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EMERGENCY IMMUNIZATION SUPPORT INITIATIVE: CENTRAL ASIAN REPUBLICS OF THE NIS

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UNITED STATES OF AMERICA

EMERGENCY IMMUNIZATION SUPPORT INITIATIVE:

CENTRAL ASIAN REPUBLICS OF THE NIS

On behalf of:

United States Agency for International Development
Office of Foreign Disaster Assistance
Bureau of Research and Development (Office of Health)

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TABLE OF CONTENTS

I. BACKGROUND 1

II. ASSESSMENT ACTIVITIES: 1

III. ASSESSMENT FINDINGS: 2
- A. General Overview: 2
- B. Individual Republics 2

IV. RECOMMENDATIONS: 4

ACRONYMS

A.I.D.	Agency for International Development
ARI	Acute Respiratory Infections
BCG	Bacillus, Calmette, and Guerin
CIS	Commonwealth of Independent States
CDC	Centers for Disease Control
DPT	Diphtheria, Pertussis, Tetanus
EPI	Expanded Program on Immunization
FAP	Feldsher Obstetrician Post
MOH	Ministry of Health
MMR	measles-mumps-rubella
NIS	Newly Independent States
OFDA	Office of Foreign Disaster Assistance
OPV	Oral Polio Vaccine
SES	Sanitary and Epidemiology Station
TT	Tetanus Toxoid
UNICEF	United Nation Children's Fund
WHO	World Health Organization

Things fall apart.
The center cannot hold.

W.B. Yeats

The only sound there is
after the ambulances go
is Cinderella sweeping up
on Desolation Row.

Bob Dylan

Acknowledgement: This report is dedicated to the officials and people of the former Soviet Union who, reeling from the collapse of life as they knew it, enduring with quiet desperation donations of custard pie filling, swallowing their pride, tolerating an endless parade of assessors, are resolute in their determination to see a great experiment through to the end. To them we feel privileged for this opportunity to provide something hopefully of value. And we already owe a debt of gratitude for the hospitality and warmth which everyone offered.

I. BACKGROUND

As part of the United States emergency humanitarian assistance to the Newly Independent States (NIS), funds have been allocated by the Agency for International Development for an Emergency Childhood Immunization Support Program in three targeted areas. Implementation of this support is the responsibility of two AID offices: the Office of Foreign Disaster Assistance (OFDA) and the Bureau of Research and Development/Office of Health (R&D/Health). The objective of this effort is to ensure that children under the age of two years are protected against the common vaccine preventable diseases from now through the end of the coming winter.

The Emergency Childhood Immunization Support Program is itself a response to an earlier assessment (Jan-Feb) of health needs in the NIS by an FHA team which indicated that vaccine production problems with the NIS had led to greatly reduced vaccine supplies, and that this was leading to a serious reduction of immunization coverage rates for newborn children. One of the warnings of that assessment was that if low immunization coverage continued, there was the risk of increased disease incidence for the immunizable diseases (especially measles, pertussis and diphtheria, but also polio, tetanus and tuberculosis) and resulting unnecessary morbidity, suffering and even death. That assessment noted that in some areas of the Russian Federated Republic there was already evidence of increased incidence of measles, pertussis and diphtheria.

Given limited resources available for the Emergency Childhood Immunization Support Program, the relative merits of potential assistance areas were explored. It was decided in Washington that a pre-implementation visit should be carried out in, and be limited to, the Central Asian States, and that an effort should be made to closely examine the relative merits of supporting immunization activities in selected major urban areas versus immunization activities covering the entire populations of republics with small populations. (See Annex 1 for the State Department cable explaining this mission.)

A REACH pre-implementation team composed of Robert Steinglass of REACH and David Bassett of CDC was engaged by OFDA and R&D/Health for a 4-week visit to determine immunization program needs in the Central Asian States of the NIS, and to make recommendations to OFDA on where and how the Emergency Childhood Immunization Program should target its assistance. The assessment format was to visit each of the Central Asian States to explore with relevant authorities the need for, and interest in, short-term emergency immunization support, which could begin as early as late April or early May.

II. ASSESSMENT ACTIVITIES:

The immunization team was fortunate to be able to join the FHA team continuing the work begun in January. The FHA team was just beginning its visits to the Central Asian States. The immunization team joined the larger group in Kazakhstan, where it split into two groups, one to visit Kyrgyzstan and Uzbekistan, the other to visit Tajikistan and Turkmenistan. Steinglass joined the first group, Bassett joined the second. Before splitting up, Steinglass and Bassett developed a format to be used for information gathering that would ensure that they collected comparable data from the different countries (See Annex 2). Within each country, officials at the national level responsible for immunization activities and vaccine storage were interviewed. To the extent that time permitted, discussions were also held with persons responsible for immunization activities and vaccine storage at the regional (oblast), district (rayon) and clinic levels. Attempts were made to visit clinics of various sizes, ranging from large urban clinics to small rural ones.

After visits to these four countries, the team met to compare notes and was joined by Jim Kelly, AID consultant with OFDA responsible for procurement for this effort. Once again the team split up to re-visit most of the countries for only one day to "keep the ball rolling": to generate a formal

request from the MOH to the Embassies and work with the Embassies to prepare an actionable procurement cable to Washington.

III. ASSESSMENT FINDINGS:

A. General Overview:

In general it was found that immunization activities in the Central Asian States are not yet severely compromised, but that vaccine shortages are either already beginning to be felt, or will soon be felt if consignments anticipated from manufacturers in the Russian Federation fail to materialize. In Tajikistan and Turkmenistan, there did not appear to be a realization that vaccine supplies were likely to be interrupted in the near future. The team felt that there is an overriding need to avert a public health disaster which is waiting to happen. (See Annex 3 for some lessons borrowed from the field of disaster epidemiology which guided the team during its assessment.)

