IV.2.2 Background of the sites

a. Mostar

The most difficult period in Mostar was in 1993, when almost no medicines were coming in (some from MSF-H, PSF, MDM and WHO laboratory kits). Between July 1993 to January 1994, aid could only come in through Unprofor and ECTF (European Community Task Force). Basic needs were covered. In the first half of 1994, WHO supplied good quality medicines through Unprofor. During the second half of 1994 (re-opening of the roads in the summer) until the end of 95, East-Mostar was overwhelmed with private donations of inappropriate drugs. Consignments were delivered directly to hospitals and health facilities. There was practically no control (cf. §III.2 and §III.3). Today, the city remains fragmented along ethnic lines (Bosnians on the East side, under the federal government of BiH, and Croats on the West side, under the self-proclaimed government of Herceg Bosna) and there are therefore two separate health care services and management systems.

In West-Mostar, the fact that all medical consignments entering BiH was control by the health authorities of West-Mostar (cf. §III.2 and §III.3), coupled relatively easy accessibility, explains the particularly important concentration of medical donations to this area. Therefore, what was observed in West-Mostar is probably not representative of the other areas in terms of quantity, but significant in terms of quality. Field observations in Tuzla confirmed this statement.

b. Tuzla

Tuzla remained accessible throughout the conflict. The greater part of the medical aid was supplied through Metkovic (as for Mostar) and Tomislavgrad. A smaller quantity came via Zagreb. Tuzla did not experienced direct confrontations between the communities living in the city but was shelled by the Serbs from Republika Srpska.

IV.2.3 Visit and working conditions

Four warehouses could be visited. Visit and working conditions are detailed hereafter.

Table 6 : Summary of the visit and working conditions

	access	duration of the visit	sampling	photos	consultation of documents
a. WEST MOSTAR Bjieli Brijeg hospital warehouse	100 %	2 hours	yes	yes	no
b. EAST MOSTAR Zalik warehouse	50 %	1 hour	no (not useful)	yes	no
c. TUZLA Federal Drug Logistic Centre	100 %	1 hour	no	yes	yes
d. TUZLA Hospital Warehouse	100 %	_ hour	no (not useful)	not allowed	no

a. Bjieli Brijeg hospital warehouse (West-Mostar): semi-oriented sampling

Address: Klinicka Dolnica
Bjieli Brijeg
Mostar West

Bjieli Brijeg is the main warehouse in West-Mostar. We were able to visit this warehouse thanks to PSF. It was an informal visit. Contacts taken subsequently with the MoH of the republic of Herceg Bosna, confirmed that an official request for visiting the warehouse would have been denied.

In Grude (30 km from Mostar), it has been reported by PSF that a large pile of expired drugs is lying in the open air. We did not visit this place but PSF did and they saw over 30 m^3 of rejected medicines.
Time limit and the chaotic organisation of the Bjieli Brijeg warehouse kept us from performing a systematic exploration. Since we were not allowed to consult the inventory documents, our method consisted in walking throughout the warehouse. We systematically recorded all the sorted items present in significant quantities (at least around 0.5 m^3). We identified each item and the kind of packaging, assessed the volume, took samples and photos, and noted down relevant information, in particular the origin (company, country, provider, etc.), as well as the comments of the storekeeper or other persons present. Looking around, we have performed, in an empirical way, a sampling of the warehouse, allowing us to carry out a typology of the unused drugs.

b. Zalik warehouse (East-Mostar)

Address: Herzegovina Lijek
Muje Pajica 5
Zalik
Mostar East

This facility is the cantonal warehouse. We visited this warehouse after a meeting with the cantonal Vice-Minister of Health. The warehouse of Velmos Hospital was not visited because of the lack of time, but we obtained some reliable data from PSF who are working there and carried out a sorting programme.
We investigated the main room were rejected medicines were stockpiled. The bulk of the content was mixed unused medicines. Therefore, we just took photos and did not pick up any samples as it would not have been representative. We also investigated an adjoining small room. We were not able to visit the last room containing rejected medicines, nor the operational room, where useful medicines and supplies are sorted and organised for supplying the cantonal health facilities. This is due to the fact that our visit took place together with a team of journalists who were rapidly filming each room without detailed observations. PSF therefore provided further information on the rooms which were not visited.

c. Federal Drug Logistic Centre of Tuzla

Address: Grmecka bb, 75000 Tuzla
Phone: +387 75 236 499

The Federal Drug Logistic Centre was opened as a central warehouse for the canton in October 1994. It is a building placed at the disposal of the health services by a local pharmaceutical company. It receives mainly WHO supplies on a regular basis and sometimes, one-off or irregular donations from non-medical international relief agencies. Up to the end of 1995, they received some donations of mixed unused drugs from local, private or clerical charities and the Bosnian Diaspora. The manager of the central warehouse reported that when temporary war hospitals were closed down, the remaining drugs, among which a lot of expired ones, were dispatched back to permanent health facilities, especially Dom Zdravlja.

The management is computerised. Medicines are sorted and well-ordered on shelves. Expired drugs are removed as and when required. We were allowed to take photos and the person responsible of the warehouse gave us all the information we needed as well as some relevant documents.

d. Tuzla Hospital warehouse

Address: Central Hospital Gradina Tuzla
Phone: 33 171

This is a huge warehouse in the basement of the hospital with impressive stockpiling of items. Contrary to all expectations, the hospital director allowed us to visit it, accompanied by a WHO consultant (we were amongst the first to visit this centre). We were guided by the chief-pharmacist who gave us some information. The visit lasted only half an hour. We were not allowed to take photos nor samples (except a second World War Bandage and dental floss). We could not consult any document. We were able to make some rough estimations on what we saw.

IV.3 RESULTS

IV.3.1 Quantitative data

Table 7 : Summary of findings in terms of volume and weight of medical supplies

	access	total volume	estimated occupied volume	average specific weight (*)	estimated weight	estimated volume to be disposed of		estimated weight to be disposed of	
	%	m³	m³	kg/m³	ton	m³	%	m³	%
WEST MOSTAR Bjeli Brijeg hospital warehouse	100	7,600	1,100	200 250	245	850	77	183	75
EAST MOSTAR Zalik warehouse	20	680	243	200	48	220	92	44	92
TUZLA Federal Drug Logistic Centre	100	2,100	1,050	250	263	0	0	0	0
TUZLA Hospital Warehouse	100	9,000	3,000	250	750	ND	-	ND	-

(*) Weight is estimated in regards of volume. The volume of medical supply was roughly assessed comparing the total volume of the warehouse to the occupied volume. The specific weight is estimated according to the average specific weight collected from some of the main agencies involved in drug supplies. A specific weight of 250 kg/m³, unless otherwise specified, has been used (Annex 5).

