Choosing a medical billing system

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ABSTRACT

A billing system is fundamental to the financial survival of an institution. Choosing one requires considerable managerial skill and mistakes are easy to make. Several factors have an impact on the decision-making process. These include environmental, managerial, technical and planning considerations.

Among environmental considerations, the organizational dynamics and organizational structures are most important. The system can be managed in several ways; in-house approaches, use of service bureaus and use of facilities management firms are among the most common management methods. Flexibility, on-line versus off-line systems and the use of large or small computers are major technical considerations. These also have considerable impact on costs. As in most important decisions, the relationship of the billing system to a long-range computer plan should be carefully thought out.

ENVIRONMENTAL CONSIDERATIONS

Most medical institutions make a clear distinction between the segment of the organization which deals with financial management and that segment of the organization which deals with daily administrative operations. This can cause considerable problems in implementing a general computing system because the information necessary to bill patients is a subset of the information necessary to deal with patients for purposes of medical record registration and daily care activities.

Differences in data collected have to do with the types of data that are emphasized. For daily operations in a hospital, for instance, the most important thing may be to know where the patient is located; for billing purposes, it is important to know who the guarantor is and what insurance applies. Numbering systems may also be a source of differences. Each individual ancillary service frequently maintains an accession number and it is not unusual to have different numbering systems for medical records and billing or different systems for outpatients and inpatients. These differences can affect the choice of a billing system. In order to effectively choose an overall system, it is essential that a person be identified who has some influence on all aspects of the medical organization so that differences can be reconciled.

Perhaps the most important environmental consideration is the level of patient activity. In most computing systems there is a fundamental number that determines the kind of system or the power of the system necessary to do the job. Probably the most sensitive number here is either the number of beds or the number of outpatient visits.

The scope of activity is another important environmental variable. The division between inpatients and outpatients or physician and hospital billing can be extremely important. The range of services is a very crucial consideration. Not all billing systems are complete. Consideration of whether or not records from patients who are seen outside of the institution in outlying clinics introduce additional administrative problems. In clinics or community hospitals, the scope of activity is much less than those of a medical center. The computing system requirement is correspondingly decreased.

There may also be operational restraints that greatly affect the choice of the billing system for a particular environment. These are in part, a product of the administrative organization but there may be a valid historical precedent which the individuals who are providing the services are committed to. Attempting to change these by administrative fiat may cause more problems than they solve.

Finally, in many environments, change is frequently a difficult concept. This means that the consideration of installing a new system may be blocked by those people who are comfortable in the jobs that they currently have. The dynamics of an environment can be an important variable in determining whether installation of a new system is at all feasible. If the level of inertia is high, a complex billing system should not be considered.

MANAGERIAL CONSIDERATIONS

There are three basic ways that one can install a billing system within a medical environment:

1. One can run the system on one’s own facilities within the institution.
2. One can purchase services from a service bureau. This
can be done in several ways. Terminals can be connected to the service bureau or mail receipt of and transmission of documents between the service bureau and the facility can be used.

3. A vendor can set up a computer center within your facilities and establish a price for their people to do the job.

Each of these approaches has advantages. The particular approach that should be taken depends upon the environment one is in. In general, the in house approach is more attractive to larger environments, i.e., environments of more than 300 beds or more than 3000 outpatient visits per month. Whereas, the shared service approach is generally desirable for smaller environments. The in house approach has more in common with the facilities management approach than using an outside service. It does remove from the management of the institution the responsibility for the facility and may make the costs more visible since they are a visible part of accounts payable. However, management does have less control over the program than with a totally in-house system. Many observers also believe that though the costs are more visible, they may also be more expensive. This consideration would depend upon the efficiencies and abilities of a particular institution to manage a computer facility. Obviously, if an institution has no in-house expertise and does not choose to develop any, a shared service or a facilities management team should be considered. In-house approaches are particularly important when the system is designed to be very responsive and innovative to local users. Shared services can only implement systems that many users will also find useful. They will usually charge a great deal for changes which appear to them to be of value to a single institution. In many situations, a combination of these approaches may be appropriate. For example, if registration is fundamental to both billing and medical record storage and retrieval, this may be a function that would appropriately be done in house. This system could feed information to a billing system for physicians since it may have unique characteristics in which one may not want to develop in-house expertise. In some instances, technical considerations, like expertise with physician billing, expertise with outpatient billing or familiarity with inpatient billing may determine the approach for choosing the system in each of these three areas. In other instances, pressures from individuals within or without of the institution may be the fundamental considerations. It is very likely that most of the choices depend on combinations of pressures. This may be a fundamental reason why there are so few examples of outstanding billing systems in the United States today.

Finally, it would seem that with the many years that billing systems have been in existence that they would be refined to the point that it would be immediately obvious as to when one system was superior to another. This is however, not the case. The inability to agree on payment priorities for third party billing have also had a major impact on the variety and quality of systems. Billing within the health industry differs from that in other industries, primarily because the person to whom the bill is sent is not usually the one who pays the bill. More often it is a third party who will pay all or part of the bill. Someone has to decide which third party should pay first. It is often possible to separate the quality of one billing system from another by carefully exploring the ability to do prorating. Reporting requirements from third parties, particularly those of state insurance and federal insurance agencies can also be important considerations in choosing the billing system.