In each of the states, serious shortcomings in the cold chain were noted. While the overall cold chain infrastructure was solid, with conceived strategies for distributing vaccine, there was uniformly insufficient equipment and, in some cases, knowledge, to carry out the strategies in a manner that would provide maximum protection to the vaccines being stored and transported. This was viewed as serious by the team since summer temperatures in the states routinely reach 40 C or higher. Several state programs recognized the inadequacy of their cold chain during the hot periods of the year by restricting or ceasing vaccination activities during this period.

The team also found insufficient supplies of disposable syringes in each of the states. Each program had adequate supplies of reusable syringes (although the number of needles for these syringes appeared to be sub-optimal). The clear preference stated by immunization program officials was for disposable syringes, but when supplies run out, the clinics switch to reusable syringes. Sterilization procedures appeared to be adequate, although many clinics were in need of improved sterilization equipment. There was great interest in the availability of small steam sterilizers, which use sterilizable plastic syringes specially designed for immunization programs, as a means of coping with the rapid increase in cost of disposables and as a solution to avoiding reliance on non-sustainable donor support.

B. Individual Republics:

1. Kyrgyzstan:

Kyrgyzstan has an area of 200,000 square km. that is mostly mountainous, and a population of approximately 4.5 million. The crude birth rate and infant mortality rate are, respectively 29 and 30 per thousand. (See Annex 4 for a demographic comparison among countries.)

Immunization coverage has dropped in recent years. Only measles vaccine and possibly polio will need to be supplied, as a system of vaccine procurement through contracts with Russian manufacturers continues uninterrupted for other vaccines. The MOH is prepared for a return to a reusable syringe policy due to a 15-fold increase in the cost of disposable syringes and due to the unacceptable prospect of continued reliance on unsustainable donor support. Emergency procurement of disposable syringes and a limited number of steam sterilizers and cold chain equipment will be needed.

2. Uzbekistan:

Uzbekistan has an area of approximately 450,000 square km. and a population of more than 20 million, which is 50% more than the combined populations of Kyrgyzstan, Tajikistan and Turkmenistan. The crude birth rate and infant mortality rate is, respectively, 33 and 38 per 1000.

Immunization coverage has risen in recent years but the possibility of a measles outbreak persists owing to a measles vaccine stock-out which began in late 1991. Recent UNICEF-supplied measles vaccine will be exhausted by mid-summer. Measles vaccine will need to be supplied to Tashkent City and Tashkent Oblast, with a combined population of 106,000 newborns.

Given its large population and high birth rate, Uzbekistan has major cold chain needs which will require considerable resources to address. Some cold chain equipment will be supplied to Tashkent City and Oblast to protect the investment in donated vaccines. However, a coordinated response on the part of the international donor community will be required to tackle the magnitude of the needs. One area where WHO and CDC might be able to play a significant role is in examining the immunization schedule and providing the rationale for a relaxation of the overly conservative policy regarding contraindications to vaccinations.

3. Tajikistan:

Tajikistan has an area of 143,000 square km. that is mostly mountainous, and a population of approximately 6 million. It is one of the poorer republics in the NIS. It has an infant mortality rate of 40 and crude birth rate of 38/1000.

Immunization coverage is high, but vaccines are in short supply. Polio and measles vaccine (the latter from Pakistan) were received in March, 1992, but even with these supplies, vaccinations can only be assured for newborns for about 3 months, and this only if the normal schedule of revaccinations is abandoned in favor of newborns.

A decent cold chain infrastructure exists, but additional equipment is needed to make it function properly. Key personnel at all levels could benefit from mid-level management and cold chain training of the type designed by WHO.

4. Turkmenistan:

Turkmenistan has an area of 488,000 square km. that is mostly desert, and a population of approximately 3.8 million. The republic is relatively rich in natural resources, but the standard of living remains relatively low. The republic has an infant mortality rate of 45/1000 and a crude birth rate of 30/1000.

Immunization coverage is generally high, although measles coverage has fallen considerably in recent years. This appears to be due to insufficient vaccine. A shipment of measles vaccine was received from UNICEF in March, which is enough to meet the needs of newborns for some six months if there is no wastage and if the cold chain can maintain the vaccine that long. Unless anticipated consignments of vaccine arrive from the Russian Federated Republic, the program will likely be facing vaccine shortages for all antigens except measles in 2-3 months.

Other than Russian made picnic baskets, the program has no vaccine transportation equipment. This is a serious matter in a country where temperatures exceed 40

degrees C. for 4-5 months of the year. Some cold chain equipment is needed immediately to assure the safety of vaccines received. Personnel at all levels could also benefit from the type of cold chain training designed by WHO.

5. Kazakhstan:

After discussions with the FHA team which had just completed its assessment of Kazakhstan and a review of available demographic and health status data, the team concluded that Kazakhstan was a less likely candidate for assistance relative to the other states because of its better health status and economic conditions.

IV. RECOMMENDATIONS:

A. That all of Kyrgyzstan, Tajikistan and Turkmenistan and a small part of Uzbekistan be selected for assistance by the Emergency Childhood Immunization Support Program. This recommendation is based on the following factors:

1. The size and relative wealth of Kazakhstan makes it an unattractive candidate. It would not be possible for the emergency effort to provide assistance to the entire large population of Uzbekistan. National officials in Uzbekistan would be willing to have assistance earmarked for use to benefit approximately 60,000 children within Tashkent City and Tashkent Oblast, which would permit more accessible end-use monitoring. (See Annex 5 for an economic comparison among the countries.)

