

SUR PLACE

THE ITALIAN ARMY MEDICAL CORPS IN THE UNITED NATIONS «PEACE-KEEPING» OPERATIONS : SOMALIA AND MOZAMBIQUE, DECEMBER 1992-DECEMBER 1994

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ABSTRACT - The Italian Army took part in the United Nations peace keeping operations in Somalia from December 1992 to March 1994 and in Mozambique from April 1993 to December 1994. These two missions involving a total of 16 358 men were very different technically, logistically, and epidemiologically. In Somalia the main pathology observed was traveler's diarrhea which affected 55 % of the personnel. In Mozambique the main problem was malaria. A combination of chloroquine and proguanil was poorly effective but replacement with mefloquine gave good results. These two missions which were the first undertaken by the Italian Army outside the Mediterranean basin since the Second World War allowed testing of the readiness of materials, equipment, and personnel. Other missions in Lebanon, Turkey, Kurdistan, and Albania greatly benefited from the information obtained in these two initial operations.

KEY WORDS - Peace-keeping missions - Somalia - Mozambique.

With the resolutions n° 775 of August 28, 1992 and n° 794 of December 3, 1992, the United Nations (UN) decided to start a «Peace-keeping» operation in Somalia. Similarly, with the resolution n° 797 of December 16, 1992, the UN established to intervene in Mozambique. The task of both missions was to provide a humanitarian assistance to the people of the two countries. In such context, medical support to local population was a major issue.

Italy contributed with military contingents and in both operations Army Field Hospitals were deployed, of the type at the present time assigned to Brigades one in Somalia and one in Mozambique. A total of 16 358 men was deployed (Army only) in both operations, 11 624 in Somalia and 4 734 in Mozambique.

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**LE SERVICE DE SANTE DES ARMEES ITALIENNES
DANS LES OPERATIONS HUMANITAIRES DE L'ORGANISATION
DES NATIONS UNIES : SOMALIE ET
MOZAMBIQUE, DECEMBRE 1992-DECEMBRE 1994**

RÉSUMÉ - L'Armée italienne est intervenue lors de deux missions humanitaires, l'une en Somalie de décembre 1992 à mars 1994, l'autre au Mozambique d'avril 1993 à décembre 1994. Ces deux missions, très différentes l'une de l'autre dans leurs aspects techniques, logistiques et épidémiologiques, ont concerné au total 16 358 missionnaires. En Somalie, la pathologie principale observée chez ces missionnaires a été la diarrhée des voyageurs qui a touché 55 % des effectifs. Au Mozambique, le principal problème a été celui de la prévention du paludisme : l'association chloroquine plus proguanil s'est avérée peu efficace et le remplacement par la méfloquine a donné toute satisfaction. Il s'agissait des deux premières missions effectuées à l'extérieur du bassin méditerranéen par l'Armée italienne depuis la deuxième guerre mondiale. Ces missions ont permis de vérifier le caractère opérationnel des matériels, des équipements et des hommes. Depuis, d'autres missions ont eu lieu, au Liban, en Turquie, au Kurdistan et en Albanie, qui ont grandement bénéficié des enseignements tirés de ces deux missions initiales.

MOTS-CLÉS - Missions humanitaires - Somalie - Mozambique.

THE BRIGADE FIELD HOSPITALS

The features of the Brigade Field Hospital are : 45-70 beds in pneumatic tents with air-conditioning ; 4 variable volume shelters for operating theatre, intensive care, laboratory and pharmacy ; the other medical facilities are in pneumatic tents. The shelters can be transported by railway, or dragged with their steering wheels, inside the helicopter CH-47 and the aircrafts C-130 Hercules and Fiat G-222. They are built with anticorrosive aluminium, lining in PVC and can reduce both height and width for about one meter. The modules are provided with four stabilizers (jacks) having hydro driven valves, operated by an electrohydraulic power box controlled by a push-button panel. The modules can be lifted up to a height of about 160 centimeters, without auxiliary lifting means. Normally, it takes 50 minutes to make the shelters ready to operate. Two service trolleys, with fixed dimensions, contain a 60 Kw generator, the climatizer with antibacterial filters assuring a constant temperature inside the shelters even during outside variations from - 20 to + 40°C, a molecular filtering system producing therapeutic oxygen, etc...

