

Medicine during World War I: Commission for the revision of sanitary and medical supply standards of the Russian army (1915–1917)

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Abstract

The lessons learned from the last wars of the second half of the 19th to early 20th centuries influenced the organization of the troop command and control. The latest inventions, mass outbreaks of infectious diseases among the troops and the population of countries at war, as well as a number of other factors, led to changes in army management mechanisms. Given the experience gained from initial hostilities, the Russian government decided to review its approach to medical support for the field army and the organization of the medical supply system for troops. This was due to the unsatisfactory state of the Russian military-industrial complex at the beginning of World War I. At the beginning of the war, Russia was forced to seek help from France, Britain, the United States, and Japan, and to take urgent measures to expand its own production of medical equipment. Emergency measures were taken to facilitate the production of medical equipment on the territory of the Russian Empire. During the reign of Nicholas II, in June 1915, a Special council was set up. The council oversaw the activities of industrial enterprises that produced war supplies, distributed military orders between Russian and foreign factories and facilitated the opening of new ones. The Special council entrusted the provision of medical supplies for the Russian army to the Commission for the Revision of Sanitary and Medical Supply Standards, which was established on October 24, 1915. As a result of the work of the commission during the war, the medical support system for the troops was improved, production of domestic versions of medical equipment was established, the procedure for dispensing medical supplies was simplified, and standards were increased.

Keywords

World War I, the Special council to discuss and integrate state defense measures, the Commission for the revision of sanitary and medical supply standards for the army, medical supplies, medical equipment, pharmacy store

Introduction

Shortly before World War I, the War Ministry implemented certain organisational and staff changes within the governing bodies of the medical service of the Russian army. In 1910 the main army medical department was renamed the main army sanitary department (MASD) and district departments were also renamed accordingly. The MASD merged the special medical and administrative units of military medical institutions, with the assignment of administrative du-

ties for these departments not only to officials from the military medical service, with academic rank, but also to the wider community of the administrative service.¹ From 1906, the head of the department – the chief military sanitary inspector of the Russian army – was A.E. Evdokimov.

With the outbreak of the war, the system for organising the evacuation of the wounded was assigned

¹ Russian State Military Historical Archive (RGVIA) F. 546 Op. 1 D. 431 L. 1.

to the just-established (on 3rd September 1914) department of the chief of the sanitary and evacuation department at the headquarters of the Commander-in-Chief. That department was headed by Duke A.P. of Oldenburg. Its functions included the merging of the activities of all organisations and societies of the sanitary and evacuation service, planning of medical and sanitary activities, selection of evacuation routes, monitoring of the establishment of sanitary, evacuation and feeding points and implementation of anti-epidemic measures.

The transition to a war economy and its management would not have been possible without the establishment of special governing bodies, which would bring together the efforts of the authorities and public organisations: the Russian Red Cross Society (RRCS), the All-Russian Zemstvo Union and others. The first of such bodies was the special council to discuss and integrate state defence measures.² Its charter was approved by Nicholas II³ on 7th June 1915.

According to the charter, the chairman of the council was War Minister V.A. Sukhomlinov, and council members included representatives of governing bodies, the State Duma, the State Council and public organisations. Major industry representatives with government defence contracts could be invited to council meetings. This wide representation enabled detailed examination of issues. However, council members had a consultative voice only: decisions were made by the War Minister.

The special council to discuss and integrate state defence measures was a supervisory body and had exclusive authority in deciding on a key military and economic issue of World War I: the mobilisation and delivery of supplies (combat and military support) to the field army. It also controlled and funded more than five thousand enterprises whose products were part of overall military supplies delivered to the army. The council's functions were subsequently expanded and supplemented.

The structure of the council was extremely complex and changed constantly throughout the war. The council oversaw preparatory commissions and committees. In the interests of the medical supply system for the troops, along with others, the most active were the preparatory commission on general matters and the Commission for the Revision of Sanitary and Medical Supply Standards for the Army (hereinafter referred to as the Commission). The issue of creating the Commission was raised on 19th October 1915 by the preparatory commission on general matters in light of the need to review sanitary and medical supply standards shortly before the new draft. These standards were determined by the main army sanitary department before the war (Alekseev 2015, p. 457). On 21st October 1915, the Spe-

cial Council supported this initiative and determined the composition of the Commission: representatives of the State Duma and the State Council among members of the Special Council, the Central Military-Industrial Committee (CMIC), All-Russian Zemstvo and City Unions (Zemgora), the RRCS, the Department of the Chief of the Sanitary and Evacuation Unit of the Army and officials from the sanitary department of the field army. The composition of the commission was not permanent and varied depending on the issues under consideration. After analysing archive documents, we found that the following individuals regularly attended Council meetings: chief army sanitary inspector A.Y. Evdokimov, the aide to the War Minister, chief clerk Lieutenant General A.S. Lukomsky, State Council member A.I. Mosolov, State Duma member A.I. Shingarev, head of the military medical procurements factory P.I. Kranz-Tarnaevsky, head of the main army sanitary department V.I. Kruzhkov, chairman of the Union of Cities Dr. A.N. Merkulov, the representative of the RRCS V.I. Shevkunenko, professors N.A. Velyaminov, N.N. Burdenko, G.F. Tseydler, and A.I. Ignatovsky. Doctors and sanitary department⁴ heads were also assigned to work in the Commission at the front. As a result, the commission had the most up-to-date information from the front and was an inter-departmental body which discussed and resolved the most urgent matters relating to the medical supply of the army.

