



## **The Provision of Modern Medical Services to a Nomadic Population: A Review of Medical Services to the Bedouins of Southern Sinai During Israeli Rule 1967–1982**

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### **Abstract**

Southern Sinai, a mountainous desolated arid area, is inhabited by Bedouin nomad tribes composed of Arabic-speaking Moslems. Until the Six Day War between Egypt and Israel in 1967, healthcare services in the region were based on traditional medicine performed by the Darvish, a local healer. Over the course of Israeli rule (1967–1982) an elaborate healthcare service was established and maintained, providing modern, up to date, comprehensive medical services that were available to all free of charge.

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The Sinai Peninsula, a land bridge between Africa and Asia, is a desert area of 23,422 square miles. The southern third is mountainous and difficult to access. Sinai is inhabited by nomadic Bedouin tribes [1].

From 1967 to 1982 the Sinai was under Israeli military occupation. During this period the Bedouin population of southern Sinai enjoyed modern medical services for the first time. The official Israeli healthcare policy for the civilian population was expressed by the then General Director of the Ministry of Finance, Dr. Y. Arnon, on 4 September 1967. He stated: "Our policy is only to preserve the existing services" [2]. However, for all practical purposes, almost no medical services existed in the southern part of the Sinai dessert. Guided by humanitarian concerns, the objectives were changed and a modern healthcare service was set up, thanks to the dedication, perseverance and devotion of people in the field, including physicians, nurses and auxiliary staff.

This article describes the medical services that were established and provided to the civilian population in the southern part of the peninsula by the Israeli authorities. These services can serve as a model for the provision of modern, sophisticated medical care to a nomadic population in a barren region.

### **Sources of information**

The article is based primarily on the personal recollections of people who were directly involved in the planning and/or conduct of medical services for the Bedouins of southern Sinai from 1967 to 1982, including two of the authors (P.R and Y.R) . One article on the subject was found in the medical literature [3], and one popular

article was found in the Israeli press [4]. The protocols of the General Director's Committee of Ministries of the Government of Israel in charge of Civil Affairs for the Occupied Territories were an invaluable source of information relating to the plans and intentions concerning medical services for the Bedouin population [2]. General data on various aspects of the lifestyle of the Sinai Bedouin were extracted from two comprehensive books on the subject published in Israel after the Six Day War [5,6].

### **Population**

The area is populated by nomadic, Arabic-speaking, Muslim Bedouin tribes originating from the southern Arabian Peninsula. The Bedouin society is patriarchal and centers around the extended family and the tribe. At the start of Israeli rule in 1968 the population of southern Sinai was estimated to be about 5,000 residents. The 1979 census recorded 11,000 organized in 10 tribes, the smallest numbering 60 and the largest 4,000. The tribe of J'abelie, which numbers 1,400 and resides in the vicinity of the Saint Catherine Monastery, is exceptional in that these descendents of the Bosnian and Walachian serfs were settled there by Justinian as guards and servants of the monastery [5,7].

### **Healthcare services prior to Israeli rule**

Throughout the centuries Bedouin healthcare was based on traditional medicine. It was available, trusted and culturally relevant. Patients or their family members rendered the treatment. Medical knowledge and skill was accumulated and transmitted by oral tradition from generation to generation. Women were responsible for the treatment of trivial problems like the common cold, fever or stomach ache. More complicated cases were turned over to the local healer (the Darvish) – a central, respected and very important figure in Bedouin society. The Darvish was believed to have magical powers for treating diseases caused by the evil-eye or evil spirits that possessed the body of the sick person. The range of medical problems encountered and treated was broad and varied, including sores, broken bones, snake bites, infertility, mental disorders, and extraction of teeth. The Bedouins believed that the success or failure of the Darvish was in the hands of God. This fatalistic faith that characterizes Bedouin society led to the unquestioning acceptance of God's verdict in cases of death, which

was a frequent visitor to their tents. The main therapeutic modality was speech, most often recitation of verses from the Koran. Other methods included burns, flagellation and homemade preparations concocted from local herbs, excrement, parts of domestic animals (camel, donkey, goat, etc.), or herbs imported from Egypt [6]. The harsh conditions of the desert, especially lack of water, dictated the Bedouins' sanitary habits. Bedouins did not practice isolation of patients, so there were high rates of cross-infection [5]. In cases of emergency, the Bedouins had a very small number of conventional medical services to which they could turn. These included a hospital for infectious diseases at ATur, the Egyptian military infirmary at the nearby St. Catherine monastery, and the Italian Oil Company camp near Abu-Rudeis, where a physician was available at all times. In reality, the Bedouins rarely used these services because of their basic mistrust of others and the humiliating attitude that they encountered at the various medical institutes.