Table I - «Operazione Ibis», Somalia : medical activity.

	Medical examinations	Surgical operations	Days of hospitalization
Somali people	202 290	558	8 859
United Nations personnel	8 429	11	980
Total	210 719	569	9 839

The flexibility of the Brigade Field Hospital allows, if necessary, the deployment of only a part of it, the «Clearing Station», consisting of two shelters, for surgery and intensive care, and tents for 15-40 beds.

Medical specialities within the Brigade Field Hospital in humanitarian activities abroad are preventive medicine, internal medicine, general surgery, anaesthesia, orthopaedics, radiology, laboratory, pharmacy and, in case of humanitarian assistance, gynecology, paediatrics and ophthalmology.

SOMALIA : «OPERAZIONE IBIS»

During the «Operazione Ibis», performed in Somalia from December 1992 to March 1994, the Army Field Hospital «Centauro» was deployed in Jowhar, a town 40 kilometers from Mogadishu, along the Webi Shebellee river. Since the high demand coming from local people, 200 beds were arranged in pneumatic tents with air-conditioning, instead of the 45-70 normally used. Other medical facilities were arranged in order to provide medical care to Somali people : the Contingent Clinic of the main camp in Balad, the Battalion Aid Posts of Bulu Burti, Belet Uen and Mataban, the Health Centre of Mogadishu, 45 First-Aid Posts in the villages of the district of Johwar and the Hospital «Italia», in Jahwar too. All these medical facilities referred to the Field Hospital «Centauro».

The First-Aid Posts in 45 villages were run by Somali women trained by the Military Red-Cross nurses with a 30 days course and were visited every two weeks by Italian medical officers. The Clinic of the main camp in Balad, at the beginning conceived only for the Italian contingent and the UN personnel, was open afterwards to Somali people coming from surroundings. The Health Centre of Mogadishu was supervised by an Italian medical officer and run by Somali physicians of the main medical specialities and dentistry. The Hospital «Italia» in Johwar was rebuilt by the soldiers on the remains of the former town-hall. At the end of the mission, it was ceded to Somali Authorities with the medical equipment and is still working.

Another very important item for humanitarian relief was veterinary activity. It was so important in order to get the local economy running again, based on breeding

of animals (sheeps, camels, donkeys, etc...) and to facilitate the relationships with the local chieftains in the villages. The veterinary officers were really loved by people and called «white Mohammeds» (like Mohammed the Prophet) as a sign of reverence. They were in Balad, in Bulu Burti and in the Field Hospital «Centauro». They were also engaged in mobile teams assisting remote villages. In 16 months, 300 000 animals were cured, mainly for parasitic diseases, trypanosomiasis, surgical operations, etc...

Medical activity, in the same period, was represented by 202 181 medical examinations of Somali people and 8 425 medical observations of UNOSOM personnel (total 210 606) ; 490 surgical operations on Somali people and 11 on UNOSOM personnel (total 501). The days spent in hospital by patients were 9 839 (Table I).

Engaged personnel included 108 medical officers, 47 non commissioned officers and 112 nurses of the Military Red-Cross. During the «Operazione Ibis», a medical support was also provided by Navy, by ships of the class «S. Marco» (S. Marco, S. Giorgio, S. Giusto). These ships have a 6 000 tons displacement, overall length 133,3 meters, breadth 20,05 meters, speed 20 knots, crew 163 men. On board, there is a triage area with operating theatre, ward of 12 + 30 beds, sick bay, X-rays facilities, laboratory, dentistry, etc... (Table II).