2. The relatively small national populations of Kyrgyzstan, Tajikistan and Turkmenistan (total of approximately 460,000 newborns per year) that would allow for the funding available to cover the entire country instead of selected geographic areas.

3. All selected sites are in need of assistance. In at least Tajikistan and Turkmenistan there is the real danger of program cessation if additional vaccines are not received within the next several months.

B. That specific vaccine needs be worked out for each of these states in coordination with UNICEF to assure that total vaccine needs are met for a one year cohort of newborns. This will allow each state time to get its own vaccine procurement arrangements in place and will do much to assure that on-going vaccination programs continue uninterrupted.

C. That enough disposable syringes be shipped with vaccines that are provided to assure that all the vaccines can be administered with disposable syringes.

D. That enough cold chain equipment be provided to assure that donated vaccines can be received and kept safe up to the time of administration. It may be necessary to provide vaccines in several staged shipments, given the uncertainty that vaccines could be kept safely throughout the coming summer months. (See Annex 6 for a list of the emergency items, including vaccines, cold chain equipment and syringes, which should be procured urgently. Guidelines on the International Packaging and Shipping of Vaccines appear in Annex 7)

E. That well qualified logistics and cold chain experts be sent to each of the selected states prior to the arrival of vaccines to assure that minimum cold chain requirements are correctly anticipated and met, as necessary through the emergency assistance, in order to protect the investment in donated vaccines and to guide the procurement of

additional materiel. (See Annex 8 for a vaccine arrival report which will be used to monitor the conditions of arrival.)

F. That a well-seasoned resident EPI expert be assigned to cover the selected Central Asian States to provide continuous monitoring and technical guidance for the emergency effort.

G. That steam sterilizers be provided to each of the states for the purpose of meeting short term needs, but also for the purpose of introducing this standard EPI technology to the national programs so that no harm is done by the improper reuse of disposable needles.

H. That OFDA and R&D/Health (perhaps through REACH) communicate with UNICEF regarding the status of cold chains in the Central Asian States. Statements by UNICEF officials regarding the adequacy of the cold chains in these states are not consistent with the findings of this team.

I. That this summary report and the four stand-alone country-specific reports (Kyrgyzstan, Uzbekistan, Turkmenistan and Tajikistan) be circulated rapidly within AID and be shared on a priority basis with UNICEF and WHO.

ANNEX 1

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DE RUEHC #1404/01 0742104
ZNR UUUUU ZZH
P R 142102Z MAR 92
FM SECSTATE WASHDC
TO RUEHMO/AMEMBASSY MOSCOW PRIORITY 2147
RUDKAL/AMEMBASSY ALMA ATA PRIORITY 0371
RUDKBK/AMEMBASSY BISHKEK PRIORITY 0303
INFO RUEHGV/USMISSION GENEVA 2950
RUEKJCS/SECDEF WASHFDC//GLOBAL/HUMAN// 8185
BT
UNCLAS SECTION 01 OF 02 STATE 081404

AIDAC

E.O. 12356: N/A
TAGS: EAID, RS, VZ, KG, KZ
SUBJECT: EMERGENCY CHILDHOOD IMMUNIZATION SUPPORT PROGRAM FOR SELECTED N.I.S. AREAS

REFTEL: A) ALMA ATA 00038, B) STATE 71709 C) MOSCOW 07140

1. SUMMARY AND REQUESTED ACTION: AS PART OF THE U.S. EMERGENCY HUMANITARIAN ASSISTANCE TO THE N.I.S., USD SIX MILLION HAS BEEN ALLOCATED TO SUPPORT EMERGENCY CHILDHOOD IMMUNIZATION SERVICES IN AT LEAST THREE TARGETED URBAN AREAS DURING THE PERIOD MARCH-OCTOBER 1992. IMPLEMENTATION OF THIS SUPPORT WILL BE THROUGH TWO AID OFFICES: 1) OFFICE OF FOREIGN DISASTER ASSISTANCE (OFDA) - RESPONSIBLE FOR THE PROCUREMENT AND DELIVERY OF VACCINES, SYRINGES, AND OTHER IMMUNIZATION EQUIPMENT AND 2) RESEARCH & DEVELOPMENT (R&D)/HEALTH - RESPONSIBLE FOR TECHNICAL GUIDANCE. THE PURPOSE OF THIS CABLE IS TO PROVIDE ADDITIONAL INFORMATION ABOUT THIS INITIATIVE AS BACKGROUND FOR THE UPCOMING FIELD VISITS (REFTEL). PLEASE PASS TO ROBERT STEINGLASS AND DAVID BASSETT. END SUMMARY

2. THE VACCINE IMMUNIZATION SUPPORT EFFORT IS A COMPONENT OF THE US GOVERNMENT INITIATIVES ANNOUNCED BY SECRETARY BAKER AT THE COORDINATING CONFERENCE ON ASSISTANCE TO NEW

INDEPENDENT STATES IN JANUARY, 1992. AS PART OF THE EMERGENCY MEDICAL PROGRAM TO ALLEVIATE CRITICAL SHORTAGES OF ESSENTIAL MEDICINES AND MEDICAL SUPPLIES, THE SECRETARY ANNOUNCED A COMMITMENT TO IMMUNIZE MORE THAN 50 THOUSAND CHILDREN IN THE N.I.S. BEGINNING IN SUMMER 1992. IT IS EXPECTED THAT THIS TARGET WILL BE EXCEEDED.