This article examines the key areas of the activities of the Commission during World War I. Key issues in the work of the Commission were: supplying the army with medical equipment, including new types of equipment; increasing supply volumes of medicines; revamping the system for delivering medical assistance, etc. The study of these issues enables one to reference the study of the medical support of the Russian army during World War I.

For the first time in the history of Russia, emergency regulatory bodies in the military and economic sector were created during World War I. The defence activities of the Special Council have caught the attention of historians. The monographs of S.V. Voronkova and T.V. Alekseev (Voronkova 1975; Alekseev 2015) contain a fairly complete review of the history of the establishment of the Council, its powers, structure, history and the work of its separate entities (commissions and committees). The published works do not examine the Commission's work on reviewing sanitary and medical supply standards. They only mention its establishment and basic functions. In studies devoted to the Special Council, most of the attention was focused on the military-industrial support for the army. Investigation of the work of the Commission enables the in-depth examination of the peculiarities of medical support for the field army during World War I.

² Hereinafter referred to as the Special Council or Council.

³ RGVA F. 369 Op. 1 D. 1 L. 95–106.

⁴ RGVA F. 369 Op. 7 D. 3 L. 1–3.

Organisation of medical supplies for the Russian army shortly before World War I

The administration of the army of the Russian empire, including its medical service, went through changes at the outbreak of World War I. According to the “Statute on the army field office during wartime”, which was issued on 16th July 1914,⁵ the management of the entire sanitary department and evacuation service of the army, as well as the control of all personal and material resources were passed on to the head of the sanitary department,⁶ who directly reported to the commander-in-chief of the army at the front (*Polozhenie o polevom upravlenii vojsk...* 1914). However, this “Statute” was not fully implemented amid during the war.

The procedure for the accumulation and maintenance of medical inventory during wartime was determined by the “Statute on wartime military medical institutions” (passed through the order of the war department No. 114 of 31 May 1887). The medical equipment of a military base, according to the amount set for wartime and exceeding the standard set for peacetime, was stored at the base (*Polozhenie o voenno-vrachebnykh zavedeniyah...* 1887). Equipment needed for medical institutions during wartime was kept at locations determined by the headquarters with the approval of the MASD. According to the order of the war department No. 685 issued on 17th October 1910, the MASD’s tasks included providing medical staff and medical equipment for the field army. Shortly before World War I, several documents were issued, which governed certain aspects of providing the army with medical equipment during the war.⁷ Manifests determined supply standards

for military bases and medical institutions during wartime and peacetime.

The medical equipment manifests introduced in 1909 were more complete, but a large portion of the emergency reserves was still being stored according to manifests for 1895 and 1899. Their revision was only scheduled.⁸ A critical shortcoming of both the old and the new manifests was the lack of equipment for aseptic processing when conducting surgical operations in field medical facilities. For instance, these manifests did not include rubber gloves, autoclaves for sterilising dressing materials and clothing, and field wash-basins – medical equipment needed in the first months of the war.

At the beginning of the mobilisation of the Russian army, medicines and disinfectants, pharmacy products, dressing materials and surgical instruments were stored at military bases and medical institutions as emergency reserves in amounts sufficient to cover for four months. In addition, medical equipment reserves sufficient to cover four months were kept for 76 corps comprising 50 thousand people, 122 infirmaries, 850 field and 79 fortress hospitals, 74 military ambulances, 100 military sanitary trains and for 76 020 beds in fortresses. Estimates used to create emergency reserves were based on data from the Russo-Japanese War and turned out to be far from the reality faced at the outbreak of war in 1914. The emergency reserves included only 557.8 thousand individual and 2278.4 thousand antiseptic dressing packages.

The medical equipment supply system during World War I, the composition of medical supply institutions and the procedure for their use were determined by the “Statute on wartime military medical institutions” passed in 1887. Wartime military medical institutions included infirmaries at military bases, divisional infirmaries; field hospitals and temporary fortress hospitals. Infirmaries at military bases were established at the headquarters – of infantry and cavalry regiments, battalion, ammunition and artillery brigades and were headed by a senior doctor. Divisional infirmaries were established one for each infantry division and were under the authority of the divisional doctor. In these infirmaries, the sick and the wounded received first aid and were then transferred to the field hospital. Each infantry division had 8 infantry hospitals, each one managed by a chief physician. Field pharmacies were created at field hospitals and were based in pharmacy

⁵ The date is indicated according to the old style. The new “Statute on the army field office during wartime” was passed two days before the mobilisation of the Russian army and nullified the old “Statute” of 1890. However, back in October 1903 before the outbreak of the Russo-Japanese War in 1904–1905, War Minister A.N. Kuropatskin petitioned Tsar Nicholas II to convene a meeting to review changes to the Statute proposed by the General Headquarters. Due to the ongoing war, the meeting was postponed and was held on 18 December 1906. The commission in charge of drafting the new Statute included representatives of all the Main Departments of the War Ministry, as well as representatives of several ministries – Navy, Internal Affairs, Finance, Foreign Affairs, Communications, State Control and the Headquarters of the Russian Red Cross Society. The document was only completed in January 1913.