MOZAMBIQUE : «OPERAZIONE ALBATROS»

During the «Operazione Albatros», performed in Mozambique from April 1993 to December 1994, the Army Field Hospital «Taurinense» (Mountain Troops) was deployed in Chimoio and, in the last period of the mission, in Beira. The area assigned to the Italian contingent was the so called «Beira Corridor», a strategic point, in order to allow the communications by train and road from Indian Ocean to Zimbabwe. It is opportune to notice that the situation in Mozambique was different from Somalia, where the collapse of public health and medical care system was total. As a matter of fact, in Mozambique, hospitals and physicians were still working in spite of the long period of civil war.

The Brigade Field Hospital «Taurinense» was essentially similar to the above mentioned hospital deployed in Somalia, with the exception of the number of beds, 45 in front of 200. The same kind of shelters was

Table II - «Operazione Ibis», Somalia : naval support.

	Personnel deployed	Medical examinations	Surgical operations
December 1992 - April 1993	9	3 510	18
February 1993 - April 1994	41	2 732	0
January 1995 - March 1995	33	4 784	0

Table III - «Operazione Albatros», Mozambique : medical activity.

	Medical examinations	Surgical operations
Mozambique people	22 794	331
United Nations personnel	7 000	0
Total	29 974	331

deployed for operating theatre, intensive care, laboratory and pharmacy. The same pneumatic tents were deployed for patients and for the other medical facilities.

Medical activity, from April 1993 to December 1994, was represented by 22 794 medical examinations of local people and 7 000 medical examinations of UNO-MOZ personnel ; 331 surgical operations were performed (Table III). The deployed personnel included 67 medical officers, 35 non-commissioned officers and 42 nurses of the Military Red-Cross.

PERSONNEL IMMUNIZATION

For all personnel deployed in both missions, an immunization program was started (Table IV). It is opportune to notice that the vaccine against hepatitis A was not registered in Italy at that time, so it was necessary to use human immunoglobulins. No adverse reaction was reported among 4 722 cases studied, with a 3 % local side effects and 3,9 % mild systemic effects.

Table IV - Immunization schedule of personnel deployed in missions.

Day	Vaccine	Dose
0	Hepatitis B	1
	Poliomyelitis Enhanced Injected Vaccine	1
	Tetanus-Diphtheria	Booster
14	Yellow fever	
	Typhoid (Ag Vi)	
28	Hepatitis B	2
	Poliomyelitis Enhanced Injected Vaccine	2
42	Measles	
60	Hepatitis B	3
Before departure	Hepatitis A (Immunoglobulins)	
180	Hepatitis B	4
360	Poliomyelitis Enhanced Injected Vaccine	3

PATHOLOGY OBSERVED IN MISSIONARIES

Malaria.

In Somalia, malaria chemoprophylaxis was based on chloroquine 300 mg weekly plus proguanil 200 mg daily (attack rate 0,16 cases/100/month and effectiveness of 94 %). In Mozambique, chemoprophylaxis was based

on chloroquine 300 mg weekly plus proguanil 200 mg daily during the first period of the mission (March 1993 - June 1993) and afterwards on mefloquine 250 mg weekly. Such change was due to the uneffectiveness of the first drug association in Mozambique, with an attack rate of 36 cases/100/month and effectiveness of 20 %. With mefloquine, the attack rate was reduced to 0,4 and effectiveness increased to 99 % (Table V). The initial decision of using chloroquine plus proguanil in Mozambique was adopted not to induce mefloquine resistance in that area.

The compliance in chemoprophylaxis among the troops was high, more than 98 %. The total cases of malaria was 324 : 18 in Somalia, 119 in Mozambique and 187 diagnosed in Italy ; 169 cases (52.16 %) were due to *Plasmodium falciparum*, and 138 (42.59 %) to *Plasmodium vivax*. The other cases were due to *Plasmodium malariae* (5 cases), *Plasmodium ovale* (7 cases), *Plasmodium falciparum* plus *Plasmodium vivax* (4 cases) and *Plasmodium falciparum* plus *Plasmodium ovale* (1 case).