3. SUPPORT TO CHILDHOOD IMMUNIZATION SERVICES HAS BEEN IDENTIFIED AS A HIGH PRIORITY BY REPUBLICS AND THE VARIOUS TEAMS THAT HAVE CARRIED OUT ASSESSMENTS IN THE N.I.S. ACCORDING TO THE WORLD HEALTH ORGANIZATION AND OTHER

REPORTS, IMMUNIZATION COVERAGE IN MOST OF THE N.I.S. HAS BEEN DECLINING OVER THE PAST FIVE YEARS. OVERALL COVERAGE WHICH WAS REPORTED AT 85 PERCENT IN 1985 HAD DROPPED TO 67 PERCENT IN 1990 AND IS REPORTED TO BE DECLINING FURTHER. WE HAVE RECEIVED REPORTS OF OUTBREAKS OF INFECTIOUS DISEASES: MOSCOW REPORTED 560 CASES OF DIPHTHERIA--UP FROM 88 CASES ONLY TWO YEARS AGO; OVER 330 CASES OF POLIOMYELITIS WERE REPORTED IN THE USSR IN 1990; AND THERE COULD BE OVER 4 MILLION ADDITIONAL MEASLES CASES IN THE N.I.S. IF COVERAGE IS NOT IMPROVED. URBAN AREAS ARE ESPECIALLY VULNERABLE TO EPIDEMICS GIVEN HIGHER POPULATION DENSITIES. PUBLIC CONFIDENCE IN THE PUBLIC HEALTH SYSTEM, AND IN IMMUNIZATION SERVICES IN PARTICULAR, HAS BEEN ERODED BY SUCH REPORTED PROBLEMS AS CONTAMINATED VACCINE AND MULTIPLE USE OF UNSTERILE NEEDLES AND SYRINGES.

4. IN RESPONSE, AID WILL IMPLEMENT AN EMERGENCY IMMUNIZATION PROGRAM IN TARGET CITIES IN THE N.I.S. OVER THE NEXT 6 MONTHS. THIS PROGRAM WILL ENCOMPASS (A) PROVISION OF ESSENTIAL VACCINES, SYRINGES AND OTHER IMMUNIZATION SUPPLIES; (B) PROVISION OF NECESSARY SUPPORT ACTIVITIES IN LOGISTICS, SURVEILLANCE, COMMUNICATION, AND QUALITY ASSURANCE TO ASSIST EMERGENCY IMMUNIZATION; AND (C) OVERSIGHT AND MONITORING. THE OBJECTIVE OF THE CAMPAIGN IS TO ENSURE THAT CHILDREN UNDER 2 YEARS IN EACH OF THESE CITIES IS IMMUNIZED AGAINST MEASLES, POLIO, DIPHTHERIA, PERTUSSIS, AND TETANUS.

5. USD 6 MILLION OF EMERGENCY ASSISTANCE FUNDS ARE ALLOCATED TO THIS INITIATIVE, WHICH WILL BE IMPLEMENTED THROUGH OFDA AND R&D/H. OFDA WILL BE IN CHARGE OF THE PROCUREMENT OF VACCINES, SYRINGES, AND OTHER IMMUNIZATION SUPPLIES AND WITH ASSURING THEIR TIMELY DELIVERY. CURRENT PLANS CALL FOR THE DEPARTMENT OF DEFENSE TO PROVIDE TRANSPORT FOR VACCINES AND SUPPLIES. R&D/H PROJECT REACH WILL TAKE THE ADMINISTRATIVE AND TECHNICAL LEAD AND WILL DRAW ON THE RESOURCES FROM OTHER R&D/HEALTH PROJECTS AS NEEDED AND THE U.S. PUBLIC HEALTH SERVICE'S CENTERS FOR DISEASE CONTROL (CDC). IT IS ANTICIPATED THAT MANAGEMENT OF THE PROGRAM WITHIN THE N.I.S. WILL BE DONE BY SHORT-TERM (4-6 MONTH) CONSULTANTS/ADVISORS HIRED LOCALLY BY REACH AND THAT ACTUAL IMPLEMENTATION OF THE IMMUNIZATION CAMPAIGNS WILL BE CARRIED OUT BY LOCAL HEALTH STAFF.

6. TO LAUNCH THIS INITIATIVE, ROBERT STEINGLASS FROM REACH AND DAVE BASSETT FROM CDC HAVE ARRIVED IN MOSCOW (REFTEL C) TO FINALIZE SITE SELECTION, SITE SPECIFIC LOGISTICS AND IMPLEMENTATION PLANNING (REFTEL B). THE SCOPE OF WORK FOR THEIR TASK IS AS FOLLOWS:

A. MEET WITH REPUBLIC AND MUNICIPAL HEALTH OFFICIALS TO

7

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P R 142102Z MAR 92
FM SECSTATE WASHDC
TO RUEHMO/AMEMBASSY MOSCOW PRIORITY 2148
RUDKAL/AMEMBASSY ALMA ATA PRIORITY 0372
RUDKBK/AMEMBASSY BISHKEK PRIORITY 0304
INFO RUEHGV/USMISSION GENEVA 2951
RUEKJCS/SECDEF WASHFDC//GLOBAL/HUMAN// 8186
BT
UNCLAS SECTION 02 OF 02 STATE 081404

AIDAC
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FOR SELECTED N.I.S. AREAS

EXPLAIN THE INITIATIVE AND CONFIRM NEED AND INTEREST IN RECEIVING THIS ASSISTANCE.

B. APPRAISE THE IMMUNIZATION SERVICE DELIVERY SYSTEM.

C. ESTIMATE DOSES OF VACCINE(S), SUPPLIES, AND IMMUNIZATION EQUIPMENT NEEDS.

D. IDENTIFY KEY INSTITUTIONS AND INDIVIDUALS WHO CAN BE INVOLVED IN AN IMMUNIZATION CAMPAIGN (HEALTH OFFICIALS, VOLUNTARY AGENCIES, MEDIA REPRESENTATIVES, ETC.