⁶ In the Statute of 1890, the Field Military Hospital and the Field Military Medical Department reported to the General in Charge, who in turn reported to the Army Commander at the front.

⁷ New “Summary catalogue of medicines, pharmacy products and dressing materials for army units and medical institutions during peacetime and wartime” (Order of the war department No.537 of 1909), “Summary catalogue of medical items, surgical instruments and apparatus for military hospitals, consolidated and local

infirmaries and army units” (Order of the military department No. 289 of 1909), “Rules on the procedure for requesting and dispensing medical items, surgical instruments and apparatus”, “Manual for pharmacy stores” (1909), “Rules on the procedure for requesting and dispensing medicines, pharmacy and dressing items”, and the “Russian military pharmacopoeia” were introduced.

⁸ For example, the list included surgical instruments for the pre-aseptic period – with wooden handles.

stores and depots. These pharmacies stored medical equipment reserves, and supplies to military bases and medical institutions were delivered through them. The army had 7 pharmacy stores and 6 pharmacy depots in total. Pharmacy stores performed certain tasks that are typical of bodies in charge of managing military medical supplies: they drew up plans for main supplies and procurement of equipment, which were then approved by the district military sanitary inspector. Pharmacy stores and depots handled supplies of medical and veterinary equipment, prepared medicines and repaired medical equipment. They also stored emergency reserves for wartime medical institutions. They reported to the chief or district military sanitary inspector. Their equipment was procured during peacetime (for all military bases and medical institutions to be supplied with surgical instruments) at a rate of 0.1 times the amount stored at bases, and 0.25 times for items with no expiration date. Some medicines were stored in large quantities according to special standards. Spirit, ether, adrenalin, oilcloth and some other items were not stored for long periods (Polyakov 1945). Medical equipment was restocked when needed and was delivered from pharmacy stores or depots. A field pharmacy was not only in charge of supplying medical equipment, but also repaired surgical instruments. In the event of difficulties in delivering medical supplies to a base, the decision was made by the field pharmacy. However, it did not have its own transport and so it received medical equipment from the field pharmacy only via a special order.

There was a dearth of medical supply bases at the front. The field army at the divisional level lacked pharmacy depots, which delayed deliveries of the necessary medical materials to military bases and field hospitals. Units based in the rear were in a much better position. They were located near supply bases, while units closer to the front experienced constant disruptions of medical supplies. The shortage of depots at the front was partly covered by mobile pharmacies of the Russian Red Cross Society (RRCS), the All-Russian Zemstvo Union and other private organisations (Gladkih 1997).

The production of medical equipment required special attention. The only government institution that was manufacturing medical equipment and playing the role of central depot, which was delivering medical equipment to the district, naval forces, the front and the army, was the St Petersburg Military Medical Equipment Procurements Factory (Ganichev 1957). Due to the huge losses at the front, military and sanitary equipment reserves were rapidly drying up. They were to be replenished through procurement from private companies. However, before the war, equipment was primarily imported from Germany (for example, from Stol und Schmidt). In light of this, there was an urgent need to look for alternative sources of medical supplies.

In the current circumstances, the available emergency reserves could not meet demand for medical supplies. It was in these conditions, which were catastrophic for the Russian army, in the year of “the great retreat”, that the Commission began its work.

The work of the Commission for the Revision of Sanitary and Medical Supply Standards for the Russian Army (1915–1917)

The Commission for the Revision of Sanitary and Medical Supply Standards for the Army was operational from 24th October 1915 to 25th May 1917.⁹ A total of 16 meetings were held. It appears the frequency of these meetings was not strictly to a timetable (the meetings were most likely held when necessary). The Commission was initially meant to be temporary. The reason for its creation was the need to review the standards of the army sanitary department, that had been intended for 3 800 000 draftees. The army sanitary department did not factor in the expenses of public organisations which were operating concurrently, and also the fact that new units would be created from only a small part of draftees. Most of the draftees would be assigned to existing units. As a result, there was a need to obtain from the front the necessary data on the army’s needs for 14 months, taking into account the capacity of infirmaries and hospitals of all types of divisions (primary and secondary) and units (militia and reserve). The estimates had to be made such that the army sanitary department would be able to supply the army without having to enlist public organisations. Heads of sanitary departments of army headquarters received a request from the Commission on 9th November 1915. The list of questions the Commission was interested in included: the number and types of medical sanitary institutions, their activities (staffing with medical personnel, information on the sick and wounded); change in the functions of infirmaries and hospitals (for example, surgical hospitals were transformed to infectious disease hospitals); the procedure of restocking medicines at medical institutions (records of the used medicines for each military medical institution); evacuation of the wounded; activities of the disinfection detachments and field pharmacies; and the activities of the RRCS. The Commission also sought proposals on changes to the organisation of military medical affairs at the front. In order for the Commission to fully acquaint itself with the situation at various locations, it assigned people well-versed in military and sanitary affairs in the army¹⁰ to Petrograd.