IV.3.2 Qualitative observations

a. Bjieli Brijeg hospital warehouse

Mixed products, about 60% of the total, were not recorded because of their nature in itself. Total volume of sampled items represents 75 m³, that is to say 7% of the total content, and more than 10% of the sorted elements.

Table 8 : Evidences collected in Bjieli Brijeg hospital warehouse

	Composition	Manufacturer	Vol. m3	Exp. date	WHO EDL	MoH EDL	
1. Drugs							
Actigrip*	triprolidin, pseudoephedrin paracetamol	Wellcome Italia	2.0	09/94 05/95	N	N	(1)
Cardura*	doxazozin mesylate	Pfizer Inc USA	0.5	09/96	N	N	(2)
Clinoril*	sulindac	Merck Sharp & Dome USA USA	3.0	?	Y	N	(3)
Combist*	chlorpheniramine phenyltoloxamine phenylephrine	Procter & Gamble USA	1.5	12/92	N	N	(4)
Dapsone	dapsone	Weiders Pharmasøvtiske A/S Norway	1.5	08/93	Y	N	(5)
Goodys* headache powder	aspirin acetaminophen caffeine	Goodys manuf corp USA	1.5	12/97	N	N	(6)
Mevacor*	lovastatin	Merck Sharp & Dome USA	2.0	10/93	N	N	(7)
Mycostatin* vaginal tablets	nystatin	Squibb & sons USA	1.0	12/92	Y	Y	(8)
Pamprin* menstrual relief capsules	acetaminophen pamabrom pyrilamine	Chattem USA	1.0	11/94	N	N	(9)
Seldane* D	terfenadine, pseudoephedrin	Merrel USA	2.0	04/96	N	N	(10)
Sine Cod*	benzoxonium	Zyma Italia	7.0	01/95	N	N	(11)
Tussin* Liquid Gelcaps	guaifenesin, pseudoephedrin, dextromethorphan	Maxi Drugs, Inc USA	3.0	01/96	N	N	(12)
Tylenol* children's	acetaminophen	McNeil USA	4.0	11/95	Y		
Tylenol* C&F	acetaminophen, pseudoephedrine dextrometorphan	McNeil USA	3.0	08/93	N		(13)
Velonarcon*	ketamine	VEB Berlin-Chemie Germany	0.3	02/95	Y	Y	
Zinkoxidsalbe	zinc oxide paste	Germed Germany	3.0	2.45	Y	N	(14)
2. Non drugs							
Biosearch* Enteral Pump	enteric nutrition infuser	Biosearch USA	2.0	?	-	-	(15)
Kangaard*	irrigation tray	Kendall Healthcare Products Co USA	2.0	12/95	-	-	
Breast Pads		ND	3.0		-	-	(16)
Selfgrip* all in one sport tape / bandages	self-adhesive tape	UMA distribution USA	23.0		-	-	(17)
V* Lipsbanden	plaster tape fos.lidens	Germany	2.0	12.03	-	-	(18)

(1) symptomatic relieve of minor ailments, this association is rarely recommended
(2) does not belong to first-line antihypertensive drugs
(3) although expiry date was not collected, the drug was still valid at the time of visit
(4) symptomatic relieve of minor ailments; likely to have expired on arrival
(5) besides the dapsone stickers, the barrels also carried paracetamol stamps (with expiry date 07/93) so that confusion was at its peak. anti-leprosy drugs are definitely useless in BiH
(6) not practical and outdated packaging, this association is rarely recommended
(7) definitely a non essential drug in war-time, in particular when a country is rife with malnutrition and starving, the latter receiving international media-coverage
(8) likely to have expired on arrival
(9) symptomatic relieve of minor ailments, this association is rarely recommended
(10) symptomatic relieve of minor ailments, this association is rarely recommended stickers extending the expiry date were masking the genuine expiry date (04/93)
(11) symptomatic relieve of minor ailments: no proof of efficacy
(12) no clear advantage of this kind of association: not recommended
(13) symptomatic relieve of minor ailments; this association is rarely recommended; the NGO which help sending the aid too part in set up the WHO Guidelines on Drug Donation
(14) such outdated items were regularly found throughout this inspection, most likely a World War II leftover
(15) those infusers require special tubing that was not available; run on 110 V; a significant number of those infusers wore a « out of use » warning»
(16) usefulness definitely debatable
(17) tapes were no longer adhesive, many were retracted; the bulk of them accounted for one third of total sampling volume
(18) provided by the International Red Cross Federation, who contributed to the WHO Guidelines for Drug Donation

The warehouse consists of two main rooms, one on the ground floor, the second one just below.

Table 9 : Volume and weight of medical supplies in Bjieli Brijeg warehouse

	total volume m3	estimated occupied volume m3	average specific weight kg/m3	estimated weight tons	estimated volume to be disposed of m3	estimated weight to be disposed of tons
local 1 ground floor	5,600	600	200	120	all = 600	120
local 2 basement	2,000	500	250	125	min. 50% = 250	63
TOTAL	7,600	1,100		245	850	183

A rough assessment indicates that 40% of the content is sorted items clearly identifiable (the part we sampled) and 60% is mixed drugs in bulk, non-identifiable. From the drugs we sampled, we can observe that:

- 69% (11/16) are US products
- 38% (6/16) belong to the WHO Essential Drugs List
- 19% (3/16) belong to the Bosnia-Herzegovina Essential Drugs List
- 44% (7/16) are multicompounded drugs (whom 6 are US products) for minor ailments
- 94% (15/16) are expired drugs at the time of visit
- 81% (13/16) have household or sample packaging

b. Zalik warehouse

Table 10 : Volume and weight of medical supplies in Zalik warehouse

	total volume m3	estimated occupied volume m3	average specific weight kg/m3	estimated weight tons	estimated volume to be disposed of m3	estimated weight to be disposed of tons
Zalik room 1	540	200	200	40	200	40
Zalik room 2	140	40	200	8	20	4
Zalik room 3	UK	55	200	11	55	11
Zalik room 4	UK	max. 100	200	20	0	0

Rooms 3 and 4 were visited. The main content of the visited stores consisted of mixed unused drugs thrown away after rough sorting between sorted and unsorted. Most of the boxes were damaged. The greater part is unsorted packaging totally inappropriate for emergency purposes (mixture of many different brands and professional samples, sometimes partly used. Very few packages were coming from well known agencies (MSF, MDM, Caritas etc.). There was a large proportion of non essential drugs irrelevant to the emergency and local health conditions. Some boxes of plaster tapes (the same were found in the other warehouses).

