZATIONS

53. International Atomic Energy Agency (IAEA) The representative of IAEA noted that the conclusions and recommendations in IAEA's report on the International Chernobyl Project published in 1991 were still considered to be valid. The IAEA was looking forward to the report on the pilot phase of IPHECA. There was concern that the many projects being implemented under the banner of health effects give a misleading picture on the real effects which had occurred or are occurring. The Committee was informed that the IAEA would

organize an International Symposium on the Chernobyl accident in 1996 to commemorate 10 years after the accident. It would be held in conjunction with the International Radiation Protection Association (IRPA) Congress. WHO will be invited to co-sponsor this Conference.

54. WHO expressed an interest in convening jointly with IAEA, a meeting in May 1994 on the effects of radiation and other factors on the immune system. IPHECA should be represented by an expert from each of the countries and by the WHO Secretariat. This undertaking was supported by the three countries.

55. **United Nations Educational, Scientific and Cultural Organization (UNESCO)** Twenty-five projects are under way, including projects on psychosocial effects, resettlement, language teaching for interpreters, an ecological science network with a coordinating centre in Belarus, and ecological, genetic, social and economic monitoring.

56. **The United Nations Department of Humanitarian Affairs** looks forward to continuing cooperation on this project. The Committee was informed that a new Director had just been appointed.

57. **European Commission** Seven million ECU have been set aside in 1994 for Chernobyl research related projects such as biological dosimetry and dose reconstruction, and training of specialists has also been included in the overall programme. Funds have also been allocated for the purchase of equipment in the three countries. More details will become available in the near future. A conference on the results of the EC research projects is to be held in 1995 in Germany.

VII OTHER BUSINESS

58. There being no further business, Dr Kreisel thanked all participants for their input and advised that the report of the meeting should be available within 2 weeks.

ANNEX I

MANAGEMENT COMMITTEE MEETING 16-17 March 1994, Geneva, Switzerland

Agenda

1. Opening
2. Review of activities to date
 - Belarus
 - Russia
 - Ukraine
 - WHO (activities and programme budget)
3. Report on Pilot Phase (1991-1994) and the progress in its preparation
4. Work plan for 1994
 - 4.1 Discussion of additional requirements for the existing pilot projects raised in national reports - 1993
 - 4.2 Discussions of new proposals
 - Recovery Workers Project
 - Dosimetry Project
 - 4.3 Regular Thyroid Project
 - 4.4 Resource mobilization
5. Coordination with related activities of other International Organizations
6. Other matters
7. Closing

ANNEX II

MANAGEMENT COMMITTEE MEETING 16-17 March 1994, Salle D, WHO, Geneva

List of the Participants

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Dr W. Kreisel, Executive Director

Mr G. Ozolins, Director, Division of Operational Support in Environmental Health

Dr T. Kjellstrom, Director, Office of Global and Integrated Environmental Health

Dr L.L. Prilipko, Division of Mental Health (*could not attend*)

Dr G. Pakhomov, Oral Health (*could not attend*)

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ANNEX III**IPHECA MANAGEMENT COMMITTEE MEETING
16-17 MARCH 1994, GENEVA****AGENDA ITEM 2****WHO Activities on IPHECA Progress Report 1993****INTRODUCTION**

This report summarizes WHO activities related to the implementation of IPHECA pilot projects in 1993. These activities include discharging WHO's role for supporting the consolidation of scientific data; equipment purchase; specialist advanced training; protocol development in each of the projects (thyroid, haematology, epidemiological registry and brain damage in-utero); programme management and coordination and budget. Information concerning meetings and consultations which were held during 1993 is also included.

The "Plan of the Implementation of IPHECA in 1993" (not attached to this report) approved by the Management Committee in its first session in November 1992 in Kiev, was used as the main guide for programme review and for reporting progress in each area.

CLINICAL AND EPIDEMIOLOGICAL INVESTIGATION

The investigations are being conducted by the institutions in the three countries and they will provide information on the progress achieved. WHO's responsibility is to assist their efforts.

