UNIVERSITI PUTRA MALAYSIA

SELAYANG HOSPITAL PROJECT

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GSM 1999 24

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Project Paper Submitted Partial

Fulfillment of the Requirement for the

Degree of Master of Business Administration

Malaysia Graduate School of Management

January 1999

Pengesahan Keaslian Lapuran dengan ini

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No : Matrik ; 53511

mengatakan bahawa kertas project /

kajian kes untuk kursus,

Sarjana Pentadbiran Perdagangan   PSN 503

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Tanda tangan ;

Tarikh :   30hb Jan 1999

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A CASE STUDY OF

THE SELAYANG HOSPITAL PROJECT   (SHP)

Introduction

The planning of Selayang Hospital started in 1996, a proposed 960-bedded hospital located on a 15.8 hectare site along the Kepong Selayang road, within the Majlis Perbandaran of Selayang of Gombak District in the state of Selangor. Selayang Hospital (SH) is a government - owned ultra - modern hospital in the country. It has sophistication of a luxury private medical center with state - of - the -art technology. It is one of the hospitals built under the Seventh Malaysia Plan (7th MP) to reduce congestion at the Kuala Lumpur Hospital (KLH).

Health Minister Dato' Chua Jui Meng, (Viswanathan, 1998), said that the reasons for building this 960-bedded hospital is because the Ministry of Health (MOH) had for a longtime realized that the KLH was too much overcrowded with patients. Physically the KLH was already bursting to its limits with staff overworked, quality of patient care compromised and as a result patient's dissatisfaction and complaints.

Proper documentation on archives was not available with many patients' records mislaid or missing. This had resulted on many lost cases for the KLH in legal matters.

It was with the above background that the MOH came up with SHP, with its modern IT setting.

Physical Layout

The Selayang Hospital is built on a small hill with landscape layout. The two blocks, each thirteen story high, cater to the in-patient ward and clinical wards. There are thirty-one wards which are made of twenty one-second and third class wards, five first class ward and five intensive wards. The second and third class wards (the general ward) each consists of twenty-

eight beds of which 2nd class (8 Beds), 3rd Class (18 beds) and isolation (2 beds). There are twenty-eight beds in all the first class wards.

Facilities

The SHP provides the following facilities. Apart from staff quarters which include doctors and nurses quarters, condo accommodation for consultants and specialists, the SHP also has a well – equipped sports complex which comprises a gymnasium, tennis courts and badminton courts and table tennis. A modern cafeteria caters to the needs of all hospital staff.

All buildings are connected with covered corridors. This also includes access to public transport on the other side of the highway.

Scope of clinical services in Selayang Hospital

It has been planned that tertiary services like Oncology, Neurology and Pediatric that are available at the KLH will not be provided by Selayang Hospital. The tertiary services at Selayang Hospital include Gastroenterology, Hepatobiliary, Cardiology, Nephrology, Urology, Hand and Micro and Surgery. Also included are liver and kidney transplant (refer appendix 1 for definition of terms). The others come under secondary services, outpatient services, supportive services are provided through the clinical and non-clinical departments.

The main business of Selayang hospital is the provision of a specific range of tertiary referral services to customers across the nation and elsewhere, and a broader range of clinical services to customers who rely on Selayang Hospital as their regional or local hospitals. Linked to these major activities is essential contribution to teaching and research.

In addition to this referral role Selayang hospital also provides high quality specialist services in a large number of other fields.

Over time Selayang Hospital expect the profile of the main business activities to be modified in line with changing customers need and service developments elsewhere. Selayang Hospital will do this to provide the best value they can from the resources at their disposal and to provide their customers with a service that is matched to their needs.

Vision

In the planning and implementation of Selayang Hospital, the Ministry of Health (MOH) has taken cognizance of the objective of Vision 2020 where Malaysia shall reach the status of a developed country, and the MOH vision.

In line with the Country's Vision of 2020, the country's Vision for Health was formulated and proposed a national health policy. This will provide the direction and means to integrate all-important players to work towards achieving optimum population health and improved quality of life for Malaysians in the 21st century.