c. Federal Drug Logistic Centre of Tuzla

About 10% of the content is occupied by US medicines. Most of them are the same we observed in West-Mostar. We noticed at random :

Drugs	Composition	Manufacturer	quantity	WHO EDL	MoH EDL
Clinoril	sulindac 150 mg	Merck Sharp & Dome, USA	20 000 tablets	Y	N
Robitussin Max Strength Cough & Cold Adults	guaiphenesin - pseudoephedrine - codeine	Robins, USA	2 550 syrup bottle arrived 10/05/96	N	N
Pamprin Multi-Symptoms	acetaminophen - pambrom - pyrilamine	Chattem USA	27 500 tablets	N	N
Dimetapp DM Elixir	brompheniramine, phenylephrine phenylpropanolamine, dextromethorphan	Robins, USA	3 048 syrup bottle arrived 05/96	N	N
Motrin IB Sinus	ibuprofen 200 mg- pseudoephedrin 30 mg	Upjohn USA	254 000 capsules arrived 10/05/96	N	N
Tylenol Extra-Strength	acetaminophen 500mg	MacNeil Consumer USA	ND	Y	Y
Stanback	acetaminophen 950mg	ND	ND	Y	Y

Three of those branded products were also found in Mostar, but, when identified, it was not the same NGO providing them (World Vision International in Tuzla and Catholic Mission Board N.Y. in Mostar). The same remarks as those made in Mostar apply to Tuzla :

- multicompounded drugs;
- mainly non essential;
- little size packaging;
- not requested.

We must point out that in the visited warehouses some drugs and medical materials provided by Muslim countries were encountered, representing less than 5% of the total. Regarding what we saw, there are no particular critics to formulate in terms of content and packaging.

d. Tuzla Hospital Warehouse

The bulk of products in this warehouse is composed of closed boxes originating from the main donors of the conflict (WHO, UNHCR, MSF/H, PSF, ICRC, governments).

The expired medicines and products, had been disposed of on a regular basis. They showed us some expired products that were still to be disposed of, representing a maximum of 5% of the total volume. The hospital pharmacist , who was with us, told us that 70% of the volume of medicine and products was unusable (mainly mixed medicines). She also added, that since 1992, they have had to dispose of a volume of two truckloads per month (if we consider a weight of 2 tons per truck, it represents a weight of 48 tons per year and close to 500 tons to this day). It seems that the sheer quantity of donations submerged the capabilities of the local management system and probably exceeded part of the needs, as seems to indicate the large portion of unopened boxes originating from the major agencies, and whose contents are generally relevant and usable.

It is worth mentioning the following interesting discoveries : over 10 m3 of cardboard boxes containing small boxes of dental floss, a little over 250.000 (Manufacturer Johnson & Johnson USA, origin USAID). Various flavours are available (Cinnamon, mint, ...). In total, about 1700 km of dental floss at an average of 6.7 m per box. We have samples (n. 28).

The pharmacist told us that they had received during the conflict 9 truckloads from Sweden of Second World War medical supplies, for the main part consisting of bandages that turned to dust when unpacked. Most of this has been burned. During our visit, we noted some products coming from this donation (In particular some sterile compresses 20X30 cm dated 1940, sterilised again in 1969, coming from the Swedish army and field dressing « joint services, dressing first aid, field, camouflaged » not dated, but most probably from the same period).

IV.3.3 Summary of findings

The general consensus is that within the unusable medicines, unsorted unused medicines, in bulk and small packaging, represent the essential problem in terms of volume. We were able to ascertain this in Mostar and Tuzla, taking into account sorted volumes and/or destroyed volumes.

Bijeli Brijeg warehouse	50% of content are mixed products. A great volume of unusable aid, unused medicines for the most, has been forwarded to GRUDE in a makeshift depot. There would still be about 30 tons, a big proportion having been destroyed
Zalik warehouse	Over 90% of the products seen and to be destroyed in the 2 warehouses we visited are unused drugs.
Federal drug logistic centre of Tuzla	Opened in October 1994. Practically no unused medicines in the warehouse, as the unusable arrivals (about 50% from what the responsible told us), mostly unused medicines, were refused or immediately destroyed
Tuzla hospital warehouse	500 tons of medicines apparently have been destroyed since the beginning of the conflict, mainly unused medicines (the equivalent of 2 truck loads per month) During the visit, the content of the warehouse was estimated at 750 tons. For the essential crates originating from the main agencies (UN and NGOs) or from governments. The used or dispatched volume during the conflict is unknown

V. CONCLUSIONS ON THE DRUG DONATIONS PRACTICES IN BIH

The following analysis draws qualitative and quantitative conclusions from the evidences collected during the field study.

It proposes:

a) a typology of the donation practices with a description of their characteristics (Table 12) and an evaluation of their disadvantages and advantages (Table 13);

b) an estimation of the total volume of medical supplies delivered to BiH during the war and the proportion of appropriate and inappropriate medicines (Table 14);

c) an economic appraisal: opportunity cost of drugs to be disposed of (Table 15) and cost/benefit analysis for the donor and the recipient (Table 16).

V.1 TYPOLOGY AND CHARACTERISTICS OF THE DONATION PRACTICES

Visits to warehouses and analysis of gathered information permitted the identification of three types of donation practices:

1. ***Good donor practices***, in accordance with WHO inter-agency guidelines for drug donations.

2. ***Donations of mixed unused medicines***, i.e. delivery of small and non-professional consignments of unsorted medicines and free samples collected from private homes, health professionals and charities.

3. ***Drug dumping***, i.e. deliberate or well-intentioned donations of large quantities of useless or unusable medicines, generally under the form of large packaging units or hospital conditionings.

The following table illustrates some examples drawn from the field study.