An important event was the scientific meeting on thyroid cancer which was convened by WHO in October 1993 in Kiev. Review papers were presented by specialists and the results were thoroughly discussed by national and international experts.

A brochure intended to contribute to the alleviation of psychological tensions caused by the Chernobyl accident was published in the Russian language and distributed to people living in the contaminated areas. The brochure provides factual information on the effects of radiation exposure on health. Approximately 100,000 copies have been distributed in the three States.

PROTOCOLS

Protocols were elaborated to standardize techniques for collection and analysis of data for the pilot projects. All protocols have now been printed in the Russian language and efforts have been devoted to translating the protocols into English for the Thyroid, Haematology, and Epidemiological Registry Projects. The translated drafts have been prepared and they are being compared with the Russian originals for accuracy to be completed in early 1994. The protocol for the pilot project on Brain Damage *In-Utero* already exists in both languages.

While the final Russian language protocols were printed during 1993, the implementation of clinical component of the protocols was started in mid-1992 in each of the three countries. Entry of data into computers is now in progress using formats in the approved protocols.

EQUIPMENT

An important component of IPHECA is the provision of specialized medical equipment and supplies to allow diagnosis of patients. The items of equipment and consumable supplies acquired and distributed amongst the three participating countries in 1993 are presented in Tables 1 and 2.

Most equipment planned for the project areas has been acquired. Some items are still pending.

Thyroid Project

- a) histological equipment for Belarus was purchased with other funds. Specific requests for this equipment for Russia and Ukraine are still to be received in accordance with the specified IPHECA requirements;
- b) the purchase of versatile ultrasound facilities is still awaiting final decisions because of the differing opinions on the type of equipment and costs.

Haematology Project

Equipment for biological dosimetry of patients with haemoblastoses was evaluated and will be acquired for Belarus and Ukraine in 1994.

Epidemiological Registry Project

A subcontract to develop special software for the IPHECA projects has been agreed upon. Purchase of additional computers for subregistries has been delayed pending an evaluation of existing computer use.

TABLE 1. EQUIPMENT AND OTHER CONSUMABLE SUPPLIES PROVIDED BY WHO IN 1993

DESCRIPTION OF EQUIPMENT	BELARUS	RUSSIA	UKRAINE
TLD equipment (high temperature)			102,185
Minivan	28,481	28,481	28,481
Microscopes	62,150	74,430	67,405
Haematology analyzers	603,063	581,197	869,685
Spare parts for haematology analyzers	12,359	12,359	12,359
Microscope cover glasses		1,526	
EIA and RIA kits and equipment	346,774	335,828	347,327
Flow cytometer (Facscan and Facstar)	441,899	441,899	285,593 (Facscan)
Reagents and kits for Facscan and Facstar	229,960	229,961	355,725
Fluoroimmunoassay, radioimmunoassay and biochemical laboratories	243,187	371,253	326,103
Computer software	1,985	1,985	3,970
Visible spectrophotometer for determining iodine in urine	72,395	48,313	72,395
Three-dimensional imaging equipment	153,576	153,576	153,576
Accessories for ESR spectrometer	20,533		
Amerlite reagents, consumables including training and quality control programme	122,645	172,319	168,284
Dynamic brain mapping system	66,667	66,667	66,667
Total	2,405,674	2,519,794	2,859,755
TOTAL FOR THE THREE COUNTRIES	7,785,223		

TABLE 2. EQUIPMENT INTENDED FOR COMMON USE PROVIDED BY WHO IN 1993

EQUIPMENT	COST (US\$)
Televideocommunication facility (includes installation, training and servicing)	663,231
Reagents for cytoscan facility	21,591
TOTAL	684,822

TRAINING

93 specialists received or were contracted to receive advanced training in 23 separate programmes in various countries in 1993.