Dr Shahidah, (1996) said The Ministry of Health would begin the process reorienting its role in preparation for the changes, which is expected to take place in the years approaching 2020. Principally it will relate to enhancing its role in all matters pertaining to health: to ensure its social commitment and responsibility, equitable access by the population to acceptable health services of good quality and to promote and monitor health provider accountability.[1]

The mission of Selayang Hospital is formulated in line with the Ministry of Health Vision, (Refer appendix 2 for MOH Mission). The Mission of MOH is to build partnerships for health to facilitate and support the people: -

- Attain fully their potential in health.

- Motivate them to appreciate health as a valuable asset

- Take positive action to improve further and sustain their health status to enjoy a better quality of life.

The Selayang Hospital Mission is to be a role model for Malaysian hospitals, using appropriate technology which is innovative, efficient and cost effective (delivered in a customer driven environment), friendly, caring, compassionate and humanistic. This will be achieved through teamwork in partnership with the community to provide quality care to the satisfaction of our customers (refer appendix 3 for Hospital Selayang Mission, Vision).

Motto

Selayang hospital recognizes that customers want quality and therefore strive for the highest standards in service, value and innovation.

The pursuit of excellence extends to everything Selayang Hospital does for its customer and the commitment to quality will not be compromised. The staff of Selayang hospital will be inculcated with the core values of quality, professionalism, caring, teamwork, and process excellence (ref. Appendix 4 for definition).

Organizational Structure

The Selayang Hospital organization structure is as per Appendix 5 attached. Customers are Selayang Hospital top priority so the structure is designed to maximize customers' satisfaction with emphasis on staff efficiency. The Board of Directors (BOD) with the assistance of Total Hospital Information System and a Medical Advisory Board committee oversees the hospital overall operation. There are 5 divisions in the hospital administration,

total medical and non-medical staff force stands at 1090. The BOD is accountable to the State Health Directors.

Applications of Information Technology (IT)

Dr Shahidah, (1996) said of importance too is the introduction of new technology into the health field. The progress made in medical technology for instance is mind bogging not only in scope but also especially so in the speed of its development. In order to keep abreast of this, the Ministry is establishing a better capability for technology assessment to ensure the adoption of appropriate technology for its services. The proliferation of new medical technology also calls for the need to plan for legislative support to carry out registration of medical devices in some developed countries.

Of particular interest to the Ministry of Health in the 7th MP is the Medical applications of Information Technology (IT). And of prime importance to the Health Ministry is need for on-line data and information for decision making in relation to how well the organization is performing and to what extent its services are meeting population needs. The strengthening of its Health Management Information System with computer support and on line access by decision - makers is planned for in the 7MP.

In the clinical applications of IT priority will be given to attain the concept of the patient accessing the care needed at one point of contact or in today's jargon "seamless care" or health facilities without boundaries". Rather than having the patient referred to various levels of care, it is possible for the patient to receive the care needed in whichever hospital he/she accesses. The introduction of telemedicine and conferencing for example, will meet this need. Various features of IT application including "paperless" administration are designed for and will be implemented in the new specialist hospitals e.g. Selayang Hospital in Selangor and many others, said Dr Shadidah.

Total Hospital Information System (THIS)

Hospital Selayang has been designed, constructed and equipped for a Total Hospital Information System (THIS) environment with the ultimate aim of a paperless and filmless hospital operation. Extensive utilization of information technology will be a core element in the daily running of Selayang Hospital, which is being prepared as the first medical center in Malaysia to operate in a paperless environment.

The RM 590 million Selayang Hospital will create international history as the world's first fully integrated paperless and filmless hospital (Dato' Chua, 1998). It is the first hospital in Malaysia to operate with THIS covering all aspects of its operation. The RM 60 million IT system permeates all the operations of the hospital, which are categorized into three areas-images, clinical, administration and financial.

Explaining all the type about the phrases "paperless and filmless", Team Vantage was awarded the contract by Radicare, the general contractor for the turnkey project. IT manager Allen said "Starting from the time when the patient registers into the hospital until the time he leaves and returns for the occasional out-patient check-ups, every thing is done electronically." The RM 60 million IT system permeates all the operations of the hospital, which are categorized into three areas, images, clinical and administration and financial (US department of commerce 1998).

