

THE MILITARY HEALTH SERVICE IN THE GREAT WAR: THE PERSPECTIVE OF A MILITARY DOCTOR

'The armed conflict that dominated the world in the early 20th century from 1914 to 1918, and Portugal's entry into the war in 1916 forced the Portuguese Military Health Service to perform its duties at a significantly high technical level, demonstrating their professionalism and scientific mindset under adverse conditions and in the face of new weaponry and of new forms of warfare.'

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The main objective of this short paper is to increase our knowledge of the importance of the Health Service's involvement in the First World War.

The Corpo Expedicionário Português (CEP) was composed of 55165 individuals, 2000 of whom served on the Health Service.

A total 2288 deaths and high numbers of wounded were recorded in the campaign (4.15 % of the total troops employed), a testament to the daunting task these men and women undertook away from their homeland.

Healthcare in the preparation phase

Recruiting strong, healthy men capable of enduring the rigours and demands of military service both in training and in campaign was one of the main objectives of the generation of the Corpo Expedicionário Português.

For that end, a physical and psychological inspection and selection system was implemented that began in each district of residence. As material and human resources were scarce, young men whose clinical condition was deemed suspicious were sent to a military hospital, where they were inspected by a medical committee, who issued a definitive opinion on a given individual's fitness for duty (Marques, 2008).

Several pathologies determined who was declared 'unfit' or 'exempt', including: general infections (myxedema, ulcers); deformities and skeletal malformations (spina bifida, sinusitis); infectious diseases (tuberculosis); afflictions of the nervous system (cretinism, epilepsy, somnambulism), etc.

However, the records show that these committees and inspections were not always effective and that many men simulated injuries and resorted to corruption to

evade military service. On the other hand, men with serious illnesses and injuries were recruited and inducted (Marques, 2002).

As a result, England refused to transport the Portuguese troops to France on some occasions, as a prophylactic measure against contagious diseases, such as typhus and pneumonic fever, and in turn the Health Service adopted stricter measures to identify and control infectious diseases (mainly tuberculosis, one of the most simulated diseases) with the creation of selection committees of specialised doctors, as well as rigorous screening upon arrival at Brest.

The sanitary conditions in the journey from London to Brest were poor and aggravated the health status of those already ill, weakening healthy individuals. In order to prevent infected individuals from embarking on the ships, health inspections were conducted from the outset, both on the boarding pier and aboard the vessels in transit, to identify and isolate possible cases, and again upon arrival in France, where those who were ill were immediately sent to a hospital. The situation was not only embarrassing, it jeopardised the organization and generation of the different units of the CEP (Marques, 2008).

Many of the individuals hospitalised on arrival were deemed unsalvageable, which immediately posed two types of problems: the issue of repatriation, and the fact that these men were occupying the few beds and scarce resources available.

Expeditionary healthcare in the CEP

a. The training of the health staff

The motivation and technical expertise of the medical and nursing staff played a key role in making the most of the structures and resources available and ensured that the health service personnel was able to provide effective care suited to the needs of the campaign.

Many Portuguese doctors who had deployed for France felt demotivated and wished to return to Portugal as soon as possible because they risked losing their office patients and hospital positions. On the other hand, they had demanded that the Government maintain their families' standard of living for the duration of the campaign.

Some mobilised civilian doctors were ill-prepared for the medical needs of a campaign and were given both civilian and military training. For example, the health

service staff was not familiar with gas poisoning, and the new weaponry employed (explosive projectiles, howitzers, canister shot) caused new types of pathologies that often led to hasty amputations due to lack of experience in the field.

The health service staff also served in British hospitals as the campaign evolved, and their ability to learn helped minimise certain deficiencies to such an extent that the British First Army invited some Portuguese surgeons to serve professionally on the English Surgeon's Clinic Services. There, great names in Portuguese medicine learned techniques and concepts which they would later develop, such as Dr Jaime Cortesão (from Coimbra), Prof Dr Egas Moniz (1974-1955), the first Portuguese recipient of the Nobel Prize in Physiology and Medicine, and Dr Reynaldo dos Santos, known for the angiography studies he conducted. During his time in France, Dr Fleming, assisted by French military doctors, studied in loco the effect of certain substances, and this study led to the discovery of penicillin in 1928.

Nursing care was mainly administered by (mostly British) female staff. Eighty-two 'Lady Nurses', trained through the nursing courses of the Portuguese Red Cross, served at the Portuguese Red Cross Hospital.

