Maximizing the Benefits of Health Care Information Systems

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Information systems can improve cost control, increase the timeliness and accuracy of patient care and administration information, increase service capacity, reduce personnel costs and inventory levels, and improve the quality of patient care. However, experience shows that most of these benefits will not occur automatically following system implementation. Operational problems may exist that diminish information timeliness, accessibility, and accuracy; policies and procedures may not have been sufficiently tailored to reflect the realities and intents of the systems; and personnel tasks may not have been adequately restructured. In order to realize the full potential of information systems, health care organizations must plan for and implement strategies that are designed to maximize such benefits. This paper describes a method for developing benefits maximization strategies. The processes used to define strategies and their outcomes are presented.

THE BENEFITS PROBLEM

Hospitals implement information systems with the expectation that the systems will reduce cost, increase the efficiency of operations as well as staff productivity, enhance the quality of care, increase service capacity, and improve the timeliness and accuracy of management information.

Information systems can result in these benefits. Literature and our experience indicate that the potential benefits are extensive and diverse. Table 1 lists potential benefits. However, only one-third of all potential benefits occur automatically or with limited management intervention. These benefits, which have been defined as fallout and spin-off benefits, may include increased timeliness, accuracy and legibility of information, and reduction in the number and kinds of forms. The remaining two-thirds of the benefits require significant management effort and planning. These benefits are usually those with the largest efficiency and effectiveness implications and include eliminating unnecessary...
Table 1. Potential Benefits of a Hospital Information System

I. Personnel savings
   A. Reduce time devoted to information-handling activities
      1. More efficient compilation and reporting of management data
         a. Clinical
         b. Administrative
      2. Filing and retrieval
      3. Telephone communications
      4. Eliminate redundant systems
   B. Reduce duplication of services
      1. Ensure procedures are followed
      2. Improve ability to track work
   C. Improve report formats and timeliness
      1. Faster, more accurate reports
      2. New reports
      3. New presentation mode, e.g., graphics
   D. Increase service capacity
   E. Increase staff availability
   F. Management options
      1. Functional area receiving automated system
         a. Decrease FTEs
         b. Redirect available man/woman hours to unaffected tasks
      2. Other functional areas
         a. Decrease FTEs
         b. Redirect available hours to unaffected tasks

II. Material savings
    A. Reduce waste
       1. Improve forecasting
       2. Monitor usage
       3. Reduce misplaced materials
       4. Increase labeling accuracy
    B. Reduce pilferage
    C. Improve cost control
       1. Maintain appropriate supply levels
          a. Reduce inventory
          b. Reduce carrying costs
          c. Reduce emergency purchases
       2. Obtain appropriate quantity discounts
    D. Improve space utilization

III. Quality improvements
    A. Improve health status
       1. Reduce waiting periods (delayed care)
          a. Increase provider availability
          b. Increase support staff availability
          c. Faster results reporting
       2. Improve continuity of care
       3. Eliminate unnecessary services
       4. Identify and eliminate problematic personnel and equipment
       5. Flag abnormals
       6. Reduce errors
    B. Improve satisfaction
       1. Staff
       2. Patient
    C. Research capability