E. OUTLINE A DRAFT COLLABORATIVE PLAN OF ACTION FOR DELIVERY WHICH INCLUDES TARGET POPULATIONS FOR IMMUNIZATION COVERAGE, AN INVENTORY OF IMMUNIZATION CONTACT POINTS, LOCAL LOGISTICS AND SUPPLY SYSTEMS, TRAINING, COMMUNICATION, AND MONITORING.

F. PREPARE A DRAFT AGREEMENT (A MEMORANDUM OF UNDERSTANDING) WITH MUNICIPAL AND OTHER APPROPRIATE GOVERNMENT AUTHORITIES FOR THE IMMUNIZATION PROGRAM, COVERING SALIENT PROGRAM IMPLEMENTATION POINTS.

G. IDENTIFY AND EXPLORE THE CONTRACTING OF LOCAL STAFF, INCLUDING A U.S. TEMPORARY RESIDENT ADVISOR TO OVERSEE THE ENTIRE 3-CITY PROGRAM, AND TECHNICAL AND LOGISTICS SUPERVISORS IN EACH CITY.

H. IDENTIFY A SITE FOR PILOT IMMUNIZATION ACTIVITIES TO BEGIN AS EARLY AS APRIL 1992.

7. A LIST OF POTENTIAL SITES HAS BEEN RECOMMENDED ASSISTANCE BASED ON KNOWN NEED, KNOWN INTEREST IN HEALTH

ASSISTANCE, GEOGRAPHIC DISTRIBUTION, AND WITH POPULATION SIZES (CHILDREN UNDER 2) WHICH ARE MANAGEABLE WITHIN THE

RESOURCES OF THIS INITIATIVE. AID/W HAS REQUESTED ASSISTANCE FROM THE AID/FOOD AND HUMANITARIAN ASSISTANCE (FHA) TEAM AND CDC EPIDEMIOLOGISTS IN MOSCOW IN MAKING SITE SELECTION. TEAM WILL REVIEW THIS LIST WITH FHA TEAM MEMBERS IN MOSCOW AND OTHER OFFICIALS AS APPROPRIATE AND SELECT FINAL CITIES TO VISIT WHILE IN COUNTRY. BASED ON FEEDBACK RECEIVED TO DATE, EXPECT THE MAJORITY OF WORK TO BE IN THE CENTRAL ASIAN REPUBLICS AND RUSSIA. BAKER

ANNEX 2

VISIT TO HEALTH AUTHORITY

1. Is the public health system functioning?

   - staff
   - centers open
   - supplies present

2. Is there high level commitment for an immunization program?

3. What additional inputs do they require?

4. Are the authorities committed to coordinating, supervising, and monitoring? Will they accept additional short-term technical assistance from the U.S.?

5. What is the policy followed on age for each antigen and dose?

6. What are current vaccination coverage levels for children 0-11 months old and 12 - 23 months old with DPT1, DPT2, DPT3, oral polio vaccine (OPV)1, OPV2, OPV3, and measles?

7. Is there low utilization of immunization services as measured by DPT1 levels?

8. Is there a problem with high drop-out from DPT1 to DPT3, or DPT3 to measles? Why?

9. How much vaccine, syringes/needles, etc., is in stock and how much is expected to arrive through their normal and emergency channels? Is it sufficient?

10. How much vaccine do they estimate will be needed to vaccinate the current cohort of children 0-23 months old and the babies who will be born during the duration of the emergency response (during the next 6 months?) with DPT, polio, and measles vaccine?

11. Will it be possible to limit vaccination to children 0-23 months old to target vaccines to the epidemiologically most appropriate age group?

12. Are multi-dose vials acceptable or should single-dose vials, which are much more expensive and bulky to store, be supplied for extra security against contamination?

13. What support may be needed to use communication channels to broadcast messages to the public and to health workers about the immunization campaign?

QUESTIONS AND OBSERVATIONS FOR AUTHORITIES DIRECTLY RESPONSIBLE FOR VACCINE COLLECTION, STORAGE, AND SUPPLY

1. What information (and how far in advance) do they need to rapidly clear vaccine arriving at the airport?

2. Are there sufficiently large cold storage facilities (+2° to +8° C) at the airport to store vaccine if release from customs is delayed?

3. Is there a means to protect DPT vaccine from freezing while waiting "on the runway"?

4. Is the vaccine storage and distribution system within the city functioning with working refrigerators at each level?

5. How should donated vaccines be labeled and handled for maximum security?

OBSERVATIONS AT VACCINE COLD ROOM(S)

1. What supplies or equipment (cold boxes, vaccine carriers, ice packs, etc.) is needed to ensure the cold chain at all levels of the urban program?

2. Is there a reliable continuous energy source?

3. Are the cold rooms and refrigerators operating at the correct temperatures (+2° to +8° C)?

4. Is there sufficient space to accommodate arrival of large volumes of vaccine which may be supplied in bulky single-dose vials?

OBSERVATIONS AT CLINIC(S)

1. Are sufficient stocks of vaccine already present? Have stocks of DPT, polio, measles run out at any time during the past 6 months?

2. Are vaccine vials stored in functioning refrigerators at (+2° to +8° C)?

3. Are opened multi-dose vials of vaccine discarded at the end of the day?

4. Is a sterile syringe and sterile needle used to give each injection? Are they destroyed after a single use? Are "Sharps Containers" used or needed?

5. Are re-usable syringes and needles normally used? If so, are they correctly sterilized after a single use?

6. Should non-reusable disposable syringes and needles or conventional disposables be supplied?

ANNEX 3

On Averting a Public Health Disaster Waiting to Happen

The assumptions and rules upon which this visit to the former Soviet Union were based owe much to the lessons learned repeatedly by others engaged in the field of disaster epidemiology. Some of the principles in this field apply well to the current public health crisis facing the immunization program.

