

CASE MODEL

MOUNTAIN MEDICAL CENTER'S EXPERIENCE WITH A COMPUTERIZED PHYSICIAN ORDER ENTRY SYSTEM

Mountain Medical Center is a 200-bed hospital in a large city in the Intermountain West area. In a discussion with a vendor representative of XYZ Solutions at the Hospital Quality of Care conference, the CEO and the CFO of Mountain Medical Center discussed their desire to improve quality of care at their hospital since medication error rates were increasing, including several recent deaths. The vendor suggested the XYZ Solutions system of registration, billing, and computerized physician order entry as a mechanism to capture medication errors before patients are affected. Desperate for a solution and anxious to join the technology bandwagon, the hospital scheduled a demonstration of the system at the hospital site. Impressed by the ease of use and functionality of the system, the hospital entered into negotiations for pricing. The final initial investment in the client-server system for hardware, software, training, and other CPOE implementation functions was determined to be \$4,200,000. Although this investment was a sizeable portion of the total budget, the management staff remained committed to improving quality of care and consequently launched the project.

Various committees were set up to help with development and implementation. One group was a physician executive committee, brought together to obtain physician input into the functionality of the system. Nurses were represented by a separate committee. Along with the management team, these committees guided the selection of customized functions with the hope of streamlining work flows. After about a year of development and functionality testing, the system was nearly ready to "go live." Training on the system took place during an intensive three-week period, after which it was mandated that the system be used for nearly all orders. The first week of system use went as planned, acknowledging the expected learning curve. But soon after doctors and nurses began complaining that the system was difficult to use, and required going through two or three screens just to order a single drug. The response time was also slow, sometimes taking five to ten seconds between screens. In addition, some orders would get lost in the system or inadvertently go to the wrong department. Frustration with the system was heard throughout the hospital, including concerns about patient safety and diminished time for patient care due to the excess time needed to enter orders. On knowing such problems, the vendor explained that the system was only in place at one other institution and that some features were not as yet field tested. As a result of these issues, Mountain Medical Center decided to pull the plug on the system two months after the go-live date.

The institution is now considering re-installing a similar system. During a meeting of the CEO, CFO, CIO, and several physician representatives, the next implementation will make the following changes:

- A workflow analysis will be done to see if any work processes can be made more efficient and error free, even before computerization, such as making sure anyone given a diagnostic test can be matched directly to an order. In the present system, sometimes patients would go for a test prior to the actual entry of the order, making patient-order matching difficult.

- The organization will provide a request for information to multiple vendors to create a vendor “short list.” Vendors on the short list will demonstrate the systems to a wide variety of stakeholders including nurses, physicians, clerical personnel, and management.
- A “rapid prototyping” method of system development will be used rather than the previous linear, sequential model of development. Physicians, nurses, and other personnel will test system features in the early phases of development. Feedback can be incorporated into new modifications. This process can have several iterations before the “go-live” date.
- A longer period of training will take place, once again incorporating feedback.
- Management will be in continual close communication with stakeholders throughout system development and implementation.
- The team will look into implementation using a smaller budget (about \$3 million) for the system.

KEY ISSUES:

Although the Mountain Medical Center realizes there are no guarantees about the next implementation, the institution was able to take lessons learned and boldly keep their commitment to quality care and consider new solutions.

- 1) What pros and cons are likely to be encountered in implementing the following parts of the proposed new system implementation:
 - Technological issues?
 - Vendor selection issues?
 - Workflow change?
 - Organizational issues?
 - Cultural issues?
 - Project management issues?
 - Financial issues?
- 2) What additional areas need attention in order to prevent another unsuccessful implementation? How should those areas be handled?
- 3) What problems will the team face in attempting to meet their goals despite the smaller proposed budget?

<