Table 11 - Examples of drug dumping donations as observed during the field study

Expired on arrival	*Irrelevant to the situation*	*Professional samples*
World War II army medical supplies (1940)	multicompounded medicines(*) (Tylenol®, Goodys®, Tussin®, Actigrip®, Pamprin®, Seldane®, Combist®)	Combist® (expired 12/92) (*)
Plaster tapes (1961)	Dental floss (*)	Tylenol® (expired 08/93) (*)
Seldane® in sample format (1990 concealed by a sticker indicating 1993) (*)	Mevacor® (*)	Cardura® (1996)
Biosearch® enteral pump	Dapsone	Seldane® (*)
Sellgrip® sport tape	Sine Cod® throat pastilles (*)	
	Breast pads	

(*) not in WHO essential drug list

Table 12 - Typology and characteristics of drug donation practices in BiH

Donations practices and suppliers	Characteristics of suppliers and programmes	Characteristics of donations	Characteristics of the supply and distribution practices
I. Good donor practices conform to WHO guidelines ⇨ UN agencies (WHO, UNICEF, UNHCR) ⇨ International medical relief NGOs ⇨ (ICRC, MSF, PSF, MDM) ⇨ Bilateral aid	*Programme practices* - specialised drug supply programme with regular large scale deliveries, planned distribution schedules (sometimes including technical assistance to health structures) deliveries - expertise in health and pharmaceuticals - represented in the field - participation in coordination efforts - monitoring activities *Funding practices* funding from governmental and/or intergovernmental donors (e.g. ECHO, ODA, Scandinavian governments)	based on needs assessment and requests from the beneficiaries - only essential drugs - high quality and reliability of medicines - relevant to emergency situations often pre-packaged kits in the initial phase (with sometimes problems of medicines in excess or irrelevant to the local conditions) and in the second stage supplies responding to specific requests and needs - proper labelling and packaging	*Procurement practices* - ordered through own procurement centre or logistic unit with specific expertise in purchasing pharmaceuticals *Distribution practices* - own distribution channel and logistic centres in the field monitoring arrival, storage and dispatch of consignments to beneficiaries - direct distribution to final beneficiaries - transport costs are covered up to final beneficiaries - deliveries are made according to planned distribution schedules - deliveries usually cover several health facilities in one specific area or several areas
II. Donations of mixed unused medicines in small quantity packs ⇨ Private individuals, mainly from France, Germany and Italy ⇨ Bosnian Diaspora and refugees abroad ⇨ Small charities	*Programme practices* - emotional response of well-meaning private individuals - no expertise in health and pharmaceuticals - not represented in the field - small scale programme with one-off or several irregular deliveries - no support to local health structure - no participation in coordination efforts - no monitoring activities *Funding practices* collecting medicines and funds from private individuals	- unsolicited - unannounced - unsorted packaging totally inappropriate for emergency purposes (mixture of partly used packages of many different brands and professional samples; sometimes drugs are mixed with other relief items) requiring significant resources for sorting and repackaging - large proportion already expired on arrival - full course not available - large proportion of non essential drugs irrelevant to the emergency situation and local health conditions	*Procurement practices* non-discriminatory collection of unused drugs from private individuals and/or GPs and pharmacies *Distribution practices* - consignments usually arrive unaccompanied straight to a selected health facility or without any definite destination and therefore delivered at random to a health facility or to a central warehouse (e.g. UNHCR logistic centre, relief agencies warehouses, health authorities, etc.) - transport costs to the recipient country are covered by the individuals organising the action
III. Dumping of large quantity packs of inappropriate medicines A. Usually through well-meaning international relief agencies (World Vision International, Ordre de Malte, Caritas, national Red Cross Societies) B. Sometimes directly from: ⇨ Health professionals ⇨ Pharmaceutical companies ⇨ Foreign armies (Sweden, Germany) C. Dubious commercial transactions Note: characteristics are not detailed for B. and C.	*Programme practices* - one-off or irregular deliveries, usually unplanned and part of a general relief programme (food, shelter, psychological support, sanitation, etc.) - usually not represented in the field - no support to local health structure - little participation in coordination efforts - no monitoring activities *Funding practices* - receiving in-kind donations from health professionals and pharmaceutical companies funding from public fund-raising but also governmental and sometimes intergovernmental donors (often US)	- often unsolicited and unannounced - huge quantities of sorted useless medicines, especially from US companies - mainly non essential drugs (often multicompounded formula) - pharmaceutical samples or household packaging from health facilities and pharmaceutical companies - often unknown by local health professionals or irrelevant to an emergency situation - sometimes already expired on arrival or more often close to expiry date (shelf life < 1 year) - labelling ambiguous, non-informative, without generic names, languages not understood locally, without package inserts, etc.	*Procurement practices* either indiscriminately accepting in-kind donations from hospitals, health professionals and pharmaceutical companies, either purchasing medicines, without specific expertise and well-established procurement practices for pharmaceuticals *Distribution practices* - some agencies may have a distribution and logistic base in-country but usually consignments arrive unaccompanied and are either delivered to a selected health facility, either arrive without any definite destination and are therefore delivered at random to a health facility or to a central warehouse (e.g. UNHCR logistic centre, relief agencies warehouses, health authorities, etc.) - transport costs to the recipient country are usually covered

Table 13 - Advantages and disadvantages analysis

Donations practices	Advantages / Disadvantages analysis			
	Advantages		Disadvantages	
	Donor	Recipient	Donor	Recipient
I. Good donor practices conform to WHO guidelines	At NGO level - Fulfilling their humanitarian objectives - High visibility & media coverage At financial donor level: - Political interest - High visibility & media coverage	Receiving appropriate assistance alleviating suffering	restraint to conform to good-practices (locking system)	Sometimes the donated drugs are not always adapted to the local needs, particularly in the case of pre-packaged kits.
II. Donations of unused medicines	At individual or NGO level - self-satisfaction of doing good At country level - Avoiding pollution caused by wasted medicines Saving costs on the collection and destruction of unused medicines	marginal	At country and NGO level: Negative public image of donor countries and NGOs (the local population may feel very negative about inappropriate foreign assistance and such practices detract from the positive elements of international relief operation.) At the financial donor level (if any): they have paid for useless actions	Stockpiling of unusable drugs cluttering up storage depots, resulting in shortages of space for essential medicines Handling and sorting such mixed boxes is time and resource consuming for local professionals The collection, storage and destruction of useless donations request important financial, human and technical resources, often not available in the stricken country Health and environmental hazards
III. Drug dumping	At the pharmaceutical company level - tax reductions (US) - avoiding disposal costs in case of donations of expired medicines or surpluses of unusable medicines - visibility & media coverage - creating through donated medicines new consumption habits and brand dependence at the recipient level	very marginal	At the company level: - risk of media scandal and negative public image At the country level: - Negative public image of donor countries and NGOs (the local population may feel very negative about inappropriate foreign assistance and such practices detract from the positive elements of international relief operation.) At the financial donors level (if any): they have paid for useless actions	- Stockpiling of unnecessary or expired drugs cluttering up storage depots, resulting in shortages of space for essential medicines Handling such donations is time and resource consuming for local professionals The collection, storage and destruction of irrelevant and expired medicines request important financial, human and technical resources, often not available in the stricken country Health and environmental hazards

V.2 ESTIMATED VOLUME OF MEDICAL SUPPLIES DELIVERED TO BIH

The total volume of medical supplies delivered to BiH throughout the war has been estimated according to the following conclusions and hypothesis drawn from the information and data presented in this report:

A. The bulk of the donations in accordance with WHO guidelines were delivered by four professional international relief agencies (MSF/H, PSF, ICRC and WHO). As calculated in Table 4 (cf. §III.4.2), their contributions amounted to a total of **11,000 tons**.

