

# Planning, Acquisition, and Controls



PART

V

## **Case V: Metropolitan Hospital**

Just before Metropolitan Hospital's monthly medical staff meeting was about to begin, Dick Milley huffed into the conference room in his usual manner: aggravated, impatient, and ready to rant. The hospital's chief of surgery for the past five years, Milley always had the same complaint, and today was no different. Having just completed a cardiac bypass, he was ready to share his thoughts in his usual angry, fast-paced, sarcastic tone: "I just finished an emergency bypass that almost turned into more of an emergency than it had to. Do you know why? Because no one could find my patient's chart. He's been in and out of this hospital for the past three years with cardiac arrest, for angioplasty, and for a pacemaker . . . you name it. Today he arrives in an ambulance—unconscious—and his chart is nowhere to be found. In the middle of surgery, a nurse finally brings it in, and we find out he's allergic to epinephrine, which we had on standby in case of cardiac arrest." Milley was just warming up. He had a captive audience waiting for its meeting to begin and somewhat intimidated by Milley's professional stature. "Here's the amazing thing, everyone," Milley said in a grandiose manner. "While I'm cutting into this



patient, without the benefit of any medical information, the front desk has already accessed all his insurance and Medicare coverage. They can see how much money he has donated to the hospital, and if he's up-to-date on his payments. So, I ask you—for what I am sure is the two-hundredth time at least: Why can the accounting and claims department have such easy access to their information, when the medical staff is lucky to find a chart around here, and even luckier if the chart is legible, accurate, and up-to-date? I mean, which is more important: my patient's insurance coverage or his medical history? I know my answer," Milley said sarcastically, "but I have to wonder what this hospital thinks."

Everyone was quiet, as usual, relieved that Milley was done. He often took advantage of the regular medical staff meetings to gripe about something or other. A brilliant surgeon, he was not easy to work with. He was tolerated because he was a great doctor and because he made sense. Today's meeting of 20 nurses, doctors, and other staff involved with providing medical services was a bit different from those in the past, although Milley hadn't known that when he stormed in: Sarah Grantt, the hospital's new medical director, was attending the staff meeting for the first time. Although Milley's comments were not addressed to anyone in particular, Grantt responded: "Interesting observation. So, what is it that you want, Dr. Milley?" Everyone was stunned, Milley most of all. He sat quietly for a moment, then extended an "Oh, hello" to Dr. Grantt to stall for time while he thought about her question. "OK," he said, stalling for more time. Then he launched into the description of his fantasy hospital, presenting it like a challenge to Dr. Grantt, as if he had thrown down his gauntlet and was ready to duel.

"I'd like all medical records to be as easy to access as accounting records, claims, and fund-raising records.

I'd like a computer in every room of this hospital, where I can get all the information I need and record all the information anyone else is likely to need." As Milley described his fantasy medical institution, new ideas started to emerge. "When I open a patient's chart, I want to see records of every treatment, every prescription, all the interactions that patient has had with doctors and nurses in this hospital. I want to see a complete medical history, a record of any medical conditions I need to know about, and results of all diagnostic tests." As he paused for a moment, Milley noticed that the attitude of almost everyone in the room had changed from tolerant indifference to attentive interest. Milley felt motivated by that. "I'd like to be able to check on a patient's status absolutely any time, by getting on a computer, and be sure the information is up-to-date. I'd like *never* to have to look for a patient's chart again."

### **Other Benefits**

Milley was on a roll. "And another thing. A system like that could unload a lot of the grunt work for the nursing staff, you know. There are so many standard procedures, for doctors and nurses. I'd like to relieve all nurses of having to check vitals throughout their shifts. There are now sphygmomanometers [the cuffed devices that measure blood pressure] that automatically take blood pressure; all a nurse has to do is wrap the cuff around a patient's arm. OK. Let's hook that machine up to the new computer system and record blood pressure automatically. Let's have that same system alert a nurse or doctor if the measurement is out of line in any way. Let's do the same thing for taking temperatures, which can be done automatically by ear; let's do the same for taking a patient's pulse, which can also be detected automatically with a Velcro cuff. Imagine the improvement in health care if nurses could use the time saved to respond to patients' needs."

This last point amazed Jean Alley, the nursing director. In all her years of working with Milley, he had never treated her or any of her staff with much respect. But Milley wasn't done. By this time, the other 20 doctors, nurses, and administrators in the room were absolutely riveted, listening to Milley paint a picture of what most considered a hospital of the future. Milley went on to describe IVs that could be hooked up to the computer system to automatically record the level of dispensed medication in realtime. He described an operating room where all systems were also hooked up to the same computer. The beauty of the Milley system was that all the information about medication and medical discussions, diagnoses, and medical tests was saved and was accessible to any doctor, nurse, or physician's assistant who needed to work with any patient. He also talked about automating the scheduling of surgery and operating rooms. "If I'm in the emergency room when victims of a car accident arrive, I don't want to make a phone call to schedule an operating room; I'd like to ask the system what's available and reserve the room I need even as I'm heading there." Milley took a deep breath after his detailed and compelling description of what he wanted and sat back.