Thyroid Project - 9 training programmes had been scheduled and 7 were fully completed or are obligated under contract. These are programmes listed in items 1 and 3 to 8 on pages 4-5 of the 1993 Plan. Regarding item 2 of the 1993 plan, the candidates from Belarus and Ukraine were trained in Germany using other sources of funding. Regarding item 9, i.e. the training on pathomorphology in Switzerland, one specialist from Belarus was also funded from other sources. One candidate from Russia went for training in February 1994. A Ukrainian specialist has been designated and will be trained in 1994. One Russian specialist was trained in advance in radiation diagnostics and therapy (Germany) while the specialist from Belarus and Ukraine can be trained later in 1994. Another training programme undertaken in 1993 instead of 1994 was that by CIS Bio International (France) on the use of RIA and EIA kits (Obninsk, Russia, June 1993). Four specialists from each country took part in the course.

Haematology Project - of the 6 scheduled programmes 4 were fulfilled or are obligated (items 1, 2, 4, 6 of the 1993 Plan). The exception is training in the use of histological equipment which was not purchased. At the same time 48 specialists (12 from Belarus, 16 from Russia, 20 from Ukraine) instead of 6 (as provided by the 1993 work plan) were trained in Obninsk, in techniques of blood analysis and flow cytofluometry. In view of this, it was reasonable to postpone the scientific training envisaged under item 3 to 1994; hosting institutions for this training must be contacted by the three countries themselves as usual. 2 out of 3 specialists have been trained in cytogenetic dosimetry and the remaining one from Ukraine will be trained in 1994.

Brain Damage In-Utero Project - A training course in computer methods was organized for psychologists and psychiatrists from the three countries. The advanced training on techniques detection of mental retardation used in Hiroshima was delayed and is now scheduled to take place in 1994. Clinical training of specialists as envisaged by the 1993 plan could not take place because no patients with severe mental retardation were detected; this training may be abandoned.

Epidemiological Registry Project - The IPHECA guidelines for supporting scientific training by WHO (items 1-3 of the 1993 plan) were not followed by the organizers in the three States and as a result the envisaged training could not take place in 1993. The only exception was the advanced training provided in Japan to a specialist in epidemiological registry from Russia. If still needed, training under items 1-3 can be arranged in 1994. An international training course (in Russian) in radiation and general epidemiology was organized to commence on 1 March 1994.

General - UNESCO sponsored training courses for interpreters in French and English was attended by two persons from Ukraine. The names of two candidates have been proposed by Russia for similar training.

PROGRAMME MANAGEMENT AND COORDINATION

This component of the IPHECA project involves the promotion of cooperation among countries participating in IPHECA, management of resources and preparation of meetings and reports. During the year, the WHO Secretariat participated in various meetings with the aim of mobilizing additional resources and support for IPHECA, and for improving the coordination of activities within IPHECA itself and with the initiatives of other organizations.

The consequences of the Chernobyl accident were on the agendas of both ECOSOC (June 1993) and the United Nations General Assembly (November 1993). WHO was represented at both and made statements on the progress being made within IPHECA and on the need to extend the programme beyond its pilot phase. Resolutions were enacted by both bodies calling upon Member States and funding organizations to provide financial and technical support for programmes concerned with the alleviation of the consequences of the accident.

The WHO Secretariat also participated in the Expanded Meeting of the Quadripartite Committee for Coordination on Chernobyl on 17 November 1993 in New York. The meeting provided an opportunity to report on IPHECA particularly as regards future needs. In addition to representatives of the three States and international organizations, the meeting was attended by representatives of the donor community.

A meeting on Chernobyl Project Coordination was convened from 26-28 May 1993 in Geneva with the participation of representatives of the three affected States and of most organizations with multilateral and bilateral projects concerned with the health consequences of the accident. The meeting discussed the establishment of a Coordinating Group, composed of representatives of the Ministries of Health of the three States which would be responsible for coordination of all health-related work implemented through the Ministries. The participants of the meeting exchanged information on these activities and agreed to undertake an inventory (in an agreed format) of the activities. This inventory has now been completed and is available.