The presence of Portuguese women as nurses guaranteed a high level of nursing care in the rear hospitals (female military nurses were not allowed less than 10 km from the front line).

Male nurses were posted in the front line ambulances during the most violent moments between January and April 1918, providing assistance to the combatants. Many doctors and nurses were forced to work for hours and days on end in inadequate facilities, in an effort to save lives and salvage the sick and the wounded. Their dedication was acknowledged by all, and the 'lady nurses' were seen as heroes by the wounded and the ill, who even went so far as to fight for their affections (Marques 2008).

The doctors and nurses were assisted by auxiliary personnel (nurse-stretcher-bearers and auxiliary other ranks), who were instrumental in providing aid to wounded soldiers, putting themselves in the line of fire on a daily basis to evacuate the wounded from the battlefield. These men were considered heroes and were trusted implicitly because they constantly risked their lives to retrieve their wounded comrades-in-arms from the most dangerous places in the trenches, even from No Man's Land. Neither the stretcher-bearers nor the auxiliary other ranks were required to belong to the Health

Companies and, interestingly, were chosen from the least competent individuals of each service.

b. Health staff personnel

After consulting several works, we were able to ascertain that there are discrepancies in the statistical data concerning the Health Service. The cause of these discrepancies may be the use of different modes of transport (maritime and rail), as well as errors in the vital information issued in the *Ordens de Serviço*. We have decided to include some tables listing the Health Service staff of the CEP (Oliveira, 1993).

Table 1 - Officers, sergeants and other ranks in the CEP Health Service

Arms and Services	Officers	Sergeants	Corporals	Soldiers	Lady Nurses	Nursing other ranks	TOTAL
Health Service	475	163	311	978			1927
Portuguese Navy (a)	1						1
Portuguese Red Cross (b)	2				54 (c)	26	82

- (a) 1st Lieutenant in Brest serving as liaison officer between the ships and the port authorities
 (b) Volunteers holding officer rank
 (c) Women volunteers who received ranks equivalent to Sub-lieutenant, and one to Lieutenant

Table 2 – Effective Officers in the PS and militia officers

Officers	PS	Militia officers	TOTAL
Senior officers	180	3 (a)	183
Captains	499	25 (b)	524

1. Majors
2. 23 doctors, 1 pharmacist and 1 veterinarian

Table 3 – Effective Officers in the PS and militia officers

Arms and Services	Lt Col		Maj		Capt		Lt		2Lt		TOTAL
	PS	Mil	PS	Mil	PS	Mil	PS	Mil	PS	Mil	

Doctors	3		11	3	42	23	26	62	17	195	380
Veterinarians	1		3		6	1	9	1	1	24	46
Pharmacy/Dentists					3	1	2	3	2	10	21
Auxiliary Health Services							4			23	27

We can thus state that the CEP Health Service staff comprised about 2000 individuals with different ranks and specialities, including 82 individuals from the Portuguese Red Cross.

c. Triage, treatment and evacuation of casualties

The Health Service's mission of assisting in the recuperation of casualties was twofold, as they had to both prevent and treat illnesses and traumatic injuries.

'There lay a soldier in the mud. As he was walking nearby, bam! A dum dum bullet from a machine gun went into his mouth and exploded. They carried him out and lay him there. I leaned in. His head was a flat, bloody mass on the ground. It reminded me of one of those red suede balloons children play with, one which had burst. It had lost its primeval, human shape. This miracle of construction which we carry on our shoulders, lying there on the dirt, leaking flesh, brain matter, blood. The next day they brought in another one, just like the first. Only the bullet had gone through the temple.'

In Memórias da Grande Guerra (1916-1919) by Jaime Cortesão

The Health Service facilities and capabilities installed in the Portuguese sector to handle the triage, treatment and sanitary evacuation of casualties were based on a complex chain of health structures determined by the pace of the war and the type of war being fought. In order to prevent able-bodied men from leaving the fight, only stretcher-bearers were allowed to evacuate wounded combatants, creating pockets of wounded soldiers who were forced to take shelter in howitzer craters and wait for a quiet moment to either receive assistance or be sent to the Regimental Aid Posts (Marques, 2008).

