



The Tel Aviv Sourasky Medical Center

Success story

Answers for life.

SIEMENS

i.s.h.med as one of the factors that the “tiger” is running



“Whatever I expected – we got it.”
Prof. Gabriel Barbash,
Director General of Tel Aviv
Sourasky Medical Center

The challenge

The Tel Aviv Sourasky Medical Center, owned by Israel’s Ministry of Health, serves the 360,000 inhabitants of the Greater Tel Aviv metropolitan area, as well as more than a million people who enter the city every day. It is one of Israel’s three largest hospitals.

Spread over 150,000 square meters, the Tel Aviv Sourasky Medical Center incorporates four hospitals: the General Hospital, Ida Sourasky Rehabilitation Center, Lis Maternity Hospital, and Dana Children’s Hospital. The medical center includes 1,300 acute-care hospital beds, 60 departments and institutes, and 150 outpatient clinics. In 2007, the number of hospital admissions was 94,000, and the number of outpatient clinic visits was 1,112,000.

In the early 1990s, the Sourasky Medical Center was a veritable “Tower of Babel” of various anachronistic medical and clinical systems that did not speak with each other. There was an urgent need for a platform that could integrate the handling and creation of medical and

administrative information. The medical center required a system to support its growing activity needs and to provide the operational managers and medical staff with comprehensive and up-to-date information. The executive level needed the aggregate of medical and administrative information regarding patients and medical care to manage the sizable number of physicians. These critical information requirements were accompanied by growing competition among hospitals and the need to become ever more efficient.

The emergence of the NAMER project

In 1993, Professor Gabriel (Gabi) Barbash was appointed Director General of the Tel Aviv Sourasky Medical Center, after serving six years as Chief Information Officer of Sheba Medical Center, another Israeli government-owned hospital. “Sheba Medical Center was a kind of developed island in terms of information technology,” explains Professor Barbash. “When I joined the Sourasky Medical Center I was immediately confronted with a lack of information for running the medical

center. I found that the IT that supported Sourasky’s activity, as well as nine other governmental hospitals, was based on IT that was programmed 34 years ago.”

Fortunately, Professor Barbash was successful in persuading his colleagues and the Ministry of Health that the hospitals needed a new information management system. “With the help of the Seker Consulting Company we created a blueprint and prepared for the shaping of a new information system to support the day-to-day running of the hospital,” details Professor Barbash.

In 1996, Professor Barbash was appointed Director General of the Ministry of Health. He persuaded the Ministry of Finance to allocate the financial resources, together with the Ministry of Health and the governmental hospitals, to establish the information system.

“Getting 11 hospitals to sign up to the same vision was one of the main challenges,” notes Professor Barbash. “From the outset we stated that whatever system was implemented should meet the



highest requirements of the more complex facilities like ours, and that a hospital requiring less complexity be able to use the system and utilize only part of what it offers. We decided – and this is a very important point – that we were going to develop one system for all of the hospitals, and the hospitals reached an agreement on what was going to be developed. That’s why we were so successful.”

The solution

In 1999, Israel’s government hospital computerization project was initiated, with the aim of computerizing the administrative and operational systems of the 11 government hospitals and to create a comprehensive unified IT system. Following a public tender, the software selected was SAP’s hospital information system (SAP IS-H), provided by Ness Technologies, SAP’s representative in Israel at the time. In addition to SAP’s system, the Ministry

of Health decided to implement complementing modules of Siemens’ i.s.h.med hospital information system (distributed in Israel by Ness Technologies) in the government hospitals. HP was selected as prime contractor and implementer. Today, i.s.h.med serves 12,000 users, the largest number of i.s.h.med users in hospitals in a single country.

“We had two possibilities,” explains Professor Barbash, who returned in 1999 to the Sourasky Medical Center as Director General. “The first was to acquire one of the tailored systems that were offered at that time for hospitals, and to sign up to one system in the knowledge that within a few years the supplier may vanish or sell out to someone else, as we see happen from time to time. The second possibility was to adopt an integrated Patient Administration and Clinical Information System, which was already installed in many other facilities, supported by a large international company and that includes improvements done by hospitals around the world. We chose SAP for Healthcare and i.s.h.med.”