### **Israeli healthcare services 1967–82**

A week after the Six Day War ended, it was decided by the committee of the General Directors of the Israeli government ministries that Israel would take full responsibility for the provision of all services required to maintain the well-being of the population at the pre-war level. This would have been easy to implement had the authorities kept to this decision literally. However, the realities encountered and the goodwill of the authorities, particularly as manifested by the dedication of the workers in the field, resulted in the establishment and maintenance of an elaborate medical system.

The system evolved gradually, due to difficulties such as population dispersion over vast desert and mountainous areas, areas inaccessible by ordinary motor transportation, and lack of data on the size and composition of the population. It soon became obvious that the services could not be based on Bedouins coming to one or two permanent clinics, and that the campsites of the various tribes had to be reached. Thus, the permanent clinic became both a medical center and a base from which satellite clinics were served and supplied.

The first permanent clinic was established at Abu-Rudeis and operated until 1974. It contained two examination rooms, a waiting room, a dentistry cabinet, a sickbay with three beds, and a dispensary. It was staffed by a physician, a registered nurse, a translator, a Bedouin nurse-aid and an ambulance driver. In addition to daily sessions in Abu-Rudeis, the staff visited the satellite infirmaries on a fixed schedule. The latter were located in shacks of one or two rooms constructed of mortar and aluminum. At locations in which there was a significant number of Bedouin families, a trained Bedouin male nurse-aid was chosen to serve as the liaison officer to the local population. The Bedouin nurse-aids were key facilitators of the service process; they arranged for tribe members to come to the clinic and carried out the doctor's instructions. They underwent a formal 3 month training course at the El-Arish hospital in northern Sinai, run by the Israel Ministry of Health and directed by an Israeli registered nurse. The training included recognition of basic emergency situations and very simple algorithms for triage. They were trained to dress wounds, dispense

analgesics, apply ointments to skin and eye sores, etc. In critical situations the nurse-aids were responsible for the transfer of patients to the permanent clinic. During most of the week they were the only medical authorities available apart from the Darvish.

In the early 1970s, an additional two permanent clinics, with peripheral satellite clinics, were opened at Sharem A-Sheik and at the nearby St. Catherine's monastery. They were organized in a similar manner to the clinic at Abu-Rudeis, providing near optimal coverage for the Bedouin population and the booming tourist trade. The deployment of medical centers was completed with the paving of the road from Eilat to Sharem A-Sheik and the opening of a permanent clinic at Dahab.

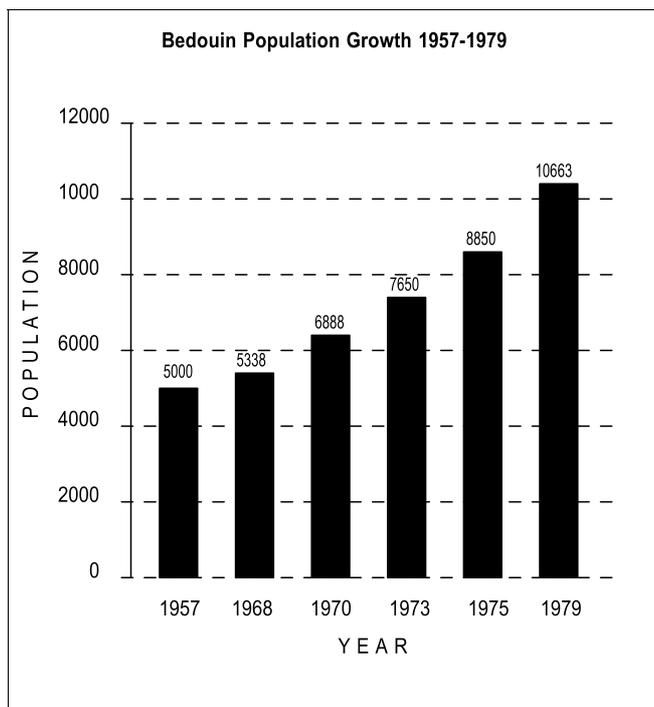
In 1978 the St. Catherine medical center was transformed into a community hospital. A new, spacious building was opened with an operating theater, an X-ray room and a laboratory. The center primarily served the Bedouin population, but it also provided equal access and services to the Israeli military staff and the ever-growing tourist trade. The center was staffed by family physicians, who were backed up by military reserve physicians on active duty and visiting consultants who came, for the most part, from the Sheba Medical Center near Tel Aviv. This medical center, Israel's largest, took healthcare services for the population of Southern Sinai population under its auspices, at the request of the late Moshe Dayan, then Minister of Defense. The Sheba Medical Center also provided tertiary care for the Bedouin of southern Sinai, as did two other Israeli hospitals, Assaf Harofeh in Zerifin and Yoseftal in Eilat. Evacuation to the first two was by air, via Ben-Gurion Airport near Tel Aviv. Evacuation to the hospital in Eilat entailed a 3 hour trip by road.