B. Other international agencies (such as MDM, MSF/F, MSF/B, Handicap International, the National Red Cross and Red Crescent Societies, AICF, UNICEF (vaccines) and UNHCR) also delivered supplies in conformity with WHO guidelmines, but on a lower scale. They could not provide a detailed account of the volume of medicines they delivered throughout the war. Based on general information they provided, their contributions were estimated at no more than 20% of the total quantity donated by the four agencies. Thus, their donations totaled 20% of 11,000 tons; that is to say **2,200 tons**.

C. Therefore, donations in conformity with WHO guidelines (cf. §V.1) amounted to around **13,200 tons**.

D. However, about 5% of these donations were considered inappropriate, partly because initial supplies mainly consisted of pre-packaged medical kits designed for refugee situations in developing countries and thus not fully adapted to the health needs of former Yugoslavia, and partly because some medicines were in excess while there were shortages of others (cf. §III.4.2).

E. As for the other suppliers (most of the non-specialised agencies, the foreign armies, the Bosnian Diaspora and other sources (cf. §III.3 and §V.1), they delivered aid according to donations practices II and III (respectively donations of mixed unused medicines and drug dumping). We considered that all donations resulting from drug dumping were inappropriate. Based on Table 2 (cf. §II.2.2), we assumed that 10-15% of the mixed unused drugs were appropriate.

F. Finally, we estimated that donations of mixed unused drugs accounted only for a marginal part (a maximum of 10%) of all appropriate donations; the bulk of which (at least 90%) resulting from donations in accordance with WHO guidelines.

G. As indicated in Table 1 (cf. §II.1) and Table 5 (cf. §III.4.3) on the quality of drug donations, we estimated that 50 to 60% of drug donations to Bosnia and Herzegovina between 1992 and mid-1996 were inappropriate.

Based on these conclusions and estimates, the total volume of drug donations delivered to BiH was compiled. The key results are shown in Table 14. Calculations are detailed in Annex 6.

Table 14 - Estimations of drug and medical material donated by international aid to BiH from 1992 until mid-1996

Types of donation practices	Donations in tons	% of total donations	Inappropriate donations in tons	% of total inappropriate donations
I. In accordance with WHO guidelines	13,200	38 to 48%	700	5%
II. Mixed unused drugs	9,300 to 14,000	33 to 40%	7,900 to 12,600	60%
III. Suspected drug dumping	5,300 to 7,600	19 to 22%	5,300 to 7,600	35%
Total	27,800 to 34,800	100%	13,900 to 20,900 (average of 17,000 tons)	100%
% of total donations			*50 to 60%*	

In conclusion

- **International aid to Bosnia and Herzegovina donated an estimated quantity of 27,800 to 34,800 tons of medical supplies in 4.5 years, i.e. 2.3 to 2.9 kilograms per person per year** (based on the United States Census Office projection of 2,656,240 inhabitants in BiH in 1996). For the sake of comparison, in 1989, Armenians affected by an earthquake received 7.1 kilograms per person over one year [5], and the total quantity of drugs sold each year in france represents 1 kilogram per person [42].
- **Useless and unusable medicines represented 50 to 60% of the donations, averaging 17,000 tons.**
- **Mixed unused drugs accounted for 60% and dumping practices for 35% of all inappropriate donations.**
- **Four international agencies with health relief expertise, together with smaller organisations, contributed more or less 40 to 50% of all donations, delivering around 13,200 tons of medical supplies, out of which 95% were considered appropriate.**

V.3 ECONOMIC APPRAISAL

The monetary valuation of drug donations is based on the following unit costs per ton of medicines:

- market value: 12,200 USD (source: Annex 5)
- destruction cost: 2,000 USD (source: waste management expert)
- transport by truck from Western Europe to Sarajevo, insurances, local transport, handling and distribution costs: 500 USD (source: MSF-B).

Therefore, the 27,800 to 34,800 tons of medical supplies donated to Bosnia and Herzegovina in 4.5 years of relief efforts represented an overall market value of 339 to 425 millions USD.

a. Opportunity cost of the inappropriate donations

The 17,000 tons of inappropriate drugs to be destroyed represent an opportunity cost of 250 millions USD, taking into account direct costs only (as shown in Table 15). In addition, institutional donors are currently funding programmes for managing and sorting useless and unusable medicines and finding solutions for proper disposal of these inappropriate donations (cf. §III.5 and III.6). This amount of money could have been used for better alternative assistance. As an indication, an amount of 250 millions USD would have allowed the reconstruction of around 26,000 houses (including schools, health facilities and roads) for 129,000 persons.

Table 15 - Opportunity cost of drugs to be disposed of in BiH (value as of September 1996).

Cost item	In million USD
Market value	207.5
Transport and distribution costs	8.5
Destruction costs	34.0
Total	**250.0**

b. Cost/benefit analysis for the donor and the recipient

Table 16 compares for the donor and the recipient the direct financial impact of a donation of one ton of medicines supplied by trucks from Western Europe according to each of the three donations practices. It clearly indicates that donations of inappropriate drugs cause more harm than good for the recipient country. For each donated ton of mixed unused drugs drugs, the recipient must face a loss of at least 2,000 USD/ton representing the destruction costs of the unusable medicines while the donor country gains 1,500 USD/ton, as it saves destruction costs of unused medicines. In the case of drug dumping, the result of the cost/benefit analysis is even more dramatic as it shows the huge gain humanitarian donations bring to the donor without doing any good at all to the recipient country which has to pay for the destruction of the useless medicines.

Therefore, 17,000 tons of inappropriate medicines represented at least a gain of 25.5 millions USD and a loss of 34 millions USD for Bosnia and Herzegovina. Moreover, donors may also benefit from tax deductions resulting from "humanitarian gifts" [8]. For the recipients, additional costs may be added such as collecting, storing, handling, sorting and managing useless and unusable medicines. Health and environmental hazards should also be taken into consideration: pollution, erroneous utilisation of medicines, poisoning, disincentive effects on good prescription and/or consumption habits as well as the risk of fuelling black market practices.