The people in the meeting room had often heard Milley complain about the way the hospital handled its patient records, but no one had ever heard him describe what he actually wanted. They were fascinated and had some ideas of their own. But they remained quiet, waiting to see what would happen next. The new medical director surprised everyone when she said: "Well, those are very interesting ideas. In fact, I have seen some of them in action in France, where I worked for the last seven years. Dr. Milley, would you be interested in being the medical team leader of a group that would explore the feasibility of

just the type of system you described, a totally integrated medical management information system? We could call it the TIMM IS, for short."

How could Milley refuse? After years of complaining, someone was giving him an opportunity to make a fundamental change. Of course, he said, "Yes."

### Getting Started

The TIMM IS development team met one week later. It had five members: David Caine, Metropolitan's IS manager; Sarah Grantt, the hospital's new medical director; Jean Alley, the nursing director; Joe Heald, one of the hospital's finance managers; and, of course, Dick Milley. Grantt opened the meeting, explaining that this was a perfect time for this project. The project Grantt ran in France was part of a \$20 million grant from the French government to support hospitals in their attempts to start using information to improve their services. Grantt had learned a lot there. Also, Metropolitan had just received \$10 million to open a new state-of-the-art cardiac center. She believed that investing some of that money in the TIMM IS was a good idea, because an integrated medical information system would improve cardiac care, even as it supported other medical services as well. Grantt explained that she saw the project breaking down into six main components, each of which would conclude with a go/no-go decision about proceeding to the next stage:

- Gathering information about the hospital's current approach to information management
- Describing the new information system (Dick Milley was the obvious person to head up this activity.)
- Determining how the new information system would fulfill the hospital's goals
- Determining the feasibility—technically, economically, and operationally—of the new system



- Preparing a proposal for the board of directors
- Creating a project management plan, including a schedule and budget

### The Existing System

Before the TIMM team could do anything, its members really needed to understand how the hospital currently generated, stored, processed, and used its data and information. None of the team members was very familiar with his or her own system, much less with those of other departments. As a part of her introduction to hospital operations, Grantt had visited all the departments and asked about their information systems, an area of great interest to her since her work abroad. She had gathered the following preliminary information:

- **Medical:** Almost all medical data were maintained exclusively on paper. A lot of medical procedures used computerized equipment, including radiology, cardiology, and neurology. But output was always generated on paper (or film) and maintained in a paper file. In the current operation, the ability of doctors and nurses to treat patients depended on their having their hands on a physical chart.
- **Claims:** Claims had a very sophisticated PC-based information system. Its main database included all patient personal data, dates of treatment received (keyed in manually from charts and coded according to insurance and Medicare specifications), charges for treatments, and status of third-party claims. Claims had recently been invited to join a Web-based medical claims service agency. The claims system was connected to the accounting system.
- **Accounting:** Accounting had been the first department to be computerized, back in the 1970s. Now PC-based, its system was an off-the-shelf medical accounting software package, handling all accounts payable and receivable. The accounting system also maintained a full record of all patient personal data. About one year ago, the accounting and claims departments had networked their systems, an undertaking that required changing the types of computers accounting used.
- **Purchasing:** The purchasing department had become part of the accounting department about six months ago, providing an opportunity for the hospital to utilize EDI (electronic data interchange), which is the electronic exchange of business information, such as invoices, payments, and order status information. With only a handful of suppliers large enough to serve Metropolitan Hospital's needs, the hospital signed a new contract only every two years.
- **Development:** The development department raised money for the nonprofit hospital. Development used a PC-based database system, automatically generating letters soliciting donations from patients after they were discharged. The department also used its database to solicit donations from lists of potential donors purchased from organizations outside the hospital.
- **Finance:** The finance department ran a packaged program on the hospital's mainframe. It tracked revenues and expenses by type. The finance and accounting departments transferred data files into each other's systems.
- **Human Resources:** HR used an HR software package. Because most of the hospital's employees were union members, review procedures were very structured. Although the system had the ability to let managers execute performance reviews online, none of the medical staff took advantage of that feature. The accounting, claims, and finance staffs did.

- **Legal:** The legal department's staff of three had its own PC client-server network. The server contained all the legal documentation resources, and the department subscribed to an online case database.

The TIMM team had already begun digging into their project. Grantt shared the information she had gathered about Metropolitan's operations with her fellow TIMM team members, which put a dent in one of the first phases of the project: understanding the hospital's current operation. Milley had also made a dent in describing the new system, as he envisioned it. But there was a lot left to do.

### **Make or Break**

Grantt also shared her knowledge about the French project she headed. When she had taken the position at Metropolitan, she'd had no idea how applicable her overseas experience would be. In France she had been in

charge of one of the first totally integrated medical information systems development project, which was being tested at a university hospital. There, she'd learned about the painstaking process of determining how such a system should work. She'd also learned a lot about the risks involved. The security and backup measures were extensive. And the financing of such an undertaking was a challenge. She wondered how the TIMM team was going to show Metropolitan's board of directors that a multimillion-dollar investment in a new patient IS would lead to savings. That it would improve medical services was beyond doubt, but was that enough for the board? For the system to succeed, Metropolitan's board of directors would have to approve the entire process, and Grantt hadn't really gotten to know its members yet. This would be her first undertaking with them, and it was likely to make or break her career at the hospital. Either way, the process was bound to be interesting.