“We were looking for a system that can talk to the SAP system, so i.s.h.med was a clear choice,” reveals Professor Barbash. “There was no better choice. If you want the system to talk, correspond, and exchange data – which is a must where a hospital is concerned – you need to choose a medical system that is closely related, actually integrated with the SAP system.”

i.s.h.med provides additional benefits that include the system’s extensive range of functions and its capability to be used hospital-wide.

The hospital computerization project was called NAMER – an acronym of the Hebrew words for administration of medical centers. In Hebrew, NAMER is a tiger.

In June 2003, the NAMER project went live at the Tel Aviv Sourasky Medical Center.



The implementation

In 2003, the Tel Aviv Sourasky Medical Center installed the SAP for Healthcare infrastructure, encompassing administrative and ADT (admission, discharge, transfer) processes for billing, scheduling, patient management, and so on. In 2004, the Sourasky Medical Center proceeded with the implementation of i.s.h.med. This included the i.s.h.med basis module and the radiology module, followed by the i.s.h.med surgery module.

The i.s.h.med basis module

The i.s.h.med basis module has been deployed in all hospital wards. It comprises the definition of basic data that enables the fully integrated management between different hospital units. This forms the basis for an effective order management, findings management, medical documentation using PMD (parameterizable medical documentation) functionality, and others. As a result, the i.s.h.med basis module enables efficient management of the above-mentioned processes, and provides the infrastructure for additional i.s.h.med modules.

Documenting operations and radiology findings

Based on i.s.h.med, the Sourasky Medical Center established a reporting room with many PC workstations inside the operating theater. Today, in between operations, physicians rush to that room and rapidly perform their required tasks.

According to Dr. Esther Saiag, Director of Sourasky's Medical Systems Operation and Information and Computer Systems, physicians initially asked to bring in secretarial staff. "We said no – this is your responsibility," states Dr. Saiag. "The only exception here was the radiology institute, where we realized that describing the findings of each test is very tedious, time-consuming work, and it might be easier and make better business sense to have someone help the radiologist type the information into the system."

The Sourasky Medical Center found a creative solution and installed a dictaphone system. The radiologist records the findings directly in the patient's medical record in the i.s.h.med system. When he finishes, a digital audio file is created, connected to the medical record. The audio file is available and easily accessible to the various departments. Later, the secretary types it into i.s.h.med.

Expanding implementation to angiography and cardiology

"Today we are implementing additional i.s.h.med modules," explains Dr. Saiag. "The generic tools, like parameterized documents, make i.s.h.med highly adaptable to our individual requirements at the hospital."

"Now, we are going to use the combination of the two modules surgery and radiology in angiography, where the needs are similar to those of the OR, but also very similar to those addressed by the radiology module. We take everything that is available and adapt it to our needs."

"I can confirm that the implementation process was highly efficient," says Dr. Saiag. "The implementation of SAP's ATD took the form of a big bang, as did the implementation of the i.s.h.med basis module in all hospital wards. The hospital was in direct need of a systemized computation of the ATD procedures. We prepared the staff very well, and this also explains why the project went so smoothly."

According to Dr. Saiag, the process of implementing the NAMER project in Sourasky propelled the hospital to a much higher level with regard to implementation methodology and execution of the hospital management's policy. This advancement was conducted on two parallel axes:

The first axis included the IT department and staff, which gained much experience from the implementation of i.s.h.med as concerns methodology and following rules when implementing systems in the hospital. The second axis encompassed the hospital processes. These were significantly improved and were made more efficient thanks to the NAMER project. It lowered the incidence of errors, enabled the staff to know more about the patients, and decreased unnecessary, redundant tests for patients.

Implementation of additional i.s.h.med modules continues as an ongoing project. Due to the successful experience working with i.s.h.med, the Sourasky Medical Center has decided (as part of an overall Ministry of Health decision) to acquire all other i.s.h.med modules.