⁹ The first report is dated 24 October 1915. RGVA. F. 369 Op. 7 D. 3 L. 1–3.

¹⁰ For example, a clerk was assigned from doctors – doctor Belyaev from the 2nd army. RGVA F. 369 Op. 7 D. 13 L. 1.

Throughout its work, the Commission received materials on medical sanitary institutions and their medical support from 12 field armies.¹¹ The reports enabled the identification of a few common problems in the provision of medical equipment: late delivery and insufficient amounts of medicines and a limited amount of medical reserves in mobile pharmacies. The challenges facing field pharmacies were particularly urgent. They were mostly far from the front line, which hindered the timely delivery of medicines in the required amounts. There was also an acute need for painkillers (morphine, cocaine, etc) and dressing materials, as well as medical instruments which were not included in the catalogue, but were necessary: Luer¹² and Record syringes, dental kits, Zarechiv formalin apparatus and hydraulic sprayers, ear mirror kits, saline drips, etc. The heads of sanitary departments of the army headquarters expressed the general opinion among surgeons that surgeons' kits needed to be changed in accordance with modern requirements and needed restocking with intestinal needles, costectomy forceps, Doyen's curved raspator for ribs, straight and hallowed chisel, Potain's apparatus for draining pleuritic fluid, etc.¹³

Materials sent to the Commission by the head of the sanitary department of the 8th army headquarters also enable one to conclude that one of the main challenges facing all military medical institutions was the shortage of personnel. Every report contained a request for more medical personnel – surgeons, nurses and sanitary assistants. The documents also contain proposals on changing the activities of medical institutions – the need for clear separation of hospitals into surgical hospitals, hospitals dealing with infectious, skin and venereal diseases. Another challenge during the war was the evacuation of the wounded due to a shortage of ambu-

lances. In all field armies, with the exception of medical facilities of the war department, there were institutions operating under the flag of the Red Cross, the Zemstvo Union, the Union of Cities and private individuals¹⁴ that made a significant contribution to medical support. On 1st September 1914, the headquarters of the RRCS revealed that 45 hospitals, 35 staging and 33 mobile infirmaries had been created and dispatched to the front since the beginning of mobilisation. Furthermore, three naval hospitals had been deployed (in Riga, Reval and Sevastopol). There were 476 doctors, 1196 nurses and 4398 sanitary assistants serving in the army under the RRCS. By 9th September 1914, the pre-war mobilisation plan had been fully implemented, although “owing to the huge influx of the wounded”, most medical institutions of the RRCS were constantly working with more beds than was meant for the staff. As a result, the RRCS set out to establish new institutions in September 1914 (Chistyakov 2009, p. 68). Therefore the war exposed the shortcomings of medical support for the troops. The eradication of these shortcomings was the priority task of the Commission. In order to come up with objective solutions to a range of problems, professors N.N. Burdenko, D.K. Zabolotny, N.A. Velyaminov and others were invited to join the Commission.

At one of the meetings of the Commission held on 4th November 1915, N.N. Burdenko touched on the problem of supplying dressing detachments and infirmaries with medical equipment (see fig.). He noted that out of 85 hospitals he had inspected, only 7 had autoclaves, while 14 fortress hospitals (each with 420 beds) did not have a single autoclave.¹⁵ This hindered the organisation of surgical assistance, which required sterile dressing materials in sufficient quantities in order to prevent wound infections and possible complications. The number of wounded individuals increased during the war, which hampered the timely delivery of sterile materials in the required quantities. Non-sterile dressing materials had to be used at times. Used material had to be destroyed, although with the right equipment it could have been treated and reused, which could have enabled to not only reduce the number of complications due to wound infections, but also cut costs on purchasing materials. The only sterilisation equipment available was the autoclave which operated at a temperature of 115–120°C. However, full sterilisation required considerable time.

After presentation of the report, the Commission proposed to use the most convenient, simple and por-

¹¹ We could not find materials sent to the commission by the head of the sanitary department of the 7th army headquarters in the RIGVA.

¹² The Luer syringe, glass syringe, was brought into use in 1894–1897. The syringes came in different sizes – from 2 to 100 ml. The syringe had a graduated cylinder, a hollow-body plunger with a conical end. This design could be well disinfected by boiling in disassembled form. The syringe was manufactured by Luer from thermally and chemically resistant glass. It could be sterilised in an air steriliser (it could withstand temperatures of up to 200 degrees). The conical connection proposed by Luer soon became an international standard and most common type of connecting the needle to the syringe cylinder. The reusable Record syringe was designed in 1906. It had a glass cylinder, a metal plunger and a metal needle. The graduated cylinder was rolled into metal rings on both sides. In the lower ring, a steel cone was screwed on in order to fix the needle, and the metal plunger with rubber seal rings entered the upper ring.

¹³ The list was drawn up based on materials sent by the head of the sanitary department of the 8th army to the Commission for the revision of sanitary and medical supply standards for the army. Russian State Military Historical Archive (RGVIA) F. 369 Op. 7 D. 14 L. 1–22.