A Workshop on International Health-Related Studies following the Chernobyl accident was convened in Rome 14-17 December 1993. Essentially the meeting identified the need for coordination to avoid duplication of efforts and recommended better information exchange and validation of approaches especially at the international level.

As a part of efforts to mobilize additional support for IPHECA a number of contacts and meetings have been made with other organizations. This has included the International Consortium for Research and Treatment of Radiation Induced Injuries and the St Nicholas for Myra Trust. Negotiations for cooperation are proceeding with these and other organizations. A meeting was also held with representatives of the European Union with representatives for specific research projects on thyroid cancer.

In order to better publicize the Programme, a brochure describing IPHECA was prepared and widely disseminated. It is hoped that this brochure will aid in mobilizing additional support.

BUDGET

IPHECA is financed at WHO through extra-budgetary resources amounting to US\$ 20 million. Aside from the major contribution from Japan, funding has also been received from Finland, the Czech Republic and Slovakia.

A financial statement summarizing details of 1992-1993 expenditures is given in Table 3. Item 1 covers all training costs as well as expenditures for temporary consultants, interpreters and clerical services. Item 2 covers fixed contracts for conduct meetings, development of software, editorial and report writing, and field missions. Item 4 to 6 are self-explanatory while item 3 expenditures include duty travel and miscellaneous items.

TABLE 3. 1992 - 1993 Expenditure Report

I P H E C A A И Ф И К А

No	Lines	US\$	Статьи Раходов	No
1	Training/Temporary advisers/Temporary assistance	561,041	Обучение/временные советники/временная помощь	1
2	Contractual services	221,225	Контракты на обслуживание	2
3	General operating expenses	130,224	Общие текущие расходы	3
4	Acquisition of medical equipment	13,730,489	Оборудование	4
5	Data processing equipment, supplies and materials	657,786	Компьютеры и системы	5
6	Programme support costs	1,989,099	Расходы на поддержку программы	6
Total for Programme Activities		17,289.864	Итого	

ANNEX IV

IPHECA MANAGEMENT COMMITTEE MEETING

AGENDA ITEM 4

16-17 MARCH 1994, GENEVA

Proposed Activities for IPHECA: 1994 and beyond**INTRODUCTION**

IPHECA has supported and supplemented the national efforts to investigate and mitigate health consequences in contaminated areas of Belarus, Russian Federation and Ukraine. IPHECA has also facilitated coordination of these efforts among the three States and with other Organizations. To complete the pilot phase of the Programme and explore ways for continuation of IPHECA, a number of activities for 1994 is proposed. This is given in the "Plan on the Implementation of IPHECA in 1994" (Appendix 1). This plan addresses the needs for each of the pilot projects. In addition, Table 1 presents an overview of the financial implications of the activities presented in the 1994 Plan as well as proposals for a further utilization of the resources during 1994 and as necessary in 1995. These are subject to approval by the Management Committee at its meeting in March 1994.

1. 1993 CARRY-OVER ACTIVITIES

As stated in the progress report, certain activities, i.e. equipment procurement and training, were postponed and transferred to 1994 for implementation. These included the procurement of equipment for ultrasound imaging and histology. Training programmes postponed to 1994 include training in immunoassay, pathomorphology, haematology, brain-damage in utero and others. Also, the review meeting on haematology was postponed from 1993 to 1994. The total cost of all these activities is approximately \$675,000.

2. NEW EQUIPMENT PROCUREMENT

Some additional equipment is necessary to continue the current pilot phase of IPHECA during 1994. The requests for new equipment received from the three States which are included in the proposal for 1994 are: high temperature TLD instrumentation, cytogenetic dosimetry equipment, and X-ray machines. In addition, the proposed new purchases include supplies and accessories, i.e. syringes and needles and computer software. The estimated total cost of new procurements is \$985,000. The procurement of X-ray machines and syringes, included in this total, are covered by a donation of \$500,000 from the Czech Republic and the Slovak Republic earmarked for this purpose.