Currently, the Sourasky Medical Center is implementing seamless interoperability between SAP/i.s.h.med and the laboratory system as well as pursuing the i.s.h.med implementations in various units, such as cardiology and angiography.

In 2007, 95% of Sourasky Medical Center's departments implemented i.s.h.med's medical and nursing admission and discharge documentation functionality, documenting two major hospitalization phases in a highly structured and methodological manner. This is the basic functionality for the future implementation of the physicians' and nurses' follow-up and progress notes.



"The benefits of i.s.h.med are truly impressive!"
Esther Saiag, Deputy Director
Information & Operation



Preparation of the medical center staff

"Proper preparation of the staff is the key to success," comments Dr. Saiag. "I believe that you have to put your energy into two tasks – prepare people, and then support them and follow what they are doing with the system you have provided them."

In the first phase, the Sourasky Medical Center's management brought together representatives from each department, listened to their needs, and advised them on the correct way to build and prepare the necessary tables, procedures, and diagnosis codes. Then, management representatives visited the hospital's staff during morning rounds, explaining the necessity of the changeover and promising support. In addition, the staff was trained on the job.

Special on-call employees were designated for round-the-clock support of hospital staff. Concurrently, the medical center's management began monitoring how the staff used the system, a process that continues today. If, for example, a physician for some reason forgets to document a surgical procedure, they are reminded to do so.

"We have two main goals: to have all of the data, and to have the data be of excellent quality," says Dr. Saiag.

"I obtained a unified overview of the hospital in all respects."
Ronni Gamzu, Deputy Director for Health Economics



Mobile ward round with i.s.h.med in the Tel Aviv Sourasky Medical Center.

The results

Culture change

"Naturally, physicians like interaction and don't want computers and machines between them and the patients," explains Dr. Ronni Gamzu, Director of the General Hospital at the Sourasky Medical Center. "However, after a while, the physicians see the short-term benefits – everything is clear for the senior physician. Then they see another benefit for the long term – they can do research. At that point, they're hooked. They want more. So there is a change in culture."

Strengthening financial administration

Dr. Gamzu emphasizes that the search for an IT system had to be related to a solution that would strengthen the Sourasky Medical Center in the financial administration of the huge organization. "We looked for a system that would effectively combine, on the same platform, all of the organization's operations with all of its financial activities," explains Dr. Gamzu. i.s.h.med together with SAP for Healthcare fulfills these requirements.



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The benefits

Availability of data

“Whatever I expected – we got it,” states Professor Barbash. “The amount of data that is today critical to our management, to our competitive environment, is really a gift. The efforts are paid back in the benefits that we get from the system. The investment becomes worthwhile only if you combine it – and that’s what we plan – with the additional modalities of SAP, like logistics, finance, human resources, and – no less importantly – clinical aspects of the electronic medical files, like those of Siemens.”

“Thanks to the NAMER project, clinical and administrative data that is now available, along with information regarding reimbursement payments and various activities of the hospitals, is enormously important for us in the highly competitive environment in which we live today,” states Professor Barbash.

Seamless interoperability between i.s.h.med and clinical information systems

“The seamless interoperability between i.s.h.med and other clinical information systems in the hospital, which is a very challenging process, is highly successful,” confirms Dr. Saiag. “In various locations in the hospital, i.s.h.med serves as the backbone, while at the same time receiving information from other medical information systems. For me, the best, and a highly popular, seamless interoperability involves the Radiology Information System (RIS) and Picture Archiving and Communication System (PACS), which Siemens has carried out in many other locations around the world.”

Talking through the system

“We, the physicians and caregivers, talk to each other through the i.s.h.med system,” says Dr. Saiag. “Actually the i.s.h.med system acts as a communication system and we speak to each other about our patients, preventing mistakes. We perform our routine daily work in a much more efficient and smart way. The economic aspect is also very important, since now we can save money that previously was wasted because of a lack of knowledge, mistakes, and so on. The benefits of i.s.h.med are truly impressive!”