¹⁴ RGVIA (F. 369 Op. 7 D. 7, 8, 9) we found materials sent to the commission for the revision of sanitary and medical service standards by institutions of the RRCS, the All-Russian Zemstvo Union and the All-Russian Union of Cities. They contain detailed reports (records) with lists of all military medical institutions which petitioned them for assistance with the names and amounts of supplied medicines and medical equipment.

¹⁵ RGVIA F. 369 Op. 7 D. 3 L. 6–7.

Приложение къ протоколу № 2.

ДОКЛАДЪ

О СНАБЖЕНИИ ПОЛЕВЫХЪ ЛЕЧЕБНЫХЪ ЗАВЕДЕНИЙ ПРЕДМЕТАМИ АСЕПТИЧЕСКАГО СНАРЯЖЕНИЯ.

Просмотръ каталоговъ снаряжения полевыхъ лечебныхъ учреждений: дивизионныхъ лазаретовъ, полевыхъ госпиталей и запасныхъ госпиталей даетъ право сказать, что имъ поставлена многообразная задача, что въ нихъ не выдержанъ ни хирургическій, ни терапевтический типъ. Въ этомъ, можетъ быть, есть своя положительная сторона, но въ этомъ кроется чреватая своими тяжелыми послѣдствіями слабая сторона: они не имѣютъ возможности явиться на фронтъ съ общеніемъ продуктивной работы, независимо отъ совершенства врачебнаго персонала. Начиная уже съ дивизионнаго перевязочнаго отряда дѣлаются операціи неотложной спѣшности - жизненное показаніе. Въ дивизионномъ лазаретѣ идетъ продолженіе этой работы, въ полевомъ госпиталѣ она развивается въ ширь и глубь. Подъ понятіе "жизненная операція" можно подвести оказаніе оперативной помощи въ видѣ весьма сложной операціи, которая пройдетъ въ будущемъ удачно для дальнѣйшей судьбы раненаго и сохраненія его работоспособности лишь при условіи соблюденія опредѣленнаго минимума требованій асептического закона: это - стерильность матеріала, стерильность инструментовъ, стерильность больного, стерильность ближайшаго пространства къ операціонному полю и стерильность рукъ врача.

Достиженія эти желательны въ дивизионномъ перевязочномъ отрядѣ, возможны въ дивизионномъ лазаретѣ, обязательны - въ полевомъ подвижномъ госпиталѣ и непремѣнно-обязательны - въ запасномъ госпиталѣ.

Предполагая полное знакомство врачебнаго персонала съ теоретическими основами и практикой асептики, мы должны признать, что многое изъ указанныхъ требованій асептики не можетъ быть выполнено изъ-за недостаткомъ асептического снаряженія дивизионныхъ лазаретовъ, полевыхъ, запасныхъ и даже крѣпостныхъ госпиталей. Имѣется на лицо асептический матеріалъ въ прекрасной заготовкѣ и укупокѣ завода военно-врачебныхъ заготовленій /многократныя изслѣдованія на фронтѣ неизмѣнно подтверждали его стерильность/, имѣется воз-

ому естественнѣе всего стремиться къ совершенному типу обезпложивающихъ типовъ можно считать типъ практичской хирургіи и поніямъ

аторами, необходимо облегчить и эгчить дезинфекцію рукъ врачей, -первыхъ, портативными умывальни- стѣйшей системы и, напримѣръ, ти- виновыми перчатками, по крайней

ѣ установить, что мы далеко не яв- ія на мѣстѣ, что мы не требуемъ огня, почему дивизионный отрядъ не ннѣшняя война обсуждения, а, затѣмъ, особенно ѣ какъ значительный періодъ ея про- й войны, когда дивизионные лазаре- пунктѣ, равно какъ полевые носпи- госпиталяхъ, и могли, и должны бы- ѣ раненымъ. Поэтому мы полагаемъ рму полевыхъ лечебныхъ заведеній о: I/ снабдить автоклавами всѣ за- зне госпитали и дивизионные лаза- портативной системы тѣ же учрежде-

перчатками тѣ же учреждения и особенно дивизионные перевязочные отряды и 4/ дополнить снабженіе предметами госпитальной обстановки, требуемымъ асептическимъ снаряженіемъ.

Если мы будемъ считать только существующіе лазареты и госпи- тали, то потребуется:

автоклавовъ-стерилизаторовъ	1134 шт.
умывальниковъ	1134 "
резиновыхъ перчатокъ	отъ 40 до 45 тысячъ паръ.