Table 16 Cost/benefit analysis in USD for the donor and the recipient based on 1 ton of donated drug

DONATIONS PRACTICES	DONOR	RECIPIENT
Donation practice I eg. 1 ton of pre-packaged kit	*Costs: 12,700* Purchase of drugs: 12,200 Transport and distribution: 500 *Benefits: 0*	*Costs: 0* *Benefits: 12,700* Value of appropriate donations
Cost/benefit balance	***- 12,700 USD***	***+ 12,700 USD***
Donation practice II eg. 1 ton of unused drugs collected from private homes by a well-meaning association of citizens	*Costs: 500* Purchase of drugs: 0 Transport and distribution: 500 *Benefits: 2,000* Avoiding destruction costs	*Costs: 2,000* Destruction costs *Benefits: 0*
Cost/benefit balance	***+ 1,500 USD***	***- 2,000 USD***
Donation practice III eg. 1 ton of nearly expired drugs donated by a pharmaceutical company	*Costs: 500* Market value of donated drugs is 0 (they cannot be sold as they are due to expire) Transport and distribution: 500 *Benefits: 14,200* Avoiding donating good drugs (thus avoiding the loss of sale of 12,200) Avoiding destruction costs: 2,000	*Costs: 2,000* Destruction costs *Benefits: 0*
Cost/benefit balance	***+ 13,700 USD***	***- 2,000 USD***

VI. RECOMMENDATIONS FOR IMPROVING QUALITY AND EFFICIENCY OF DRUG AND MEDICAL MATERIAL DONATIONS IN EMERGENCY SITUATIONS

Recommendations are made at three levels:

1. the policy level (international guidelines and regulations, national drug policies, regulations for drug donations and disposal of pharmaceutical waste in donor and recipient countries);
2. the advocacy and information level (awareness raising and campaigning activities, international monitoring of drug donations);
3. the operational level (coordination and management of medical donations, guideline for efficient drug donation programmes).

VI.1 RECOMMENDATIONS AT THE POLICY LEVEL

VI.1.1 Actions at international level

a International adherence to and compliance with the guidelines for drug donations

Governments, pharmaceutical companies and NGOs are urged to adopt drug donation policies and mechanisms which strictly comply with the WHO inter-agency guidelines for drug donations.

It is encouraging to see that, among the hundred individuals who contributed to the development of those guidelines, were present not only representatives of intergovernmental agencies, but also members of large NGOs, universities and major pharmaceutical companies. On the other hand, the fact that inappropriate medical supplies produced by those pharmaceutical companies and delivered through some of those NGOs still continue to be found, is baffling and raises concern regarding the adhesion of those companies and NGOs to the guidelines principles and recommendations.

It is essential that the WHO inter-agency initiative does not remain limited to intention, with limited dissemination. Similar initiatives have previously been developed (such as CMC and ICRC guidelines) without any significant achievements to improve in the quality and appropriateness of donations in subsequent crisis and disasters. Bosnia is sadly just one more example of large scale "misdonations".

b. International convention enforcing the guidelines for drug donations

The ultimate goal of "good donation practice" promoted by the WHO inter-agency guidelines is not only to achieve better efficiency but also to pave the way for the development of genuine ethics for medical emergency relief.

Therefore, the prime objective of authorities at the international and national levels should be to enforce those guidelines. Several international and national regulations and policies regarding import/export of pharmaceutical supplies and movement of medical waste are already in place and should be implemented in case of drug donations with necessary adjustments to specific conditions of emergency and development aid. The fact that double standards still exist, allowing everything labelled "for charity purposes" to officially leave donor countries almost uncontrolled and be dumped in recipient countries, generally ill-prepared and overwhelmed in times of emergency, is all the more unacceptable whereas circulation of expired drugs and products inside and outside signatory countries to the Basel Convention is very strictly regulated.

Concrete proposals for institutionalising the guidelines and regulating donation practices are as follows:

1. to develop an international convention regulating the international movement of pharmaceuticals and medical products for humanitarian purposes in acute emergency or as part of development aid in non-emergency situations. The convention should make into force of law the following recommendations given in the guidelines:
   - enforcing WHO Certification Scheme on the Quality of Pharmaceutical Products Moving in International Commerce (guideline 4);
   - prohibiting drugs that have been issued to patients and returned to a pharmacy or elsewhere or given to professionals as free samples (guideline 5);
   - prohibiting drugs with a remaining shelf-life of less than a year (guideline 6);
   - enforcing proper labelling (guideline 7);
   - enforcing proper packaging (guideline 8).
2. to strictly apply the international agreement regulating the movement of toxic and/or dangerous waste, known as the "Basel convention", to charitable drug donations, including the case of donations to non-signatory recipient countries.

VI.1.2 Actions at donor level

a. Rationalising national drug policies

Humanitarian donations of huge quantities of partly used drugs collected from private homes is the result of health systems and pharmaceutical policies in Western countries which lead to around 40% of distributed medicines never being used [42]. This raises the question of the collection and destruction policies of those unused medicines. Organising systematic and proper collection and destruction is very expensive for the authorities. In the end, doesn't the evacuation of unused drugs through the humanitarian channel suit

everybody with, in addition the (feigned or genuine) feeling to do good ?
Humanitarian donations of surpluses from health facilities and pharmaceutical companies raise similar concern regarding pharmaceutical production policies, drug procurement and management procedures of health care systems as well as tax benefits for exports of drugs for charitable purposes. Cheap and easy clearing of excess stock and costs saving on expensive waste disposal results in evacuating surpluses and expired drugs through the humanitarian channel ?