Images (filmless environment)

In the images department the picture archiving and communications system has applications for sending, receiving, querying, and retrieving images for viewing, diagnosing, reporting and storing purposes. X-ray, radiography, magnetic resonance imaging, topography and

ultrasound images can be transmitted electronically from one department to another within the hospital and this provides for the filmless environment.

Health Minister Dato' Chua said patient imaging was also available under the system. "With this, images of any parts of the human body can be stored electronically. Doctors can rotate the image or enlarge it to search for fractures, for instance."

Electronic Medical Record (EMR)

The Selayang Hospital is unique in the sense that the integrated solution would be centered on an electronic medical record, which captures and stores all relevant clinical data for each patient in electronic form.

In the clinical area, the hospital information system is used for patient management, order management-scheduling, data storage and system operation. All patient and medical record information is stored in the Electronic Medical Record Data (EMR) and this creates a paperless environment.

Administration

In the administration and finance department, application for human resource payroll, material requirements, inventory control and accounting systems are all recorded on computers, creating an almost paperless environment in these departments. Some government documentation however will still have to be in printed form.

Advantages of THIS

"The advantages of this type of hospital has over others are a significant reduction in storage and filing costs, the cost of having people move, documents and other information from one place to another and the complexities and confusion related to this. The cost of replication of document and a higher quality of care provided resulting from the speedier and more accurate services which will be provided" said Allen, (Shankar, 1998).

The difference between the Selayang Hospital and some dozen other similar hospitals is that all the three systems areas are fully integrated. This allows for an uninterrupted flow of information and images across all three systems areas, whereas in other hospitals a particular department may only be partly or, not at all integrated within the other areas. "That's why you see that some doctors have about three different screens behind their desks. It is cumbersome and time wasting " said Allen.

Rm 60 Million System for Hospital

Team Vantage was awarded the contract in February this year by Redicare (M) Sdn. Bhd. The general contractor for the turnkey implementation of the 960 - bed Selayang Hospital project manager, Team Vantage is responsible for the design, procurement, installation, testing, commissioning training of the medical equipment as well as software and hardware. They also have to license paperless financials and Human Resource Management Systems (HRMS), as par of this for Selayang hospital. Other than a complete set of human resource functionality, the installation will also include financial modules of accounts receivables and billing.

The peoplesoft implementation involves several stages and is being undertaken in parallel by two teams; one working on the financials while the other on the HRMS. All activities are being conducted at Vision center. The system requirement studies had been conducted with Cerner Corporation's clinical system, which deals with medical records. They are now building prototype system, after which they shall move into the customization and testing stage that will take about two months to complete. The peoplesoft system is scheduled to go live by March or April next year. The system and Team Vantage signed the agreement in Kuala Lumpur on October 16, 1997.

Training

Dato' Chua said about 2,000 Health Ministry staff would be trained to use THIS. Currently 120 are being trained. Initially, there was resistance from the staff because they had to completely move away from the usual operating system of the hospital and adapt it to the running of a paperless and filmless hospital environment. The THIS was a total change from the conventional system. "However they now realize its advantages and are committed

to it. "The staff, will eventually be the key users of the system at the Selayang Hospital," said Dato' Chua. All new staff reporting for duties must first go through IT training (Chok ,1998).To prepare for this the SHP at present was training its key users, who would train the end users.

An initial group of two doctors and eight nurses were trained to be Application Analysts (AA). The main functions of the AA were to build all forms, scheduling, registration and other documentation.

Selayang Hospital dry - run in January

The Selayang Hospital the Government's first ultra modern, paperless hospital with a sophisticated Total Information System will begin trial runs from January. Health Minister Dato' Chua said the Rm 530 Million hospitals would receive its first patient next June and will begin operations in phases.