Each battalion had attached six so-called advanced/forward Regimental First Aid Posts organized by capacity from the front to the rear, staffed by one doctor, two nurses and four stretcher-bearers stationed near the C line. The Regimental First Aid Posts collected the wounded brought in by the stretcher-bearers and evacuated them to the Advanced Brigade Stations. These posts had limited care capacity and could hold a total 70 recumbent wounded (Oliveira, 1993). There were four Brigade Aid Stations set up near the Village Line, staffed by 2 doctors, 4 nurses and 15 stretcher-bearers. These Aid

Stations had more human and material resources and greater care capacity, and could hold 256 recumbent wounded, 80 sitting wounded and, in exceptional situations, for an additional 41 recumbent cases and 138 sitting cases, and had surgical capacity in emergency situations (Oliveira, 1993).

Both the Regimental First Aid Stations and the Brigade Aid Stations were mobile as their position in the front line meant they often came under enemy fire and had to be moved, with all the problems that implied for patient care, as well as for the evacuation circuit (motor ambulances and horse drawn vehicles), which had to be altered (Marques, 2008).

Reis (1993) records two Casualty Blood Hospitals in Merville and St Venant, outside the range of enemy fire and sited by the railway line to facilitate evacuation and replenishment of medical supplies. These hospitals carried out surgical procedures and evacuated casualties whose recuperation exceeded two weeks to the Base Hospitals.

Base Hospitals and other rear hospitals were set up in Ambleteuse to provide casualty care (Marques, 2002).

'Seen from the outside, a war hospital is unsightly. (...) But on the inside they are as comfortable as can be, better than many brick and mortar hospitals in the homeland. The floors of these tunnels are made of polished or varnished wood, and a mellow light filters through the eyelid windows. The furniture is made of iron and crystal. Comforting details abound, such as bud vases with flowers or the cover of a magazine.'

in O Soldado Saudade na Grande Guerra (1919), João Pina de Moraes

Facilities were built specifically to house Base Hospital 1, which had exceptional material and human resources, with a capacity of 1500 beds under normal conditions.

Base Hospital 2, which was tasked with supplementing the English hospitals, was smaller, with about 500-600 beds, and was more suitable to treat clinical pathologies and venereal diseases (Marques, 2008).

The Portuguese Military Hospital, also a rear hospital, was built at a later date with a capacity of about 100 beds, and administered convalescent care to injured soldiers awaiting repatriation. Repatriated combat casualties were usually sent to the Instituto Clínico da Cruzada das Mulheres Portuguesas [Portuguese Women's Crusade Clinical Institute] and to the Instituto de Reeducação dos Mutilados de Guerra [Institute for the Rehabilitation of Disabled War Veterans] (Reis, 2000).

In addition to the above institutions, healthcare in the rear included other hospital services, both Portuguese and from other countries, among which the Hospital

of the Red Cross, the Portuguese Section of the Red Triangle, the French Hospitals and the British Health Services, all of which greatly contributed to assist the CEP before the facilities of the Portuguese Health Service were set up, and also after that due to the high number of combat casualties coming in from the front.

In addition to these facilities and hospital capabilities, field ambulances were instrumental in coordinating and evacuating casualties to a higher echelon of care according to triage priority. These ambulances were mobile, usually located near the Aid Stations and usually coordinated two types of vehicles (horse drawn vehicles and motorized vehicles), which gradually became specialised according to function and echelon of care. These combat zone ambulances were stationed in Epinette, Vieille-Chapelle and Zelobes (Annex A). These means of evacuation were supplemented by rail transport and by canal-barges that travelled the rivers in the region (Reis, 1993).

The evacuation chain and the different echelons in the health chain articulated as follows: the stretcher-bearers at the front administered first aid to the wounded soldiers, who were then sent to the Regimental First Aid Posts by foot or by litter. Upon arrival at the Battalion Aid Post, the injured were assessed and administered emergency care, and, depending on the seriousness of their injuries, could be transferred to the Brigade Aid Post. They were triaged again upon arriving there, where they continued to receive treatment. After being triaged, they were sent to the Casualty Blood Hospital. When their convalescence took longer than two weeks, the injured soldiers were evacuated to the base hospitals by train or by canal-barge. They were not evacuated directly from the those hospitals to the Portuguese base ones; first, they were assessed by the British hospitals, which were responsible for the evacuation, and only then were they transferred to the Portuguese base hospitals.

When the soldiers were not likely to recuperate, they were evacuated to the Portuguese military hospital, pending repatriation.

Casualties in the campaign were quite high, as 7167 men (12.99 %) in a total 55165 CEP troops were declared unfit for duty (Marques, 2002).