Greater efficiency in operating rooms

“We very much appreciate i.s.h.med’s surgery and radiology modules,” states Professor Barbash. “I think the system has greatly improved the data that comes from the operating rooms. One particular benefit is that since implementing the surgery system we have utility reports based on departments, and we run the system much more efficiently. We know who is using it, what the slack time is, who is responsible for the slack time, and we can manage this very expensive resource much more efficiently than we were able to do before – and that is mainly due to the i.s.h.med surgery module.”

“Once the surgery module went live, we got a clearer picture: when is the room occupied, what is done in a specific operating room, and so on – and all this appears on one screen,” says Dr. Gamzu. “Now we are putting the information onto a huge centrally located screen in the management section of the operating room, so everybody sees what’s going on. You can see the wait time between operations. With limited time in the OR, running the facility in a more efficient way is a must for the hospital manager. i.s.h.med helps leverage your management skills in such a huge complex.” The Tel Aviv Sourasky Medical Center runs 24 operating rooms, including 14 general operating rooms, seven ambulatory operating rooms, and three general gynecological and obstetric operating rooms.



Measuring quality and improving service

Dr. Gamzu sees two long-term benefits to implementing i.s.h.med. The first one is quality. "I believe it's the first time that we can measure quality of care through the system," says Dr. Gamzu. "We can measure quality in relation to its cost, and then perform cost allocation to maximize quality. The second benefit concerns service. The Tel Aviv Sourasky Medical Center has increasingly made the quality of service to our patients a top priority. This requires an excellent, solid IT system that, when combined with a CRM system, constitutes a full-scale system that focuses on the patient."

Overcoming the financial deficit

Since the NAMER project was implemented in 2003, the Sourasky Medical Center has succeeded in overcoming its financial deficit. "The key to this success was the possibility to have the whole picture of the hospital units on one screen," comments Dr. Gamzu. "I couldn't have achieved success here without a system that allowed me to see at a mouse-click the revenue situation in the various departments. Once I had that information using SAP for Healthcare and the i.s.h.med modules, I had an entirely transparent view of each unit. I obtained a unified overview of the hospital in all respects – financial, operations, imaging, laboratory, and others – and could see what was going on in each unit."



Tel Aviv-Jaffa is the second-largest city in Israel. It is the largest metropolitan area and the commercial center of the country.

Current and future developments

As part of a development partnership with Siemens, Sourasky's team, within a joint team staffed by the Ministry of Health and the other hospitals, is involved in developing and shaping two new modules with key functionalities in the area of charting and ward support. The primary focus is on the following topics:

1. Enhanced support of clinical processes

- Documentation workstation – a workplace which integrates all functionalities of i.s.h.med, including a proper task management function.
- The progress note – computerizing what goes on during patient treatment, issuing ward round instructions, ordering medications, and other communication from the physician to the nurse and vice versa.
- Clinical overview – key information about the patient's treatment at a glance.

2. Charting

- Another view on the electronic patient record, timeline-based and with a graphical interface.

Thus, the Tel Aviv Sourasky Medical Center is currently cooperating with Siemens in developing the next generation of the electronic patient record system. Other world-renowned hospitals are also participating in this program. "There is growing cooperation between the Israeli group and the Siemens group in Germany, and we are extremely proud and pleased to support the first customer shipment process of this important system," says Dr. Saiag.

The new applications will focus on the various functionalities required for managing inpatient care processes. They will be deployed at Sourasky Medical Center and in other hospitals in 2010.

"We are still working on additional modules of i.s.h.med," says Professor Barbash. "When we deploy additional i.s.h.med modules here, this will increase the availability of clinical data enormously. We will be able to analyze data from both the financial and quality perspectives. We will then have a considerable volume of clinical data at our fingertips to allow us to analyze and assess quality. The major benefit is that availability, quality assessment, and efficiency assessment of the hospital are all going to be much, much easier."

"Israelis are very experienced with medical informatics and we can contribute a lot to the medical informatics community at large," states Dr. Saiag. "We are proud to cooperate with Siemens in shaping the next-generation software package, addressing one of the most sensitive and challenging parts of medical informatics – the computerization of the ongoing mutual work of physicians and nurses."

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