Докладчикъ

Н. Н. Бурденко

Fig. The first and the last page of the report by N.N. Burdenko and his signature (November 4, 1915). Russian State Military Historical Archive (RGVIA) F. 369. Op. 7. D. 3. L. 6-7

table French-designed Leke steriliser instead of the Turner¹⁶ steriliser. The test results of this autoclave were presented at a meeting of the information and consulting unit of the sanitary department of the Central Military-Industrial Committee on 18th September 1915, which was chaired by professor D.K. Zabolotny.¹⁷ (Professor A.A. Kadyan, Dr. P.B. Khavkin, engineers A.M. Achkasov, F.V. Sokolov, B.N. Prokhorov were present during the tests). This type of autoclave cost about 500 rubles during peacetime. The Commission thought this model could be manufactured in Russia and the price would go down to 400 rubles. For a start, about 1000 autoclaves¹⁸ would be needed. MASD representatives were part of the discussion of supplying evacuation hospitals with this type of autoclave. Surprisingly, member of the Commission and MASD department head, V.I. Kruzhkov, argued that aseptic equipment would not be needed in all evacuation hospitals because some of them were not surgical¹⁹ hospitals, despite the fact that during the war hospitals often had to perform other functions besides their designated functions.

In this report, N.N. Burdenko drew attention to the creation of a sterile environment in hospitals in order to perform “vital operations – the provision of surgical assistance in the form of a very complex operation, which would be successful for the fate of the wounded, his health, only provided that certain minimum requirements of the aseptic law are met: sterility of materials, sterility of instruments, sterility of the patient, sterility of the space surrounding the operating field and sterility of the doctor’s hands. The achievement of these is desirable in the dressing detachment, is possible in the divisional infirmary, is mandatory in the field mobile hospital and is fundamental in the emergency hospital”.²⁰ A special meeting on 14th November 1915 not only approved new standards for field hospitals and infirmaries, but also made the decision to increase their number by 15%. The introduction of new types of medical equipment (autoclaves) was also approved (Zhurnal №24... 1975, p. 418).

¹⁶ The French-designed Leke autoclave sterilised up to 3 kg of materials in 1 hour 10 minutes. The apparatus met basic requirements set by the Commission: simplicity of the device, heating with kerosene, capacity to raise temperature to 1–3 atm, obtaining properly sterilised and not very wet material. Apparatus with flowing steam, which had been previously used (for example, the Turner apparatus), killed spore-bearing forms only after long sterilisation periods, which was difficult to ensure during war due to the large amounts of materials requiring sterilisation.

¹⁷ RGVIA F. 369 Op. 7 D. 3 L. 8–9.

¹⁸ RGVIA F. 369 Op. 7 D. 3 L. 6–7.

¹⁹ RGVIA F. 369 Op. 7 D. 3 L. 4

²⁰ N.N. Burdenko proposed to make aseptic equipment standard for field medical facilities: 1) autoclaves, 2) portable wash-basins with spring locks of the simplest system, for example, Dr. Isachenko’s type, 3) rubber gloves (a dozen for each doctor).

A meeting of the Commission on 28th November 1915 discussed the expansion of the network of horse-drawn military medical transport and the improvement of its equipment with warm clothing (the report in this issue was presented by Doctor of Medicine A.I. Tarasov).

Based on the Commission’s estimates, it was decided that each unit should be supplemented with another 268 two-wheeled sanitary carts²¹ because at the current rate, up to 1200 wounded individuals in each unit were at risk of being left on the battlefield. An additional 16 080 two-wheeled carts were required. Considering that each Finnish-type two-wheeled cart with a harness²² cost 450 rubles, a total of 7 236 000 rubles was required.

The Commission proposed to create military medical transport reserves. To this end, besides said number of two-wheeled carts, another 600 had to be manufactured at a total cost of 270 000 rubles. The total cost was to be 7 506 000 rubles.

At a meeting of the Commission on 9th December 1915, chairman A.I. Guchkov said the number of two-wheeled carts needed to be increased to 485 per unit. The Commission passed a resolution to allocate a loan of up to 6 402 000 rubles²³ to purchase 11 640 two-wheeled carts.

Professor N.A. Velyaminov drew the Commission’s attention to the shortage of means of transporting the wounded from the front line to the area of operations, as well as horse-drawn transport when evacuating the wounded using hand-held stretchers over considerable distances (up to 6 versts²⁴). A proposal was made to urgently address the supply of dressing detachments with wheeled stretchers.

Furthermore, the Commission paid attention to pack (mule or horse) transport, which was necessary when waging war in mountainous areas, as well as for the cavalry. A decision was made to create pack transport units – two for each army – and hand it over to the heads of sanitary departments of the army headquarters.

According to the Commission’s decision, the supply of warm clothes needed urgent adjustment (calculated for 100 people). The Commission proposed to allocate up to 165 100 rubles for warm clothes for the military medical transport. The amount of warm clothes had to be increased in the light of the protracted war and the approaching winter. The Commission therefore fully covered the issue of medical support for the army – from the supply of medicines to the evacuation of the wounded. The Commission soon began working closely with the veterinary department of the war department.

²¹ Field ambulances. – *Editor’s note.*

²² Horse drawn requiring harnesses. – *Editor’s note.*

²³ RGVIA F. 369 Op. 7 D. 3 L. 24.