The type of diseases recorded is unlikely to have resulted in such high numbers, which means a considerable number of afflictions must have been faked by the soldiers in order to return to Portugal.

Main causes of death

a. Death due to disease or accident

The classification of causes of death among Portuguese troops as due to either disease or accident was made according to the resolutions of the International Commission of the International Statistical Institute in Paris, 1909. About 400 deaths were caused by either disease or accident. The most common causes are listed in table 4.

Table 4 - Deaths by disease or accident (Oliveira, 1993)

Disease or accident	Number
Pulmonary tuberculosis *	149
Influenza *	51
Other respiratory diseases *	44
Violent deaths (excluding suicide)	33
Other illnesses	25
Meningitis	21
Other types of tuberculosis *	15
Pneumonia *	13
Suicide	10

* Illnesses typical of the Portuguese society of the time, aggravated by conditions on the ground and by the Flanders winter climate, and possibly by the adaptation to the diet

b. Trauma and disease in campaign

Throughout the campaign, disease-related casualties far outnumbered trauma-related casualties. Trauma was normally combat-related, and chemical attacks were the second most common cause of death. Some injuries were accidental and were caused by poor handling of weapons and ammunition (both in combat and in training) and poor handling of transportation vehicles.

The infantry suffered the most casualties, followed by artillery, as the soldiers in these arms remained at the front lines for longer stretches of time than those in the other arms.

The most common illnesses in the CEP were pulmonary diseases, followed by skin diseases and, finally, by venereal diseases. As mentioned above, the climate, diet, and daily life in the trenches aggravated pre-existing conditions, as well as contagious

diseases, which spread quickly among the CEP troops. A high number of casualties were caused by tuberculosis, which was a major concern for the Health Service staff as it was a contagious disease.

Everyday life in the trenches and poor hygiene created the ideal conditions for the development of skin diseases, especially scabies. Many cases of venereal disease were brought in from Portugal, but others were contracted in France due to poor personal hygiene and promiscuous sexual behaviour among soldiers (Marques 2002).

The health service intervened immediately to prevent contagion by quarantining detected cases, and the medical capabilities of the staff prevented other diseases from having a significant impact. The smallpox vaccine and the typhoid vaccine were also a success and casualty rates from those diseases were remarkably low.

War also brought with it a new disease, one in which soldiers suffered psychological and emotional breakdown in response to the horrors of war. It was not until the 1970s that the disease was officially recognised and the term post-traumatic stress disorder was coined (Man, 1998). 'Shellshock' was first diagnosed in the war, but the experience of war physicians did not immediately lead to a clear diagnosis. Many cases were misdiagnosed (in light of current knowledge) as: 'mental depletion', 'mental alienation', 'idiocy', 'touched by the war', etc. Because mental disorders were not believed to be directly related to the characteristics of the war, the physicians concluded these men were attempting to escape both reality and the war. Their symptoms were downplayed and afflicted soldiers were often treated with either pity or indifference, and at times were even punished. These cases were aggravated by lack of effective treatment, which led to neurosis and, in extreme cases, to suicide. This behaviour often manifested after the soldiers returned to Portugal, preventing them from returning to their normal lives.

On 11 November 1918, the signing of the Armistice heralded the end of the military mission of the Corpo Expedicionário Português, although the force did not permanently return to Portugal until March 1919. Many soldiers came back with physical problems caused by trauma, disease and the effects of chemical agents, as well as psychological scars which, at the time, were diagnosed as 'war neuroses'. The characteristics of the new weaponry employed had made for a violent war, and the trench system in particular took a heavy toll on the Portuguese soldiers called upon to serve the Fatherland. The high number of casualties and the variety and characteristics of the many injuries and diseases left an indelible mark on Portuguese society in the

decades that followed the war. These injuries and diseases eventually led to innovations in medicine and clinical facilities.

The role of the Health Service was greatly limited by its staff's lack of experience with the new types of injuries caused by this violent war (gassing, severe multiple trauma), but it only served to inspire them to reach new heights of performance and effectiveness that were widely praised both at home and abroad. The greatness, courage and sense of duty of the Portuguese troops serving away from the homeland under adverse conditions made every effort to minimise the suffering of their comrades-in-arms. When they returned, these physicians and the remaining health staff all expressed a similar sentiment: one may learn from War, but the ends do not justify the means!

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