Relevant authorities are urged to rationalise national drug supply, distribution and consumption policies at the manufacturer, prescriber and consumer levels, as recommended for several years by WHO in its essential drugs principles This will significantly reduce the quantity of wasted drugs and therefore the resulting "humanitarian dumping"

b National regulations for the disposal of pharmaceutical waste from households and health professionals

In addition, authorities are urged to define clear and appropriate measures and regulations ensuring the proper management and disposal of unused pharmaceuticals from households and health professionals (GPs and pharmacies), and prohibiting the collection and delivery of those medicines for humanitarian purposes The only way to dispose of unused medicines should be to destroy them

c National regulations enforcing the guidelines for drug donations

Relevant authorities in donor countries are urged to enforce WHO standards and guidelines and therefore

- to apply existing national export regulations to the delivery of medical consignments for charity purposes, after reviewing and adjusting those regulations to WHO principles and to the conditions of emergency situations,
- to review procedures for granting tax benefits in case of charitable gifts, in order to avoid incentives for inappropriate drug donations, and enforce stricter control on the quality and appropriateness of the donations.

d Funding procedures for drug donations

- Intergovernmental and national funding agencies (e g ECHO, UN, governments, foundations, etc.) should review and revise their procedures for granting funds for drug donation projects to ensure that implementing agencies comply with the WHO inter-agency guidelines and have expertise in that field.
- Intergovernmental and national funding agencies should integrate in their funding policies provision for supporting central coordination efforts in times of emergency (refer to recommendation VI 3 2)

VI.1.3 Actions at recipient level

Relevant authorities in recipient countries are urged to develop measures and regulations promoting good quality drug donations and ensuring stricter control upon foreign humanitarian medical assistance, such as

- establishing a National List of Essential Drug based on WHO's model list and accepting only medicines included in that list,
- developing a policy on donations of pharmaceutical supplies enforcing the WHO inter-agency guidelines for drug donations, including
- specific custom regulations and quality control adjusted to emergency situations
- procedures for being advised in advance of the donations characteristics
- procedures for refusing entry of humanitarian consignments deemed inappropriate
- procedures for disposal of pharmaceutical waste
- implementing emergency preparedness programmes in disaster-prone areas (ref PAHO, UNHCR, WHO guidelines),
- at the onset of an emergency, setting up an operational medical coordination centre in collaboration with the international assistance, with prime responsibility for coordinating and managing in-coming aid as well as informing donors on needs and priorities (refer to recommendation VI 3 1)

VI.2 RECOMMENDATIONS AT THE INFORMATION AND ADVOCACY LEVEL

VI.2 1 Actions at international and donor levels

a Networking, centralising information and monitoring

NGOs and health networks are urged

- to create a non-governmental advisory committee to WHO should be created to assist WHO in monitoring drug donations practices and compliance with the international guidelines and regulations on drug donations and, where appropriate, review guidelines and regulations The committee should comprise major operational relief and development NGOs as well as health networks actively concerned with the issue of drug donations (ICRC, IFRC, MSF, PSF, WCC, OXFAM, WEMOS, AEDES, HEALTHNET, HAI ReMed, PIMED, etc). One organisation should take the lead in setting up such a committee and coordinating activities
- to establish a central point where information, data, reports, guidelines, policies, etc related to the issue of drug donations could be reported to, collected, recorded, sorted and stored in a systematic way The centre should act as a reference library on drug donation issues WEMOS is particularly interested to promote this idea
- to create national working groups following the initiatives implemented in the Netherlands (refer to Chapter II) or eventually expand the Dutch working group into a European group.
- to conduct regular and systematic evaluations of drug donation programmes, comprehensive analytical studies (e g the Armenian study [5]) as well as fact-findings activities in order to monitor drug donation practices and assess the use and the impact of guidelines and regulations concerning drug donations

b Raising awareness and information

- Whenever a disaster strikes, governments, NGOs and media are urged to provide accurate public information on priority needs, appropriate kinds of items to be donated, recommended channels of distribution and established policies and regulations in donor and recipient countries.
- Governments, NGOs and media should join efforts to raise awareness among the general public about good donor practices and the negative impacts of collecting and donating unused drugs, unsold surpluses, expired drugs and pharmaceutical samples (e g initiatives of the Dutch government and the Dutch NGO working group should be followed).
- Health networks, intergovernmental agencies and NGOs are urged to develop advocacy, campaigning and lobbying actions on the use, supply, distribution and donation of medicines Coordination of efforts and active participation in existing networks are strongly recommended.
  Individual and joint actions should be targeted at the international community, governments of donor and recipient countries, the pharmaceutical industry, the health care sector in donor and recipient countries, as well as the general public in donor and recipient countries They should particularly aim at
  - drawing attention to abuses and problems caused by inadequate and unsolicited drug donations,
  - promoting and disseminating WHO's essential drugs concept and inter-agency guidelines for drug donations,
  - calling for the development of an international convention and national regulations enforcing the guidelines and prohibiting bad donation practices

VI.2.2 Actions at recipient level

It is the prime responsibility of recipient countries, which should ask for WHO assistance, to specify their needs, to request foreign assistance and to clearly inform donors on needs and priorities.
Health authorities are urged to report cases of inappropriate donations and to encourage foreign agencies as well as journalists to investigate and monitor drug donation practices.

VI.3 RECOMMENDATIONS AT THE OPERATIONAL LEVEL

VI.3.1 Coordination and management of the medical emergency assistance

a. Central medical coordination

From disaster to disaster, it has been endlessly repeated that the single most important step to ensure the best response in times of emergency is to centralise the coordination of the relief activities. It is deemed essential to repeat it again!

A pro-active ***Emergency Medical Coordination Centre*** should be set up in the recipient country at the onset of a disaster. It should be implemented under the auspices of the national MoH with the assistance of WHO and actively involve the major medical relief agencies implementing programmes in the field. Under its supervision, ***Regional Medical Coordination Centres*** should be established in each region (province, canton or district) and comprise representatives of the regional (provincial, cantonal or district) health authorities, directors of major health care services and medical field coordinators of relief agencies.

The role of the Emergency Medical Coordination Centre is to be the single focal point for medical coordination. Its key tasks should be:
- to establish clear overall direction and set priorities for external emergency health operations;
- to develop and disseminate appropriate guidelines and instructions to all those engaged in health-related activities;
- to ensure adequate monitoring of the health care situation, emergency health care activities and offers of external medical assistance;
- to coordinate between donors, implementing agencies and beneficiaries;
- to issue clear news releases.

Several guidelines for the coordination and management of medical aid in times of emergency exist and should be referred to (ref. PAHO, UNHCR, WHO, etc.).

b. Coordination and management of medical supplies

Regarding the coordination and management of medical supplies, the Emergency Medical Coordination Centre should create a ***Central Drug Management Committee*** responsible for ensuring consistency in the drug supply, distribution, management and monitoring chain. Its tasks should comprise:
- developing (if it does not exist yet) a national list of essential drugs in conformity with WHO recommendations;
- issuing clear guidelines for the proper channels of procurement, storage and distribution of medicines and medical material;
- accurately brief all potential donors, diplomatic missions, NGOs, media, etc. on the pharmaceutical needs and procedures for external assistance;
- ensuring coordinated and on-going needs assessment;
- centralise the collection, processing and analysis of data on pharmaceutical donations, needs and requirements;
- setting up standard formats for the surveillance and reporting system of drug donations;
- encouraging integration of emergency medical supply and distribution assistance within the traditional supply and distribution structures of the recipient country and encouraging the reinforcement of the traditional supply, distribution, storage and cold-chains capacities of the recipient country;
- establishing clear regulations for the management and disposal of useless or expired drugs;
- supporting the establishment of ***Regional Drug Management Committees***.