3. PROGRAMME MAINTENANCE

It is essential that the IPHECA activities in each of the three countries be continued. This requires maintenance support for the existing pilot projects in the form of continuing

supply of consumables, acquisition of small items of equipment where necessary, software updates, maintenance and repair of installed equipment, training and advisory services. A sum of US\$250,000 is allocated to maintain current activities at their present workload for 1994 and if possible extending into 1995.

4. IPHECA REPORT AND CONFERENCE

The IPHECA pilot phase report is to be completed in 1994 and a document giving details on the content is provided separately.

It is considered necessary that the results of the pilot phase of IPHECA be presented at an international scientific conference. This conference would serve a number of purposes:

1. Provide a forum for presentation and discussion of results achieved in the three affected States since 1986 in the fields covered by the pilot phase of IPHECA.
2. Highlight the contribution of IPHECA.
3. Identify research and health care projects that should be continued.
4. Encourage financial support for the continuation of these programmes.
5. Provide a platform for the presentation of the IPHECA report.
6. Allow the opportunity for international focus on the need to continue IPHECA.

Publication of the IPHECA report and organization of the international conference is allocated US\$225,000.

5. PROGRAMME MANAGEMENT AND COORDINATION

This item includes the day to day operation of the programme (secretarial support, advisory services, duty travel, etc.), coordination with other organizations and institutions (including meetings of specialists), review of the results obtained, provision of information concerning the programme (including printing of technical documents), and promotion of scientific exchange. A sum of US\$125,000 is proposed for this purpose.

6. PROGRAMME SUPPORT COSTS

At 13%, \$378,000 is required.

7. NEW ACTIVITIES

It is proposed that some new initiatives be started in 1994 supported by start-up funding from existing resources. These initiatives fall into two categories, namely:

- (i) transformation of current pilot projects into longer term projects;

- (ii) new projects to cover other fields envisaged under IPHECA.

More detail concerning these is given in Appendix 2 to this document. A sum of \$272,000 is proposed for this purpose. As it is not possible to start all of these activities simultaneously, the Management Committee will need to decide on priorities. It is suggested that the following activities deserve high priority: thyroid diseases, health care of Chernobyl recovery workers, dose reconstruction (in collaboration with IAEA), and psycho-social effects.

Table 1. Proposed utilization of resources for 1994 and beyond

1.	1993 carry-over activities (training, equipment and meetings)	\$675,000
2.	New equipment purchases for pilot projects:	\$985,000
	- Cytovision ultra system	
	- High temperature TLD system	
	- X-ray machines and syringes	
3.	Continuing maintenance support for activities related to pilot projects (spare parts, consumables, small items of equipment, training, consultants, etc.) for 1994	\$250,000
4.	Preparation and publication of IPHECA report and a review meeting	\$225,000
5.	Programme management and coordination for 1994/95 including mobilization of new resources	\$125,000
6.	Programme support costs	\$378,000
7.	New activities	\$272,000
	Total	<u>\$2,910,000</u>

**WHO INTERNATIONAL PROGRAMME ON THE HEALTH EFFECTS
OF THE CHERNOBYL ACCIDENT**

(I P H E C A)

Plan on the Implementation of IPHECA in 1994

**World Health Organization
Geneva, 1994**

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III.	Brain Damage <u>In-Utero</u>
IV.	Epidemiological Registry
V.	Management & Coordination

PLAN ON THE IMPLEMENTATION OF IPHECA IN 1994

Project/Area	Task	Activity	Schedule	Comments
I. Thyroid	Clinical & Epidemiological Investigation	1. Progress report for 1994.	September	Children with pathological manifestations will undergo such examinations in the three States. The form will be provided by WHO and distributed to the three States.
		2. Screening of any remaining subgroups of children for thyroid disorders.	May	
		3. Advanced examination of patients at oblast and national institutions.	July	
		4. Inventory of data of all cancer cases (up to 1 January 1994) in accordance with a form provided by WHO.	March	
		5. Review and completion of maps for radioiodine deposition and for average iodine doses to the thyroid.	May	
		6. Review of reconstructed individual doses to the thyroid for patients with cancer and other selected thyroid diseases and for persons selected as controls.	May	

