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THE FORMATION OF THE HEALTHCARE SYSTEM IN SURKHANDARYA PROVINCE AND THE EMERGENCE OF AN INSTITUTIONAL NETWORK AGAINST MALARIA (1930s–1940s)

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ABSTRACT

This article examines the formation of the healthcare system in Surkhandarya province in southern Uzbekistan and the establishment, within it, of a specialised anti-malaria network during the 1930s and 1940s. As the warmest and most southerly part of the Uzbek SSR, with extensively irrigated cotton valleys and a long border with Afghanistan, the region was one of the most severe foci of malaria in Central Asia. Drawing on historical-medical literature and the documented structure of the Soviet health service, the study shows how the centralised Semashko model was adapted locally, how tropical and malaria stations were organised, and how vector-control and chemoprophylactic measures were applied. Situating the regional experience within the wider Soviet campaign led by the Martsinovsky Institute and the Bukhara Tropical Institute of L.M. Isaev, it argues that these institutional foundations made possible the later interruption of malaria transmission and mark a formative stage in the region’s modern public-health history.

Keywords

Surkhandarya, malaria, tropical station, anti-malaria network, Soviet healthcare, Semashko system, Anopheles, Uzbek SSR, public-health history, epidemiology.

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Introduction

The history of public health in Central Asia in the first half of the twentieth century is inseparable from the struggle against endemic disease, and malaria occupied a central place within it – a medical burden, an obstacle to agriculture, and a measure of the modern state’s reach into rural life. In the southern districts of the Uzbek SSR, especially the valleys of the Surkhan, Sherabad and Amu Darya rivers, malaria was hyperendemic and shaped the economic and demographic profile of whole communities. This article reconstructs how, during the 1930s and 1940s, a formal healthcare system took shape in Surkhandarya and how, within it, a specialised institutional network for the control of malaria emerged.

The question is of more than local interest. Uzbekistan is today certified by the World Health Organization as malaria-free – a status conferred in 2018 [9] – but that achievement rested on foundations laid decades earlier, when tropical-medicine stations, malaria stations, laboratories and trained field personnel were first created. As the warmest and most malarious region of the republic, Surkhandarya offers an instructive case of how centralised Soviet public-health policy was translated into working institutions under demanding ecological conditions. The article outlines the region’s epidemiological setting, the Soviet institutional model into which it was integrated, and the formation, methods and legacy of its anti-malaria network.

The study rests on a critical reading of secondary historical-medical literature on malaria and public health in the former Soviet Union and Central Asia, supplemented by geographical descriptions of Surkhandarya. The method is historical and analytical: regional developments are interpreted against all-Union policy, and epidemiological data are used to explain the choice of control measures. Because much primary documentation

remains dispersed in republican and provincial archives, the account is interpretive – establishing the general institutional trajectory rather than an exhaustive administrative chronicle, and indicating directions for further archival research.

Surkhandarya is the southernmost province of Uzbekistan. Bounded by the Hissar Range in the north, the Baysuntau and Kugitangtau spurs in the west, the Babatag Mountains in the east and the Amu Darya – the frontier with Afghanistan – in the south, it embraces the basins of the Surkhan and Sherabad rivers [12]. The encircling mountains shield the lowlands from cold northern air and make the region the warmest in the country, with mild winters and hot, dry, prolonged summers; mean July temperatures on the plain reach some 28–32 °C [12]. Cotton, much of it fine-staple, is grown on irrigated land in the river valleys, together with rice, sugarcane and fruit.

These same features – abundant irrigation water, warmth over a long season, and dense rural settlement tied to cotton — created near-ideal conditions for the anopheline mosquitoes that transmit malaria. Standing water in irrigation ditches, rice paddies, reservoirs (khauz) and marshy river margins provided extensive breeding habitat, and the long warm season allowed repeated cycles of transmission. Across Central Asia malaria was among the most prevalent diseases of the early twentieth century, with hundreds of thousands of cases reported annually in Uzbekistan [1; 10]; during the 1930s and 1940s the region suffered outbreaks of a dangerous “fulminant” form of Plasmodium vivax that could prove fatal and struck children and adolescents especially hard [5]. Its rapid spread in the 1920s and early 1930s, driven by population movement, resettlement and the expansion of irrigation, made malaria a pressing concern for the new authorities [4].

The healthcare system that took shape in Surkhandarya extended the centralised model established across the Soviet Union after 1918. Under the People’s Commissariat of Public Health (Narkomzdrav), founded in July 1918, medical care was organised as a unified, state-funded and centrally planned service, free at the point of delivery and oriented strongly towards prevention and the control of communicable disease [3]. This model – later associated with N.A. Semashko – arranged institutions in a hierarchy running from central research institutes through republican and provincial bodies down to rural health posts, and treated the fight against epidemic disease as a state priority tied to economic development.