Sinai Bedouin patients were assisted during their hospitalization in Israel by a special liaison officer who looked after all their needs until they were discharged from the hospital and returned home. All health services, including hospitalization in Israel, were provided to the Bedouin population free of charge and were covered by the Ministry of Defense. Eye glasses, hearing aids, prostheses, etc., were also supplied without payment.

### **Preventive medicine**

From the outset, the health services included preventive as well as curative medicine. The first project involved screening of the population for tuberculosis using a mobile X-ray machine. A vaccination program, similar to that conducted in Israel, was implemented among schoolchildren. This setting was chosen since it was the only way to reach the younger population, but the success rate was still relatively low. All children entering school underwent an eye examination. The school curriculum included basic personal hygiene such as washing hands and brushing teeth, taught by registered nurses.

Public health services were emphasized, particularly the quality of the water supply. New uncontaminated wells were dug and the water supply was chlorinated at regular intervals. As malaria was found to be endemic, measures were taken to eradicate the *Anopheles* mosquito. Rabies was also very prevalent due to the lack of vaccination of domestic animals and led to considerable morbidity.



### Outcome

In the absence of basic epidemiologic tools such as birth and death records, it is very difficult to evaluate the contribution of the medical services to the welfare of the population. However, the population census can serve as a crude but objective parameter. From the first census conducted by Israeli authorities in 1968 through the last one in 1979, there was a persistent growth. Over the 10 years of Israeli administration the Bedouin population doubled. In comparison, under Egypt's administration in the 10 year period prior to the Six Day War no growth was recorded at all [Figure]. Just as important was the change of attitude seen in the local population, from total distrust to full cooperation including a growing demand for contraceptive services.

### Follow-up

In 1982, when the peace treaty was signed between Egypt and Israel, Israel left in place an efficient and economic healthcare system with all the medical equipment intact and a month's inventory of disposable supplies.

Two years later, Dr. McDermott, from the Multinational Force and Observers stationed in Sinai, reported on the state of the healthcare system [3]. Although the organizational framework persisted, the spirit of enthusiasm and the willingness of the authorities to provide the best possible healthcare had dissipated. Young physicians, recent graduates of medical schools, all served on a compulsory basis. The service was underfunded with a chronic shortage of essential medicines. The overcrowded and understaffed 120-bed hospital in El-Arish served as the tertiary care facility.

After a visit in 1993, one of the nurses who had served previously in the area reported that conditions had not improved. The medical

services were provided on a fee-for-service basis, leading to under-utilization of services.

### Conclusions

The principles that served the successful establishment and maintenance of the healthcare services for the Bedouins of southern Sinai during Israeli administrative rule can be implemented in any underdeveloped area. These principles include:

- Preservation and respect for local traditional medicine.
- Establishment of a few permanent community medical centers, staffed by well-trained, enthusiastic volunteer personnel.
- The community medical centers should be equipped with basic diagnostic capabilities, facilities for hospitalization, provision of dental care and the dispensation of basic medications.
- Establishment of a network of satellite clinics situated at the periphery of the permanent community centers, staffed by local trained nurse-aids and visited at fixed, regular intervals by a medical team consisting of a family practitioner, a nurse, a translator, and specialist consultants as required.
- Support for this healthcare system from a large tertiary medical center, which serves as a source of manpower and visiting consultants, as well as a hospital for patients with complicated medical problems requiring more sophisticated care than is available in the local system.
- A holistic approach to medical care including provision of preventive medicine, public healthcare and health education.

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