The Regional Drug Management Committees should involve the Drug Advisors or Chief Pharmacists of the local health authorities, major health care facilities and pharmacists or medical coordinators of relief agencies implementing specific drug supply and distribution programmes. These committees should act as a clearing-house for all in-coming medical donations in their region.

Their responsibilities should include [5, 56]:

⇨ registering all available information on pharmaceuticals in the region:

- needs and requests from local health services;
- ordering and distribution plans of relief agencies;
- arrival and destination of incoming medical supplies and donations locally; in order to provide on a regular basis:
- running lists of local drugs and medical material available;
- up-dated lists of local medical needs.

⇨ coordinating external procurement to avoid duplication, overlapping and gaps:

- inform recipients of what is available where;
- inform suppliers of what is needed where and what is already procured for;
- request to be informed in advance of the details of shipments and swiftly approve, reject or dispatch medical donations.

⇨ monitoring the drug supply and distribution in the region:

- to keep recipients and suppliers informed of guidelines, procedures and standard formats regarding medical supply assistance;
- to provide technical assistance to managers of local medical stores in the form of standard formats for inventory control, cross-indexes for drug identification, notices and labels in local languages for unfamiliar medicines, instruction leaflets for efficient drug usage, etc.
- to regularly liaise with and report problems with donors and suppliers to the Central Drug Management Committee;
- to monitor surpluses, duplication and shortages of medicines;
- to collect and centralise unsolicited gifts and useless supplies in a central warehouse where they should be recorded, safely stored and disposed of.

VI.3.2 Role of the international community in the coordination and management process

a. Funding coordination activities

Donors should include, in their funding strategies for emergency situation, provision for coordination programmes. They should encourage, at the onset of a disaster, competent agencies (WHO or another agencies to be assigned) to design and submit, in collaboration with the health authorities in the recipient country, proposals for the creation and management of operational coordinating bodies such as the Emergency Medical Coordination Centres and Drug Management Committees as explained here above.

In an emergency situation, there is a need for one international agency to be assigned the leading role in assisting the local authorities in the central coordination of medical assistance. At regional level (provincial, cantonal or district), specific relief agencies with adequate competence and operational capacities should lead the regional coordination in collaboration with the regional health authorities. Logically, WHO should be assigned as

the leading agency for coordination at central and regional level, but to achieve efficiently this role, WHO should, on one hand, receive adequate financial support to set up efficient coordination centres (staff, vehicles, communication equipment, computers) and, on the other hand, seriously increase its competencies and capacities to become rapidly operational in the field in times of emergency. WHO could also delegate field operational coordination activities to well-known medical relief NGOs (such as PSF, MSF, etc.) and keep a strategic supervisory, advisory and policy role.

b. Setting up standard coordination practices

Under WHO auspices, UN agencies, relief NGOs and representatives of the health authorities of recipient countries should meet and share their experiences in drug donations in times of emergency with a view to set criteria and standards for coordination activities, establish pre-determined coordination structures, develop tools and software for the management of drug donations (standard inventory control, data gathering, record keeping instructions, ordering procedures, etc.)

VI.4 RECOMMENDATIONS FOR EFFICIENT DRUG DONATION PROGRAMMES

This guideline is intended for organisations and individuals setting up drug donations activities in response to an emergency.

Organisations or individuals wishing to get involved in drug donation activities should always strictly comply with the WHO inter-agency guidelines for drug donations, paying particular attention to the type of drugs, identification of drugs, labelling and packaging.

In addition, prior to any drug donation programmes, organisations and individuals should carefully take into account the following elements:

1. Type of supplies

⇨ External drug supplies are needed only when local production cannot meet the initial demand. Therefore, as far as the context allows it, restoring or reinforcing local pharmaceutical production capacities as soon as possible is a priority.

⇨ In the initial phase of an emergency, it is recommended that suppliers only deliver essential drugs, preferably in the format of pre-packaged emergency kits, to be adapted to the local conditions and type of disaster (natural, conflict, health status, etc.). This particularly falls into the competencies of specialised relief agencies such as ICRC, PSF, MSF, WHO, UNHCR and MDM.

⇨ Once the acute emergency phase is over, suppliers should review their programmes towards the regular provision of specific pharmaceutical needs and delivery of bulk supplies rather than pre-packaged kits.

⇨ Suppliers should always carefully check the quality, expiry date and appropriateness of all in-kind donations of medicines they may receive or collect. They should strictly refuse pharmaceutical samples, non-essential drugs, partly used medicines in mixed boxes and unsold surpluses of expired or inappropriate medicines.

2. Needs assessment

Coordinated assessment of needs is a prerequisite for efficient assistance. Potential suppliers should identify and take into account local priorities and any established local practices, mechanisms and policies put in place in the recipient country (such as the national list of registered drugs, drug policies and regulations, drug supply and distribution patterns and channels) in order to conform to and not to by-pass the medical supplies management system of the recipient health authorities.

3. Management

⇨ Suppliers should closely cooperate with the Emergency Medical Coordination Centre and Drug Management Committee set up in the recipient country and strictly conform to their recommendations.

⇨ Suppliers should always notify the recipient (the end-user but also the Drug Management Committee) in advance of the content and shipment of their donations (detailed shipping list and adequate information in a language understood in the recipient country) and comply with the recipient's recommendations for delivery.

⇨ Drug donation programmes should be designed and monitored under the supervision of an experienced health professional (ideally a pharmacist) based in the field throughout the duration of the programme, avoiding field staff rotation as much as possible.

4. Logistics

⇨ Suppliers should pay attention to the logistical capacities of the recipient health facilities regarding drug management (availability of staff, storage, handling, transport and monitoring resources). Where appropriate, drug donation programmes should incorporate technical assistance providing for experienced expatriates (pharmacists, logisticians), recruitment of additional local personnel, rehabilitation of infrastructure, storage and handling equipment, transport and telecommunication means, efficient inventory control system (computerised or manual) and training of pharmacists, storekeepers and logisticians.

⇨ Suppliers should always accompany their donations up to destination.