Within this framework a dedicated anti-malaria apparatus was built. A Central Malaria Commission was established at Narkomzdrav in April 1921, and E.I. Martsinovsky and his colleagues promoted a specialised network of rural anti-malaria stations backed by research institutes and trained personnel [3]. Between 1922 and 1934 nine tropical institutes for the control of malaria and other parasitic diseases were founded across the southern republics and regions under the scientific leadership of the Martsinovsky Institute, and about 2,500 malaria stations were created nationwide over roughly a decade (Table 1) [3]. Of these, the Bukhara Tropical Institute, opened in the 1920s under L.M. Isaev, became a leading regional centre; Isaev’s eradication of guinea-worm (rishta) from Bukhara showed that systematic, ecologically informed campaigns could eliminate entrenched endemic disease [1]. E.N. Pavlovsky’s concept of the natural nidality of transmissible diseases provided the scientific rationale for control tailored to local ecology [11].

Table 1. The network of Soviet tropical institutes established between 1922 and 1934 [3]

№	Location of the tropical institute	Republic / Territory
1	Kharkov	Ukrainian SSR
2	Yerevan	Armenian SSR
3	Tbilisi	Georgian SSR
4	Bukhara	Uzbek SSR
5	Makhachkala	Dagestan ASSR (RSFSR)
6	Baku	Azerbaijan SSR
7	Dushanbe	Tajik SSR
8	Rostov-on-Don	RSFSR
9	Ashgabat	Turkmen SSR

The sanitary-epidemiological service formed in Uzbekistan during the 1920s, with its tropical stations and their laboratory, disinfection and malaria work, created the template extended southward in the following decade [10]. In

Surkhandarya the build-up of health institutions accompanied the wider reorganisation of the countryside – collectivisation, the expansion of the cotton economy and the settlement policies of the 1930s – all of which raised both the malaria risk and the capacity to respond to it.

A decisive step came on 6 March 1941, when Surkhandarya became a separate province (oblast) of the Uzbek SSR with Termez as its centre [12]. A distinct provincial administration provided the anchor for a regional health apparatus: a provincial health department, hospitals and outpatient facilities in the district centres, and a regional malaria station with subordinate tropical points responsible for surveillance and control across the province’s districts.

The network followed the all-Union hierarchy. At its apex stood the malaria (tropical) station, staffed by physicians, entomologists, laboratory technicians and disinfectors, which carried out parasitological diagnosis, entomological survey of breeding sites and the planning of control measures. Beneath it, tropical points and rural health posts – including feldsher and feldsher-midwife stations – extended diagnosis and treatment into villages and collective farms, while sanitary brigades and disinfectors did the practical work of larviciding, drainage and household protection. Because qualified specialists were scarce, the republican institutes at Bukhara and, later, the Isaev Institute at Samarkand trained personnel and supplied methods and reagents for the district network [10], linking the villages of Surkhandarya to the central research establishment in Moscow.

Anti-malaria work combined attack on the mosquito vector, treatment and prophylaxis of the population, and modification of the environment. Vector control relied heavily on reducing breeding sites: draining marshes and stagnant water, maintaining and straightening irrigation channels, and oiling or chemically treating standing water to kill larvae. The larvivorous fish Gambusia, introduced into ponds, reservoirs and rice fields, was widely used across the Soviet south as a biological control.

For the human population, diagnosis rested on microscopic examination of blood films, while treatment and mass prophylaxis were based on quinine and, increasingly, synthetic antimalarials, organised on a large scale among agricultural workers during the transmission season. In the later 1940s the residual insecticide DDT reinforced the campaign, making systematic house-spraying feasible [3]. Alongside these environmental, biological, chemical and pharmaceutical measures ran sanitary enlightenment: posters, lectures and instruction in the local language explained the link between mosquitoes and disease and secured popular cooperation – essential in a rural society where the biological mechanism of malaria was unfamiliar [4].

The network established in the 1930s and 1940s did not by itself eliminate malaria, but it created the organisational and scientific preconditions for the large-scale eradication campaign that followed. Launched across the Soviet Union at the end of the 1940s and intensified in the 1950s, that campaign drew on the stations, personnel and methods of the preceding two decades. Its results were dramatic: falciparum malaria was eliminated from Uzbekistan by 1951, and local transmission of vivax malaria was interrupted throughout the republic – as across most of Central Asia – by 1961 [5; 6].

Seen in this light, the developments of the 1930s and 1940s in Surkhandarya were formative rather than triumphant. Their significance lies less in immediate epidemiological victory than in the construction of durable institutions: a provincial health administration, a specialised malaria service, a cadre of trained personnel, and a repertoire of methods adapted to local ecology. The region also illustrates a broader pattern in Central Asian public-health history – the interaction of centralised policy, all-Union scientific institutions and demanding local conditions. The detailed record of individual stations, staffing and case statistics for Surkhandarya remains to be recovered from provincial and republican archives, and a fuller history will require systematic research in both Russian and Uzbek.

Conclusion.

In sum, during the 1930s and 1940s southern Surkhandarya acquired, for the first time, a formal and hierarchically organised healthcare system in which the control of malaria was central. Shaped by the region’s warmth, irrigated valleys and border with Afghanistan, the institutions created there were local expressions of an all-Union model – the Semashko service, the Central Malaria Commission, the Martsinovsky network of tropical institutes, and the ecologically informed methods of Isaev and Pavlovsky. The provincial malaria station, its tropical points and rural health posts, and the measures they applied laid the groundwork for the later interruption of transmission and, ultimately, for the malaria-free status certified in 2018 – and thus deserve a prominent place in the public-health historiography of Uzbekistan.

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