- Disasters can be anticipated, prepared for, and sometimes even averted.

In the absence of vaccine, levels of immunization coverage fall and outbreaks of disease occur. This is obvious to infectious disease epidemiologists, but there are nevertheless those who see the hurricane approaching and argue against evacuating the population in its path in the hope that it won't touch shore. Explosive epidemics of measles and other communicable diseases can be expected unless those in control act now. In the absence of measles vaccination, all children will get measles and at least 3 of each 1000 in developed countries will die from it. In the former Soviet Union, statistics such as this translate into 15,000 unnecessary measles deaths for each annual cohort of unimmunized newborns.

- Aim to restore the status quo ante.

Times of crisis and system breakdown may not be appropriate for introducing new vaccines or forcing policy reforms. The overriding need now is to return to basics by protecting the youngest children with the standard core of vaccines: measles, polio, DPT and BCG. The former Soviet Union in the recent past was better able to achieve higher levels of immunization coverage than currently in the United States. Empowered with the proper tools, they can regain high coverage levels without being diverted from this purpose by introducing new vaccines unfamiliar to their practitioners. For example, vaccines against hepatitis B, Haemophilus influenzae type B (Hib), and MMR (measles-mumps-rubella) can be introduce once the dust settles.

- Donations should be pulled by recognized need, not pushed by convenience.

Officials in the former Soviet Union know what they need: familiar vaccines and less familiar cold chain equipment to preserve them. Inappropriate donor responses can only create resentment: in the field of public health, a functional equivalent of donations of diet pills to famine-affected Ethiopia or emergency air shipments of mounds of custard pie filling to the former Soviet Union would be, for example, sending multivalent MMR vaccine. Not only is it unfamiliar, but it is actually contraindicated by Soviet policy and practice, where monovalent preparations of measles and mumps vaccines are not administered with less than a two months interval between them. Provision of MMR would be challenged by pediatricians; it would cause confusion and risk going unused while taking up valuable space in refrigerators. Local officials have been articulate in requesting what they need. Good listeners will provide technically-appropriate items whose need is well-accepted. A modest timely injection of commodities will invigorate a system which is beginning to atrophy.

- Meet immediate needs without undermining the local capacity to cope.

Local manufacture of vaccines will require urgent inputs of aid. As soon as possible, vaccines should be purchased locally instead of being donated. For the time being, local budgets have been stretched beyond the limit by vaccine price increases of up to fifty-fold for some vaccines. In some cases, mechanisms have not yet been put in place to assure the continued arrival of vaccines. In other cases, vaccine production has ceased altogether. Donated emergency vaccines provide a safety net until such time as good quality vaccine can be provided in adequate quantities.

- Appropriate technical assistance can strengthen the capacity of the system to respond.

After an earthquake strikes and improved building materials are provided for reconstruction, some guidance in their use is required. The immunization program in the central Asian republics has just a shell of a cold chain system, but the tools and in some cases the knowledge needed to manage it are absent. Experts in logistics and cold chain are needed for effective utilization of donated vaccines and optimal use of existing resources. This type of technical assistance will aid recovery of the immunization delivery system while at the same time satisfy donors that their investment in donated vaccines is protected.

- To feed the child, feed the entire family.

Provide the health authorities within any administrative unit with enough vaccine, syringes, and other supplies to meet the needs of the entire resident population. To cope with vaccine shortages, MOH officials have already begun appropriately to target the epidemiologically most important age group - infants and young children - to receive their primary vaccinations. But there must be enough vaccine to permit all infants to be vaccinated throughout the entire administrative area.

ANNEX 4

Comparative Demographics within the Newly Independent Central Asian States

Country	Population	CBR	Newborns	IMR	Capital	Population
Kyrgyzstan	4.4 mil	30.4	131,000	29.6	Bishkek	631,300
Tajikistan	5.2 mil	38.6	204,000	40	Dushanbe	602,000
Turkmen.	3.8 mil	35.0	126,000	45	Ashkhabad	407,000
Uzbekistan	20.3 mil	33.3	692,000	38	Tashkent	2,094,000
Kazakhstan	16.5 mil	23.0	402,000	29.4	Alma Ata	1,147,000

ANNEX 5

DOCUMENT IV-9

INCOME DISTRIBUTION
HOUSEHOLDS BY PER CAPITA INCOME LEVELS (1989)[1]
(percent)

Republic	Roubles				
	<75	75-100	100-150	150-200	>200
Kazakhstan	15.5	17.8	32.8	18.6	16.1
Kirghiztan	32.8	23.0	27.7	10.6	5.9
Tajikistan	51.1	21.8	18.9	5.4	2.8
Turkmenistan	35.0	22.6	26.2	10.1	6.1
Uzbekistan	43.6	22.7	22.5	7.4	3.8
All CIS countries	11.1	13.7	31.3	22.1	21.8

[1] Source. A Study of the Soviet Economy 1991, vol. II, table IV.6.13, p. 203

ANNEX 6

PROCUREMENT LIST FOR THE US EMERGENCY IMMUNIZATION SUPPORT INITIATIVE

I. Vaccine	number of doses ('000) required* Tajik	Turkmen	Kyrgyz**	Uzbek
monovalent measles with diluent	250.0	162.5	200.0	88.0
	A. 100	A. 40.6	A. 100.0	A. -
	B. 150	B. 121.9	B. 100.0	B. 88.0
oral polio vaccine with droppers	750.0	487.5	390.0	-
	A. 300	A. 162.5	A. 195	-
	B. 450	B. 325.0	B. 195	-
DPT	750.0	487.5	-	-
	A. 300	A. 162.5	-	-
	B. 450	B. 325.0	-	-
BCG	300.0	195.0	-	-
	A. 120	A. 65.0	-	-
	B. 180	B. 130.0	-	-

A = arrival planned for late April 1992
B = arrival planned for early September 1992

* exact number of doses to procure will depend on the number of doses in each vial, as wastage rates vary considerably. For above calculations, wastage was assumed to be about 25% for all vaccines, except 50% for BCG.