The THIS, Dato' Chua said will be the first of its kind in the world and it was an "entirely Malaysian system, customized and adapted for our needs". The trial runs are to ensure that the system runs smoothly when the hospital is fully operational. Hospital staff will be able to familiarize themselves with the system via simulations. "This is important as human lives are involved. The staff must know what to do when there is, for instance, a power failure. The project is being carried out by Radicare (M) Sdn. Bhd. and the Health Ministry will manage it. Dato' Chua said among others, the information system would enable medical health records of a patient "from womb to tomb" to be kept electronically. These medical records can be accessed via computers easily anywhere in Malaysia just by keying in the relevant codes. Patients can also make appointments with doctors easily. Now several telephone calls have to be made first before an appointment can be fixed. With THIS, all the information regarding each doctor's work schedule is in the computer. All the receptionist needs to do is look at the computer screen for the relevant details to fix an appointment for a patient. Dato' Chua said Selayang hospital would be used as a model for other government hospitals. Eventually, we hope to make all government hospitals paperless" (Chok, 1998).

Formation of Selayang Hospital Core Team and IT Committee

On 22nd July 1996 Hospital Selayang Project Chairman, Tan Sri Abu Bakar Suleiman, Director General of Health (DGH) called for a meeting during which core team and IT committee were appointed.

The chairman welcomed all participants and thanked them for accepting the appointment as the Core Team & IT Committee members to be involved directly in the Selayang Project to make it a success. He said "In order to meet the objective of the state of the art facility, a highly qualified effective organization, operation and management has to be ensured for the success of this hospital. A Core Team and I.T Committee was appointed in 22nd July 1996 and they are to be involved directly in the Selayang Project to make it a success. The Core team need to work on the following strategies; " said Tan Sri Abu Bakar.

- To adapt to changes in their work in process in line with changes in technological advancement. The core team members were to act as change agents for both the staff and clients. For a start they should change from the conventional work process to the new IT environment. Higher management will not be provided with clerks or secretaries, instead they will be provided with a computer each and they are expected to do their own typing or data entry.

- To adopt a new attitude, that is better recognition of customers' needs. However even though the introduction of sophisticated IT they must not forget not to lose the human touch despite the technologies that come with the IT introduced at the SHP. The organization chart had been formulated with emphasis on serving the patients. With investment in expensive IT and better quality staff there should be no difficulty to offer

better quality services. The Tan Sri further reminded all present that SHP must be made a model hospital.

- To identify every function and develop detailed work processes suitable for Selayang Hospital. Work processes from oversea hospitals can be used as reference but need to be customized to suit local needs.

- To develop whole hospital policies and policies for every department.

- To form working groups / teams which will work together to come up with the desirable work process. They will be given the authority and autonomy to select and transfer staff from HKL to the SHP. They are to come up with individual planning and organizing their department, which includes suggestion for the purchasing of equipment, human resource and the operation of the unit.

- The working group need to develop policies e.g. admission and discharge policies, referral policies etc. These operational policies need to be spelt out.

The Director General of Health made clear to the Core Team that they will be given the opportunity to work in Selayang Hospital. The core team has to come up with the Mission statement for Selayang Hospital in line with the MOH Mission Statement. The workflow and process should be consistent with the Mission.

(Selayang Hospital General Operational Policy).

Some core team members brought to Tan Sri attention that if they were not working full time at the SHP, they could not do a good job as their attention was divided between SHP and KLH. To expect them to carry out the required strategies may be asking too much, one of them even suggested for a permanent transfer to the SHP. To this Tan Sri said he would transfer them on a permanent basis when the SHP progressed to a certain stage.

One doctor also asked the DGH at the meeting about promotional aspect of working at SHP. To this the DGH said he would write in to the MOH for the various posts to be created. He planned to put forward a working paper to the MOH for added posts like head of the unit, consultant, nursing officers and managers.

He also mentioned that all the core team members would have a chance of visiting other IT hospitals overseas to learn about other's experience.

Human Resource Planning

In the second meeting with the DGH he informed the core team that, the planning of the human resource requirement was due to be completed. In view of the cost constraint all medical personnel were to be transferred from the government hospitals. The General hospital would contribute the most number because of its size, distance and the expected decrease in workload when Selayang Hospital was fully in operation. The balance will be transferred from either other states' government hospitals or district hospitals. Since Selayang would be the model hospital of the country, superior quality human resource was required. The criteria for selection of staff transfer are experience and outstanding performance.