Diarrhoea.

Travellers diarrhoea was a rather common disease among the military, mainly during the initial period of the deployment. In Somalia, 55 % of the troops and in Mozambique 33 %, had one episod of diarrhoea or more (Table VI).

CRITICAL EVALUATION AND CONCLUSIONS

Examination of these two recent operations allows to value critically both the missions from the medical point of view. We classified some different aspects as unsatisfactory, satisfactory and very satisfactory. We considered the following aspects :

- equipment and materials : satisfactory, also in extreme environmental conditions. The only criticism regards the limited size of the operating theatre shelter, counterbalanced by the flexibility and the high efficiency of the equipment ;

- logistic support : very satisfactory, but only after the first period of deployment, after about three weeks. We have to notice that the Italian Army had no experience of inter-continental military operations since World War II, excluding those performed within the mediterranean area ;

- medical evaluation : satisfactory. In Somalia, the first role was represented by battalions, the second echelon was the field hospital and the third and the fourth were represented by the Rome General Military Hospital, where the most serious cases were evacuated by plane in a few hours. In Mozambique, the field hospital was first and second role, since the contingent was deployed in a limited area. The third role was planned in South Africa but never used and the fourth echelon in Italy ;

- medical teams : very satisfactory as far as experience and morale are concerned. Almost all medical officers were well trained to team-work and were engaged together in former missions abroad (Lebanon, Turkey, Kurdistan, Albania, etc...) and similarly for the non-commissioned officers, nurses and technicians. Worth mentioning the Red-Cross Sisters who contributed untiringly to missions, in field hospitals and in villages, starting moreover

Table V - Malaria cases under chemoprophylaxis observed during humanitaries missions in Italian Troops in Somalia in Mozambique.

Country	Chemotherapy	Attack rate (cases/100/month)		Effectiveness (%)	Compliance (%)
		Case 1	Case 2		
Somalia	Chloroquine + Proguanil	0.16	2.9	94	98.5
Mozambique	Chloroquine + Proguanil	36.0	45.0	20	98.3
Mozambique	Mefloquine	0.4	45.0	99	98.3

Case 1 : chemoprophylaxis regularly observed ;
Case 2 : chemoprophylaxis irregularly observed.

primary schools for children and vaccination campaigns. One more consideration concerns the recruits : in Italy, military service is compulsory, but the participation to missions in Somalia and Mozambique should be voluntary. The demand among the recruits were very high and this allowed to select specialized personnel as nurses, technicians, etc...

Critical evaluation of both missions focuses the following problems and proposals :

- about equipment and materials, the Army Medical Corps Command is examining the possibility of acquiring a fields computerized tomography equipment and a field laboratory of bacteriology. It has also started

Table VI - Cases of diarrhoea in Italian Troops in Somalia and in Mozambique.

Episodes of diarrhoea	Somalia : n = 3 792 (%)	Mozambique : n = 1 634 (%)
0	44,5	67,3
1	26,0	16,4
2-3	25,5	15,2
4 and more	4,0	1,1

experimental applications of telemedicine to field hospitals, in collaboration with the European Space Agency and such a service is now working in Bosnia, with a station in the Field Hospital of Sarajevo, that is connected with the Rome General Military Hospital and with the Research Institute «S. Raffaele» in Milan ;

- about logistic support, no observations, excluding the need of a more efficient planning at the beginning of the missions, particularly in case of operations in very far areas ;

- about medical teams, the only remark is the need of military specialists in tropical medicine. We are planning short courses in this branch for young physicians formed into medical teams of the field hospitals ;

- about the problems arised among the Italian personnel, we have to point out the travellers' diarrhoea and malaria ;

- about the proposals concerning relief to local people, in case of future missions, we are examining the possibility of planning preventional interventions like mass vaccinations and so on.

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