** 45% of each shipment should be sent direct to Osh City

II. Cold Chain Requirements (TOTAL: $147,980)

item	code*	Tajik units	Tajik cost	Turkmen units	Turkmen cost	Kyrgyz units	Kyrgyz cost	Uzbek units	Uzbek cost
freezer	E3/27	8	3240	7	2835	8	3240	2	810
(or**	E3/71)	(8)	(3064)	(7)	(2681)	(8)	(3064)	(2)	(766)
cold box	E4/73	1050	27,300	600	15,600	800	20,800	100	2600
cold box***	E4/29	100	8,900	60	5,340	75	6,675	15	1335
icepacks	E5/09	4000	4,080	6000	6,120	3000	3,060	1000	1020
thermometers	E6/27	1050	1,575	500	750	800	1,200	200	300
(or**	E6/08)	(1050)	(1,376)	(500)	(655)	(800)	(1,048)	(200)	(262)
icepack freezer	E3/26	8	8,784	7	7,686	8	8,784	2	2,196
spare parts****			1,200		1,050		1,200		300
TOTAL			$55,079		$39,381		$44,959		$8,561

* Code is found in WHO/UNICEF Product Information Sheets
** functional equivalents; procure the quicker of the two
*** UNICEF price should be requested when ordering
**** spare parts listed on pages 58, 59, and 68 of Product Information Sheets

III. Syringes (TOTAL: $286,400)

item	code*	Tajik unit	Tajik cost	Turkmen unit	Turkmen cost	Kyrgyz unit	Kyrgyz cost	Uzbek unit	Uzbek cost
disposable (25mm, 23G)	('000)	1000	50	650	32.5	1000	50	70	3.5
BCG (tuberculin or insulin)	('000)	300	15	195	9.75	-	-	-	-
Sterilizer **A** (or** E9/10)	E9/8	120	9480	80	6320	200	15,800	70	5530
Sterilizer **B** (or** E9/11)	E9/9	30	2880	20	1920	50	4,800	30	2880
syringekit **A**	E8/07	240	5640	160	3760	400	9,400	140	3290
syringekit **B**	E8/08	60	2550	40	1700	100	4,250	60	2550
hardwater pad	E10/4	150	2850	100	1900	250	4,750	100	1900
TOTAL			$88,400		$57,850		$89,000		$51,150

* code is found in WHO/UNICEF Product Information Sheets
** functional equivalents; procure whichever will arrive more quickly

ANNEX 7

WORLD HEALTH ORGANIZATION

ORGANISATION MONDIALE DE LA SANTE

EPI/CCIS/81.4/Rev.1

ORIGINAL: ENGLISH

Expanded Programme on Immunization

GUIDELINES ON THE INTERNATIONAL PACKAGING AND SHIPPING OF VACCINES

(Revised May 1987)

The following guidelines are jointly endorsed by UNICEF and WHO. They relate specifically to the international shipment of vaccine to countries implementing the Expanded Programme on Immunization. The guidelines may be cited in part or in whole in invitations to bid for vaccine supply.

1. Insulated packaging standards

1.1 Class A: Freeze-dried measles and liquid oral poliomyelitis vaccine shall be packed to ensure that the warmest storage temperature of the vaccine does not rise above +8°C in continuous outside ambient temperatures of +43°C for a period of at least 48 hours. The diluent for freeze-dried measles vaccine need not be subject to the same packaging but should travel with the vaccine consignment whenever feasible. Suitable cold chain monitor cards should be packed with each 3000 doses of vaccine.

1.2 Class B: BCG and adsorbed DPT vaccine shall be packed to assure that the storage temperature of the vaccine does not rise above +30°C in continuous outside ambient temperatures of +43°C for a period of at least 48 hours. The diluent for BCG vaccine need not be cooled but should travel with the vaccine whenever feasible. Suitable cold chain monitor cards should be packed with each 3000 doses of vaccine.

1.3 Class C: DT and tetanus vaccine need not be packed in insulated cartons with icepacks for international air transport. Suitable chemical temperature threshold indicators should be packed with each 3000 doses of vaccine.

2. Storage volume standards

Vaccine manufacturers shall state the storage volume[1] occupied per dose of vaccine in trade literature and in tender documents submitted to the purchaser. Maximum recommended volumes per dose are as follows:

20 dose polio oral	1.5cm^3/dose	10, 20 dose BCG Freeze-Dried	1.0cm^3/dose
10 dose polio oral	2.5cm^3/dose	10 dose DPT and 10 dose tetanus toxoid	3.0cm^3/dose
10 dose FD measles	3.0cm^3/dose	20 dose DPT and 20 dose tetanus toxoid	2.5cm^3/dose

3. Labelling and packaging standards

3.1 The external surface of vaccine packaging shall be white. A label of the design specified in Figure 1 shall be affixed to every outside face of each vaccine package.

Although the label shown is in English, other languages can be used as follows: "Vaccin Urgent" - "Vacuna Urgente" - "Impfstoff Eilt" - لقاح يرسل فورا

3.2 Labels on each vaccine vial[2] shall be fixed with water-resistant adhesive. The expiry date shall be printed on each vial or vial label in indelible ink.

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[1] "Storage volume" includes the vaccine vial, the packet containing the vaccine vial and any intermediate parcelling of vaccine packets.