Project/Area	Task	Activity	Schedule	Comments
	Procurement of equipment	1. Acquisition of nine Chitachi 405 ultrasound facilities.		Three for each country.
		2. Continuing maintenance support for already installed equipment (spare parts, consumables, small item of equipment, reagents, etc.)		Under the responsibility of national coordinators with taking into account funds allocated for this item by the Management Committee
	Training abroad	1. Six physicians (2-Belarus, 2-Ukraine, 2-Russia) to be trained at an immunoassay laboratory for quality assurance techniques.	April	Five in the framework of obligated technical agreement with Amersham plus candidate from Belarus.
		2. One specialist from Ukraine to be trained in pathomorphology (Switzerland).	June	Specialists from Belarus and Russia have already been trained in Switzerland.
		3. One specialist each from Belarus and Ukraine to be trained in diagnostics and therapy.		A Russian specialist has already been trained.
		4. Training of one specialist from Ukraine and two each from Belarus and Russia in RIA techniques.	May	Obligated under a contract with Wallac Oy Company (Finland).

Project/Area	Task	Activity	Schedule	Comments
II. Hematology	Clinical & Epidemiological Investigation	1. Progress report for 1994.	September	
		2. Screening of any remaining subgroups for hematological disorders in the population of SCZs; finalizing epidemiological registration of all cases of hemoblastoses	June	
		3. Advanced examination of patients at oblast and national institutions.	July	All patients with suspected hemoblastosis will undergo such examinations.
		4. Data inventory of all leukaemia cases in accordance with a form provided by WHO.	upto 1 January 1994	The form will be provided by WHO and distributed to the three States.
		5. Review meeting on hemoblastoses.	February	Meeting held 21-25 February in Bryansk, Russian Federation
	Procurement of equipment & supplies	1. X-ray facilities.		Using the donation of the Czech Republic and the Slovak Republic. To be used also for other projects of IPHECA.
		2. Syringes and needles.		
		3. Continuing maintenance support for already installed equipment (reagents, spare parts, consumables, small item of equipment, etc.)	May	Under responsibility of national coordinators, taking into account funds allocated for this item by the Management Committee
	Exchange of information and training abroad	1. Training in hematology and immunology techniques (one from each State).	February-May	The three countries should present WHO with names of candidates, detailed plans of work, address of the institute and agreement from authority of the training institution.

Project/Area	Task	Activity	Schedule	Comments
		2. Training of one specialist from Ukraine in plate fluorimetry techniques.	May	Obligated under a contract with Wallac/Oy Company (Finland).
		3. Training of one specialist from Ukraine in liquid scintillation techniques.	May	- " -
		4. Training of one specialist from Russia in Kone biochemistry techniques.	May	- " -

Project/Area	Task	Activity	Schedule	Comments
III. Brain Damage In-Utero	Clinical & epidemiological investigations	1. Third meeting of investigators.	Minsk, April	To discuss the results of Phase I and agree on protocol for Phase 2.
		2. Continuation of data collection and data analysis.	by the middle of year	
	Exchange of information and training	1. Advanced training of six specialists to compare Chernobyl data with atomic bomb data in Japan.	April	Two specialists from each country
		2. Training in EEGS mapping in accordance with the contract.	June	To be provided by specialists from a manufacture for specialists from the three States.

Project/Area	Task	Activity	Schedule	Comments
IV. Epidemiological Registry	Implementation of the unified protocol for national epidemiological registries	1. Development of special software on statistical treatment and epidemiological analysis.	March-July	To be developed by specialists from the three countries under a contract with WHO.
		2. Training course on Chernobyl-related epidemiology in Moscow.	March	For specialists from the three affected States.
		3. One epidemiological registry specialist from each of Belarus and Ukraine to be trained.	June	A Russian specialist has already passed this training.
		4. One specialist from each country to be trained in radiation epidemiology.	May	
		5. Review meeting of experts on the pilot project	July	In accordance with the decision of the meeting of project coordinators from the three countries
	Procurement of equipment and supplies	1. Additional computers for field missions.		six for each country.
		2. Acquisition of standard software.		After an inventory on the existing software is obtained.