²⁴ 1 verst equals 0.6 mile – *Editor’s note.*

At a meeting of the Commission held on 28 November 1915, professor N.N. Burdenko presented a report on division dressing detachments and division infirmaries. He said these facilities were in need of larger supplies of medicines in vials (morphine, camphor, caffeine, cocaine, novocaine, digalen, pantopon) and in the form of tablets (codeine, quinine, caffeine, novocaine, opium, phenacetin), as well as anaesthetic, soporific, cardiovascular, antifebrile and disinfection agents. Antiseptic equipment (autoclaves, wash-basins, gloves, surgical garb, coats for medical personnel and towels for operating theatres) also required special attention. There was also a need to increase the supply of patient care items (thermometers, rubber catheters, rubber rings, etc), introduce the use of urine bags, enamel drinking bowls, hip fixing lines, Shile supports, and to expand the range of surgical instruments and dressing apparatus. The replacement of the outdated Pravaz²⁵ syringe with the Record²⁶ syringe was also proposed. These measures would enable the creation of an effective type of infirmary which, due to limited stocks of medicines and equipment, as well as problems with supplies, would have not coped with its functions for long. All this pointed to the need to bring infirmaries closer to depots – field pharmacy departments, i.e., to create advance depots at the hospital centre located at the nearest point to the rear of the front, from where medical, surgical and hospital supplies would be delivered continuously. Depots had to be brought under the sanitary department of the army which, through its doctors, would have monitored whether the needs of infirmaries were being met.

In the first months of the war, the issue of delivering supplies to infirmaries was resolved with the help of private organisations and the RRCS, which had depots at the nearest point to the rearmost lines.

The intervention of government organisations was necessary in order to resolve the issue of medical sup-

port for the army. The Commission acknowledged the need to set up advance depots at the rear of the front lines in order to supply medical institutions of corps regions, with one depot per army, which were at the disposal of the heads of the sanitary departments of the army headquarters. These depots were stocked in accordance with catalogues, which had to include hospital items to be delivered to divisional infirmaries.

A meeting of the Commission held on 17th December 1915 addressed the reorganisation of the main evacuation hospitals. N.N. Burdenko and A.I. Guchkov pointed out that despite the fact that the evacuation system and its structure, which was carefully planned through the Provisional regulation on the evacuation of the wounded and sick of 8th August 1914, the work of the evacuation stations needed improvement. The primary shortcoming was that the main evacuation stations did not report to the heads of sanitary departments of the army headquarters and the lack of communication between them (telephone communication was introduced to resolve this problem). At the instigation of the Commission, the position of chief physician of the main evacuation station had to be entrusted to a surgeon, who would have two assistants – an operating surgeon and a general physician – to help sort the wounded and patients suffering from infectious diseases. Hospitals under the main evacuation station were to be classified into two types: surgical and infectious disease hospitals. If a main evacuation station was located at a railway station, the Commission proposed to allocate that station a train with special wagons equipped to handle patients suffering from infectious diseases²⁷ arriving from the front.

During meetings held on 23rd January and 11th March 1916, the Commission discussed matters relating to the delivery of sanitary supplies to military medical organisations and army units. A decision was made to simplify the procedure of restocking with dressing materials, as well as medicines from field pharmacies and their departments.²⁸ The army sanitary department's medical procurement plan was presented before the Commission on 3 April 1916. Professor N.N. Burdenko said the reports presented by the Commission did not reflect the actual consumption of sanitary equipment because they were based on materials from the front, while reserves of military medical organisations were mostly replenished through public institutions. The chief military sanitary inspector A.Y. Evdokimov countered that the procurement plan had already been approved by the Special Council and had been presented for implementation and was not subject to discussion by the Commission. He offered the Commission to consider a procurement plan for medicines to replenish reserves for the period up to 1st July 1917. However, N.N. Burdenko noted that the primary task of the

²⁵ The Pravaz syringe was invented in 1853 and was used until the mid 20th century. It consisted of a 1 ml glass cylinder with a rubber casing and a metal rod with a leather plunger, which made its sterilisation difficult. The reusable Record syringe was invented in 1906 and is still in use. The Record syringe consists of a cylinder made of heat-resistant glass, and the rest of the components are metal (needle and plunger). The graduated cylinder was rolled into metal rings on both sides. In the lower ring, a steel cone was screwed on in order to fix the needle, and the metal plunger with rubber seal rings entered the upper ring. Needles were held on the syringe through friction and the cone-shape of the connection, which raises the risk of slipping during entry of the solution or washing. Sterile syringes were normally packed in sealed brown paper – “kraft packaging”. The syringe came with reusable needles (10 needles per syringe). Before sterilisation, the needles were washed and cleaned with a special fine wire – “mandrin”. Syringes made of glass and metal are designed to be reused and can be sterilised. The main shortcoming of glass syringes was their fragility, they could easily break and required special transportation and storage conditions.

²⁶ RGVIA F. 369 Op. 7 D. 3 L. 22–23.

²⁷ RGVIA F. 369 Op. 7 D. 3 L. 31–34.

²⁸ RGVIA F. 369 Op. 7 D. 3 L. 58–64.

Commission was to present conclusions regarding the procurement plan of the army sanitary department.

In the end, the Commission made the following resolution: due to the lack of sufficient data on the correct planning of medical supplies, to instruct N.N. Burdenko, in collaboration with the head of the 3rd division of the MASD and the clerical office of the commission to verify the department's figures and draw up conclusions for the chairman of the commission under the Special Council²⁹ before 1 July 1917.