TECHNICAL CONSIDERATIONS

There are a variety of technical considerations which can go into the decision for choosing a billing and accounting system. Perhaps the most fundamental of these is whether an online system or a batch system is desired. As in the case of the divisions between in-house systems, shared systems and facilities management systems, a combination of the two can also be considered. The current trend is toward online systems, but there are still only a limited number of vendors who make them available. In addition, the terminology is not very precise and one vendor’s online system may be another vendor’s batch oriented system. For instance, simply entering the data online at a terminal does not necessarily mean that the system is online. If in fact the information is not merged into a file for twenty-four hours, then such things as inquiry as to the current status of a patients bill or in particular, having a reasonably accurate bill for an outpatient before they leave the facility will not be possible. It is fair to say that for many aspects of billing, it is not necessary to be totally online. However, as the costs of the hardware continue to decrease, the gains that can be achieved from being online, particularly in the areas of file editing, which insure that files are accurate and for inquiry purposes by a cashier are not to be underestimated.

Another technical consideration that has an impact both on the style of computing and on the cost of computing has to do with whether to choose a minicomputer or a large scale computer. Until very recently, for hospitals in excess of 300 beds, only large scale computers were available. This is no longer the case. Furthermore, the complexity of large systems has become such that it is no longer true that if you double the size of the computer, you will increase the efficiency by a factor of 4. At a certain level, it is even questionable as to whether the efficiency increases at all as the size of the computer increases because of the large overhead costs as the system grows. This applies both to people and to the support of a multiplicity of systems and languages. In addition, if there are too many functions on a large scale computer, it can be difficult to establish priorities. If billing and accounting is one of many functions and payroll is another, there may be sharp disagreements within an institution as to which should come first if equipment or other problems require a delay in schedule. The background of people who relate to small computers or large ones is generally different. There are few computer specialists today who feel comfortable with both minicomputers
and large scale machines. The above two fundamental technical decisions can greatly influence the options which a particular institution has available for a billing system.

Another technical consideration is related to the expertise in the billing office. The extent of the reporting that is required is directly related to the sophistication of the people using the reports. Also, some people are willing to do some things manually rather than require the computer to do it. There is a delicate balance between whether the energy to implement a function on a computer justifies it when a person may be able to accomplish the same function with a couple of days of effort each month. Generally, there is a way to distinguish one system from the other by comparing the number and quality of management reports that the system produces.

The comparison of systems by the types of reports produced can be very difficult. Generally, the best way to do this is to spend the time with the vendors to hear their point of view and also rely on managerial people who have had extensive billing experience. Probably the most important thing is to obtain the opinions of other users who have had experience with the billing system under consideration. This can be done in several ways. The ideal way is to make an in-depth visit to the system under discussion. If this is not possible, names of people who have had experience can be obtained and they can be called. Finally, one can try a written survey. Both of the latter two methods may not give sufficient information in order to make a reliable judgment.

Flexibility is another fundamental technical consideration. It is probably one of the most difficult to measure. Nobody would like to admit that he isn’t flexible and generally, if one asks specific questions as to whether this report can be changed or that can be changed, one will get from vendors at least a guarded probable yes. It is only when one asks for a commitment in writing that one finds how flexible the system really is. It is very important to write a contract which spells out in as much detail as possible those important considerations and how they will be accommodated.

Reliability is fundamental to all operations. If possible, one should obtain the up time characteristics for any system under consideration. This is very difficult to do and only through discussion with other users can one truly tell whether a system is or is not reliable. Lack of reliability can cause some of the greatest frustrations among the operations people within a computing department and can be a fundamental reason for lack of performance within an institution.

Finally, one of the often talked about technical issues and this is both a technical and a managerial issue, is security. Recent fair information practice legislation has made it difficult to interpret how much security is really desirable within a medical computing system. Nonetheless, it ought to be a conscious decision to make the information available and not something that happens by accident. Security is related both to the technical and managerial aspects of the system. A batch oriented computer system with tight controls on the distribution of the hard copy is the most secure. A dial-in time sharing system with no security codes on any files is the least secure. It should not however, be assumed because there are terminals on a system, that it is less secure than one without. Each computing environment can take steps and provide security even with a large number of terminals.

### PLANNING CONSIDERATIONS

The choice of a billing and accounting system ought to take into consideration long range planning. This can be done by trying to project total costs over a suitable time period in the future. This should include costs for equipment, outside contracts, internal people costs and operating budget for supplies. A typical example of such a projection for a 400 bed hospital with 100,000 outpatient visits per year who has a desire to interface the billing system with a patient information system can be seen in Figure I. Each of the items within a plan should have more detail which breaks it down into individual functions and individual

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Figure I—Summary of direct costs
people and equipment. This will make it possible for a managerial review team to determine whether the costs are in fact being accurately projected and review on a regular basis the progress of the plan.

Finally, the type of billing and accounting system one chooses can be affected a great deal by the relationship of the billing and accounting system to other systems. I mentioned before the importance of registering patients. This is a good place to begin computerization. Hospital programs which do this are generally referred to as admission, discharge and transfer systems. Use of such a system provides the fundamental base for many other activities within the institution.

It would also seem that starting with information systems that are helpful to the physicians, the nursing staff and other clerical people can obtain support and finally result in a successful installation of a billing system. Thus, beginning with systems that provide timely lab results, timely x-ray reports and smooth pharmacy operations, have considerable merit. Frequently, however, it is the case that the individuals who function in these service areas have little experience with the use of computers. Increasingly, their colleagues in other institutions may tell them that they could function more effectively with this tool. However, it is still most common to begin computerization in a medical environment with billing and accounting. In summary, the choice of a billing and accounting system must take into consideration several important factors. Perhaps the most important one is the individual environmental peculiarities. I think we can expect these to be less significant in the future as federal regulations increasingly begin to create uniform data basis, uniform reporting requirements and control many operations previously within the purview of individual institutions. The complexity of a billing operation will continue to make choosing a system a difficult venture for some time in the future.