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Project/Area	Task	Activity	Schedule	Comments
V. Accident Recovery Workers Project ("Liquidator" Project)	Organizational aspects of the implementation of the Project	1. International conference/meeting on organizational, scientific and financial aspects of the Project.	June-July	Ministry of Health, Russian Federation, has suggested to convene the Meeting in St Petersburg on the basis of the Centre of Medical Ecology
		2. Development of the Protocol for medical examination of ARW.	September	
		1. Development of a common methodology for dose reconstruction.	September	
VI. Dose Reconstruction Project ("Dosimetry" Project)	Implementation of the unified approaches for dosimetric studies	2. Provide the data to research programmes.	October	Ukraine has received the system.
		3. Establishment of dose monitoring programmes for people in the three countries.	December	
	Procurement of equipment	1. High-temperature TLD system for Belarus and Russia.		
		2. Acquisition of equipment for biological dosimetry of patients with hemablastoses, to be installed in Belarus and Ukraine.		Cytovision Ultra manufactured by Applied Imaging;
	Exchange of information and training abroad	1. Training in karyotyping and cytogenetic dosimetry of a specialist from Ukraine.	May-June	Belorussian and Russian specialists have already been trained.
		2. Training in TLD (USA).	May-June	One physicist from each State who are fluent in English (obligated under contract).
		3. Training of one specialist from Russia in biological dosimetry based on mutation of genes in somatic cells.	August-September	On the basis of agreement with RERF (Hiroshima, Japan).

APPENDIX II

FUTURE ACTIVITIES OF IPHECA - AFTER THE PILOT PHASE

The future activities fall into two categories:

- 1) transformation of current pilot projects into appropriate regular projects;
- 2) new projects to cover other fields envisaged by IPHECA.

A. Extension and Expansion of Pilot Projects

The transformed projects will provide more epidemiological data than it was possible at the short pilot state, and will contain the following major topics:

I. Haematology and Immunology (5 years - 1994-1999)

- characterization of the structure of haematological and immunological disorders;
- epidemiology of leukaemia and related diseases;
- strengthening of local production of reagents and continuation of supply of imported reagents;
- maintenance of equipment.

II. Thyroid diseases (10 years - 1994-2004)¹

- support with equipment of thyroid cancer studies among adults;
- epidemiology of thyroid diseases, especially thyroid cancer, among both children and adults;
- strengthening of local production of diagnostic kits and continuation of supply of imported kits;
- maintenance of equipment.

III. Support of National Chernobyl Registries (5 years - 1994-1999)

- updating of standard software;
- maintenance of related equipment.

B. New Projects

New projects under IPHECA should be initiated as follows:

¹ Concrete plans for extending the thyroid pilot projects have been elaborated by both EURO (for Belarus) and Headquarters.

- **Health of Chernobyl Recovery Workers** - to improve registration, diagnosis, medical treatment, physical and mental rehabilitation of liquidators and to consolidate our experience and scientific knowledge on their health care. A proposal from the Ministry of Health of the Russian Federation has been received. It is important to insure that any IPHECA work in this area do not overlap with efforts already underway by others.
- **Psycho-social effects** - to identify the relevant problems among adults and children, and to reduce the psycho-social impact of the Chernobyl accident.
- **General oncology** - to determine if there is an excess occurrence of cancers other than leukaemia and thyroid cancer;
- **Cytogenetic effects** - to characterize cytogenetic indicators of radiation damage in the general population.
- **Dose reconstruction** - to reconstruct individual and collective doses using physical and biological dosimetry techniques. A proposal by the three States is available. It is highly desirable that the implementation of this project be carried in collaboration with the IAEA.
- **General health status of the population** - to study the incidence and patterns of morbidity and mortality in populations in contaminated areas compared to uncontaminated areas.