

The Key to Clinical Excellence and Business Stability in Dialysis

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“The incessant production of new data and its instantaneous communication create a paradox: Information, the thing that eliminates uncertainty, now increases everybody’s feeling of insecurity because of the failure to convert data into knowledge.”¹

This quote, taped above my desk, reminds me that the quantity of information, such as that held in typical data bases, does not necessarily help one to better understand and solve problems. Data (information) alone doesn’t spontaneously become knowledge. This is important to remember when considering computerization of a dialysis facility.

The development of urea kinetic modeling, introduced by Sargent in the early 1970s², is an excellent example of the power of turning data into knowledge. The process of monitoring dialysis has always centered on periodic analysis of blood chemistry levels. Most patient charts and computerized data bases are filled with these values.

Review of these data by a trained eye will often reveal a clinical problem. Complex combinations of blood chemistries that result from profound metabolic upsets, however, are often missed. Urea kinetics addresses this issue by analytically converting several seemingly isolated pieces of information into important treatment knowledge.

OPTIONS FOR COMPUTERIZATION

There are many options available for computational and data base assistance in the dialysis field. These range from hand-held devices for single computations to elaborate multi-terminal systems that, in some cases, claim to be “paperless.” (The entire patient record is stored on electronic media.)

The adage “you get what you pay for” may not apply here unless the goal is simply to eliminate paper and put information, regardless of its potential use and specific value, into a data base. The operative word is goal. What is the goal of computerizing? This important issue will be discussed.

The inference of many who advocate extensive conversion to data bases is that taking data out of a paper chart and putting it into a computer increases its value. Whether or not this is true depends on the skill used in designing the system.

CONFUSION OVER THE “RIGHT” COURSE

Consequently, there is considerable confusion regarding what to do, the kind of system to get, what parts of a dialysis facility to computerize, what information will be useful, what data are of limited use, what is really useful to know, and its cost.

Is a dialysis facility going to benefit—that is, reduce staff time and increase understanding of clinical problems—because of computerization? Or will it yield more problems—clumsy reports, nurses tied to computer stations, and superfluous information difficult to “thin out” of an electronic chart?

To be up-to-date, hardware and software suppliers tend to emphasize the need to computerize in general. This only adds to the confusion. Increasingly, however, the dialysis community needs to focus on the problems it wants to solve by computerization and set goals for this process.

THE ECONOMIC CRUNCH

Reimbursement within the dialysis industry has been declining relative to expenses, and this trend will continue. Recent analyses have shown that, over the last four years, while revenue (the purchasing power of fixed-rate reimbursement) has been reduced, only the cost of supplies has decreased. That is, even though there have been major staff-mix changes and other attempts to economize, these changes have just kept cost increases under control. In fact, margins and net income have steadily decreased.³

As a result, moves to “modernize” must focus on aspects of our business that will be aided by better use of data (i.e., increasing knowledge and improving quality of care). This is accomplished by reducing staff time spent in unproductive activities, controlling costs and the use of nonreimbursed items, and maximizing reimbursement for all treatment-related activities. Dialysis facilities should take the approach that most sound businesses take: Computerization should increase product quality while providing guidance for sound business decisions. Information management should address the dual requirements of quality clinical care, business stability, and growth. Dialysis is a business and must be run like one to support quality care.

CRITERIA FOR COMPUTERIZATION

When selecting a computer system for a dialysis facility, the system should:

- Address the needed information/knowledge transformations.
- Help with formal quality assurance (QA) issues.
- Help with improving the quality of care (nonformal QA issues).

- Make record keeping easy.
- Allow you to keep only what you want; it should retain a “smarter” record and shouldn’t require periodic “thinning” of trivial data.
- Require less staff and cost less (when complete costs are accounted for⁴) than the staff positions eliminated.

A WELL-DESIGNED SYSTEM

A well-designed computer system for a dialysis facility will:

- Retain essential medical information for clinical management and tracking of medical problems.
- Provide capabilities for historic analyses and will help solve current problems and detect facility-wide issues.
- Analyze essential data for trends and other information to aid the staff in detecting otherwise subclinical problems.
- Provide QA information relative to mortality and morbidity for monitoring agencies before their own analyses are available or fill needed information gaps before outside agencies perform such analyses.
- Provide required cost-reporting data and QA criteria (e.g., KT/V) mandated by the Health Care Financing Administration (HCFA).
- Collect billing data and produce bills with minimal staff and provide formats specific to individual payer requirements.
- Electronically submit bills and receive payment information.
- Require minimal manual data entry.
- Produce accounts receivable information to help maximize collection efforts.
- Produce clinical management reports as an aid to maximize staff effectiveness and control costs.
- Be adaptable and coexist with existing procedures and computer capabilities.

- Be expandable and grow with the amounts and scope of facility data needs.
- Be evolutionary and change as information/knowledge capabilities continue to develop.
- Be affordable.

KEY POINTS

The key point to consider in selecting a computer system is cost. With the current cost reimbursement situation—rising costs with reimbursement remaining constant—the savings from the combined criteria listed above must exceed the complete cost of a computer for it to be an advantage. Increased quality of patient care without accompanying savings is not enough. Few facilities can take the cost-is-no-concern approach.

You can make the case that quality care may have a payback. If morbidity can be anticipated and avoided through targeted analyses of clinical data, patient quality of life can be improved. You could expect this to decrease overall medical costs and increase facility revenue nationwide since fewer treatments are missed due to illness. These analyses, however, while making public policy sense, are difficult to confirm.

A computer system should represent a net savings to a dialysis facility with expectations that quality of care knowledge, if applied, will have a further positive economic effect. In light of this, the results of our analysis of computer costs published a year ago⁴ provide important guidance.

Consistent with the results of that analysis, buying hardware and software is not the only solution to effective computerization. There are outside services that provide the features essential to effectively use computer technology in a dialysis facility. Hybrid systems are also an alternative. In most cases, outside services or hybrid systems are less expensive than in-house systems.⁴

SUMMARY

The desire to computerize must be kept in perspective during these tense economic times. Using computers should result in increased knowledge and understanding from information. To do this, one needs to define the problems and establish goals. Overall goals include insuring that:

- Computerization increases quality of care and provides guidance for sound business decisions.

- Savings from computers exceed their cost. Once these goals are met, computerization will represent a welcome advance in the effectiveness of caring for End Stage Renal Disease (ESRD) patients.

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