The discussion of the procurement plan continued from 6th May 1916 to 1st July 1917. The plan was drawn up by the army sanitary department, not based on theoretical calculations using the standard, but in accordance with the needs of the army and military sanitary organisations and was approved by the Special Council. Therefore the Commission only had to adjust supply volumes of specific medical items (the number of Record syringes and spare needles for these syringes was increased, and the number of thermometers for measuring body temperature was also increased).³⁰ Cost was a critical issue when discussing the procurement plan for medical equipment. The estimate price was often understated,³¹ which meant allocations had to be increased.

The Commission was an interdepartmental body and so its meetings discussed procurements of sanitary equipment to cover the needs of military sanitary institutions, which were carried out by the main supply department.³² Without this equipment, it was impossible to evacuate the wounded and treat them in medical institutions. The Commission also played the role of intermediary between the Special Council and public organisations (the All-Russian Zemstvo Union and the Union of Cities, RRCS) when it came to reviewing petitions for grants for providing assistance to the sick and wounded troops, as well as procurement of medicines, including from abroad.

The Commission was the “link” and it dealt with a broad spectrum of problems. On 24 October 1916, at one of its meetings, the Commission resolved the question of ordering 160 000 francs³³ worth of medicines from France.

Meetings of the Commission discussed doctors' reports on the state of medical affairs at the front. On 28th January 1917, Dr. I.F. Lorie presented a report on providing medical assistance to those poisoned by gas in the second army. While discussing that report, representatives of army sanitary departments at the front noted that troops were not properly equipped with Zelinsky-Kummant gas masks, which meant individual

protection of military personnel in the event of gas attacks was unsatisfactory.³⁴ Special hospitals for those poisoned by gas were not to be deployed at main evacuation stations and not in the immediate vicinity of the front line in order to enable the timely delivery of assistance to a large number of victims in the event of a gas attack. The Commission ordered those responsible to determine the required supplies of medical equipment for army units and field military medical institutions in order to help poison gas victims, and to bolster work on informing military personnel on protective measures in the event of the use of poison gas by the enemy.

After the February Revolution of 1917, the MASD set up a temporary commission on the provision of the army with sanitary items. That commission was given broad powers (Gladkih 1997, p. 63). During meetings held in February and May 1917, the Commission discussed and approved a plan for delivering supplies to military medical institutions of the field army before 1st July 1918. However, no archive documents have been found showing when the Commission ended its activities. The work of the Special Council on state defence continued after the Bolsheviks took power. Through the decree of the Council of People's Commissars of 25th November 1917, the council was brought under the People's Commissariat on Trade and Industry (Dekret ob Osobom soveshchanii... 1917), but on 1 December it was “handed back to the War Ministry” (Ob Osobom soveshchanii... 1917a). In December 1917 the government ruled that the Special Council would include representatives of the people's commissariats on military and maritime affairs, trade and industry, food, finance, communications, labour, control and agriculture. Its chairman would be the people's commissar on military affairs, but the council would be guided by the instructions of the Supreme Council of National Economy. The Council drastically changed its operations: it had to cancel or reduce defence orders and transform factories into civil manufacturing (Ob Osobom soveshchanii... 1917b). Later, through the order of the Supreme Council of National Economy, the Special Council on defence was to directly report to the “seventh department” of the Supreme Council of National Economy and was renamed the Council on Funding Enterprises (O pereimenovanii Osobom soveshchaniya... 1917).

Conclusion

The Commission for the Revision of Sanitary and Medical Supply Standards began its work in October 1915 amid the raging war. Its establishment was a response to the crisis in medical supplies for the Russian army. Due to the narrow profile of the tasks put before the sanitary commission, its significance in the work of the Special Council on Defense, which primarily dealt

²⁹ RGVA F. 369 Op. 7 D. 3 L. 77.

³⁰ RGVA F. 369 Op. 7 D. 3 L. 85.

³¹ For instance, it was indicated that stretchers cost 12 rubles 30 kopecks, although their actual price was 18 rubles 50 kopecks.

³² RGVA F. 369 Op. 7 D. 3 L. 86–107.

³³ RGVA F. 369 Op. 7 D. 3 L. 108.

³⁴ RGVA F. 369 Op. 7 D. 3 L. 112–122.

with the organisation of supplies to the army and naval forces, mobilisation of the industry to work in support of defence, was unfairly understated. However, most resolutions passed by the Commission were approved during meetings of the Council which, overall, demonstrates the fruitfulness of its work. Despite the insufficient preparation of the Russian army and its medical service for an extensive war, as well as the weak domestic chemical, pharmaceutical and medical industries, the system for delivering medical supplies to Russian troops during

World War I was largely satisfactory. The Commission for the Revision of Sanitary and Medical Supply Standards made a significant contribution to this process because it was able to coordinate the activities of various bodies and organisations. Analysis of archive documents on the activities of the Commission demonstrates the unprecedented nature of its competencies, the wide range of complex tasks it dealt with, the uniqueness of its composition as well as great effectiveness in resolving issues relating to delivering medical supplies to the Russian army.

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