Early pro-active actions had been taken in the planning of human resource in view of the tight medical personnel supply in the market. The Human Resource Manager with the assistance of the Board of Directors had obtained consent from MOH for the transfers. Letters of transfer had been sent to the respective medical personnel more than six months ago in order to give the personnel involved sufficient time for the transfer. All medical personnel involved were required to reply by the first quarter of 1998, as the training courses would be starting from the second quarter of the year onwards.

Related Issues

Staff transfer

In April 1998 the HKL Director received a letter from the Ministry of Health instructing him to release selected doctors and staff to Selayang Hospital Project.

A meeting was immediately convened whereby various issues were discussed. Present in the meeting were the Nursing Division Matron, Consultants and Specialists, Nurse Managers, apart from the various Heads of Department.

At the meeting the Director was visibly upset as he said that he was not involved in the SHP neither was he briefed on the progress of the SHP. He just received instructions to release staff to the SHP and HKL was already understaffed and the taking away of better-trained and experienced personnel would affect the hospital operation negatively. In some cases the prospect of a complete department being transferred out would spell disaster and he asked the Head of Hand and Microsurgery what would happen to his department if the whole group moved over to SHP.

The head of Hand and Micro department replied that this was beyond his control as Selayang Hospital Project was a Priority Government Project and he was merely following instructions from the Ministry. The Core team was delegated by the DGH with the authority and autonomy to select and transfer staff to the SHP. The Director then said that he was not informed about this new role of the core team and he would seek clarification in the next meeting with the DGH .

To this Dr. Pathma replied that this vacuum created by the staff transfer was only temporary. Once Selayang Hospital was fully operational it would help to decongest HKL.Hence it would be beneficial if the staff concerned were released without further delays.

The director replied that he would not release any staff till he sought further clarifications from the DGH. Even though it was only a transitional problem but he was not happy about the whole issue, he then commented that what would happen to HKL during this transitional period. He stressed that the Medical profession was dealing with matters related to life and deaths and there should be no compromise.

Complaints

The Matron supported the Director in voicing her concern that the nursing staff was already overworked and the nursing care was in a state of compromise. She quoted on the staff to patient ratio of 1 to 4 in the intensive care unit where the recommended figure should be one to one. She further commented that all her efficient staff was selected for transfer. She expressed the prospect of running her wards with junior and less experienced nurses.

The Director then mentioned that just yesterday two heads of departments came to see him regarding some complaints from the public regarding some dissatisfaction of patient care. One of the patients in the outpatient complaints that he had to wait four hours before he got to see a doctor. A thorough investigation showed that this was mainly due to the acute shortage of doctors. Since the doctor had to see about two hundred out patients a day, that comes to three minute attending time to one particular patient. On top of that he must do his ward round and also attend to emergencies before he could start to run his clinic. At the end of the day the root of the problem was due to acute shortage and overworked doctors.

The other complains was regarding a patient who had to wait for one hour before a nurse could attend to him for a simple glass of water.

The matron answered that the nurse in that ward on duty had to attend to twenty patients, since one of her colleague was on emergency leave she was left with only two attendants to work with.

The Director said that the patients concerned have written in officially to the Ministry and they were looking into the matter seriously. He then further commented that he just did not know what was going to happen in Hospital Kuala Lumpur when he had to deploy more staff to Hospital Selayang. He then read the list of names of doctors and nurses who would be transferred to Hospital Selayang as scheduled.

The Head of Surgical department Mr Rambi asked, "What is the criteria for the selection of staff to work in Hospital Selayang, can a staff apply to work there if they are interested."

The Director then raised his voice and answered that " Mr Rambi I just informed all of you regarding the staffing situation in Hospital Kuala Lumpur, I will not recommend any more staff to be posted to Selayang Hospital, so please don't' ask any more questions."

The Pediatric department head, Dr Raja then commented " What is so great about working in Hospital Selayang Hospital, there is no added incentives, the term of conditions are just the same as working in any public hospitals. I am quite comfortable here, no need to crack my head over the IT aspect. I am quite comfortable here." The staff of HKL gave a big clap to his statement.

The Surgical head of department said he was offered to work at SHP but he turned the offer down because there was no compensation for him to be transferred to SHP. He mentioned he would incur additional expenses. There was of course no promotion involved. To this Mr Pathma said monetary consideration alone was not sufficient to justify such a decision as one