[2] Or vaccine ampoule

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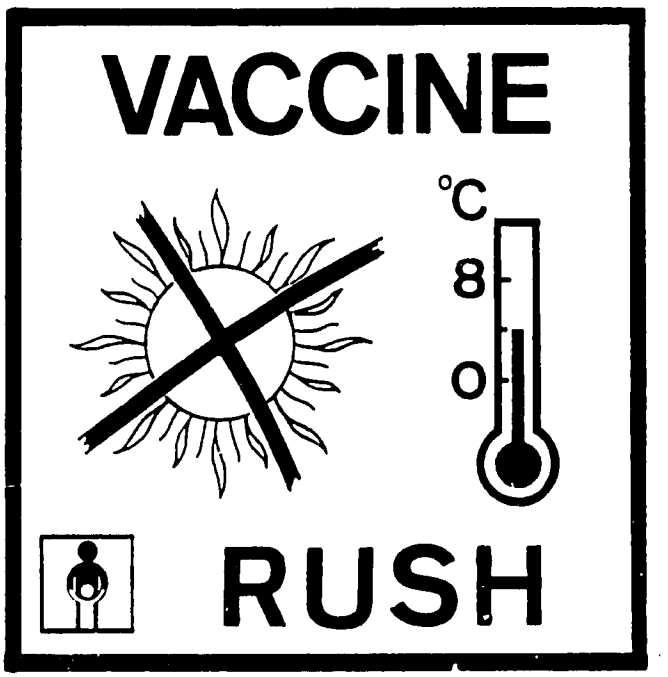
Figure 1: Vaccine shipment label



4. Standard shipping procedures

4.1 Vaccines shall travel by a direct route whenever possible. If transhipment is unavoidable the journey shall be planned, whenever possible, through airports with a temperate climate and cold store facilities. Shipments shall be scheduled to arrive on Monday, Tuesday, Wednesday or Thursday ONLY.

4.2 Vaccine consignments shall be booked well ahead of the date of departure. At least ONE WEEK before the date of despatch, telexes or cables shall be sent to the consignee and to the local WHO or UNICEF office stating the following:

1. Number of vials and doses per vial
2. Type of vaccine
3. Number of cartons
4. Gross weight, kgs.
5. Value of shipment
6. Flight number)
7. Date) - At final destination
8. ETA)
9. Airwaybill (AWB) number
10. PLEASE ARRANGE IMMEDIATE COLLECTION OR TELEX IMMEDIATELY IF VACCINE DOES NOT ARRIVE.

4.3 The following shall be stated on the Air Waybill:

A. Consignee's name, address and TELEPHONE NUMBER
B. Type of vaccine and quantity
C. "HIGHLY PERISHABLE, Telephone consignee upon arrival: (Repeat telephone number)".
D. Handling information:
"MEDICINES - VACCINE - FOR HUMAN USE - HIGHLY PERISHABLE - NOT TO BE DELAYED - CONNECTION BY BOOKED FLIGHT - PENDING RESHIPMENT OR COLLECTION STORE AT 0°C TO +8°C (35°F TO 50°F)".

4.4 Two copies of the invoice or pro-forma invoice with packing details shall be attached the Air Waybill for customs clearance at destination. At the time of shipping the following shall be sent to the consignee by airmail:

1. Copy of the Air Waybill
2. Copy of the invoice with packing details.

4.5 All invoices shall quote the vaccine batch numbers and the dates of expiry of the lots included in the consignment.

* * *

ANNEX 8

WORLD HEALTH ORGANIZATION
Expanded Programme on Immunization

VACCINE ARRIVAL REPORT

Flight Details Date of report: _____

Airport of origin: _____

Scheduled stopover(s) en route: _____

Day of week, date and time of arrival: _____

Airline(s) and flight number(s): _____

2. **Vaccine**

Vaccine types: _____ Manufacturer: _____

Vaccine	No. of vials	Doses per vial	Batch number(s)	Expiry date(s)

Diluent

Is water resistant glue used for the vaccine labels? YES NO

3. **Shipping Procedures**

Date advance telex sent: _____ By whom: _____

To which address or telex number: _____ For attention of: _____

Who received message at immunization project: _____

On what date and time: _____ Text (or attached copy): _____

_____

_____

Were details of telex adequate? _____

Describe any differences between information on telex and actual arrival details:

_____

_____

Answer the above questions on an attached sheet for additional advance telexes which were sent.

VACCINE ARRIVAL REPORT

Does the airway bill state:

- consignee's name, address, and telephone number — Yes / No
- telephone consignee immediately upon arrival — Yes / No
- store vaccine at 0°C to +8°C (32°F to 46°F) — Yes / No
- Do Not Freeze (if DPT, DT, Td, or TT vaccine) — Yes / No

Were other airway bill details correct and adequate? — Yes / No

If not, describe: _____

_____

Were packages properly labelled using EPI "VACCINE RUSH" tape or stickers? — Yes / No

If not, was there clear warning about:

- package contains vaccines — Yes / No
- need to keep refrigerated — Yes / No
- need for urgent handling — Yes / No
- Do Not Freeze (if DPT, DT or TT vaccines) — Yes / No

What was the state of the packaging on arrival? _____

_____

For DPT, BCG, Polio and Measles vaccines:

Were correct language cold chain monitors included? — Yes / No

Vaccine type:				
No. monitors in shipment:				
No. showing index of: A	:	:	:	:
B	:	:	:	:
C	:	:	:	:
A + D	:	:	:	:
B + D	:	:	:	:
C + D	:	:	:	:

For DT, or TT: Were blue shipping indicators included? — Yes / No

Vaccine type:		
No. monitors in shipment:		
No. showing grey (good):		
No. showing black (bad):		

At what time were the final vials placed into Project's cold stores? _____

Comments and suggestions for future improvement: _____

_____