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Abstract

Rehabilitation for the traumatically brain-injured patient has undergone tremendous growth and change in the last ten years. Innovative treatment techniques and treatment environments have developed, outpacing the consumer's ability to monitor efficacy. This paper provides discussion of numerous parameters which may impact the operation and efficacy of post-acute rehabilitation programs for the traumatically brain-injured patient.

In the last ten years, medicine has seen the introduction of many changes. While some of the more acknowledged and visible changes have occurred as a result of Medicare reform of 1983 (i.e., Diagnosis Related Groups), equally significant changes have seemingly occurred in response to the demands of a new population.

In 1977, there existed few treatment facilities in the country dedicated specifically to the rehabilitation of traumatically brain injured patients. Certainly, treatment was available from general rehabilitation units in acute care hospitals; however, these units did not focus on the special needs of this population. Treatment models were often designed after a cerebral vascular accident (stroke) model and were thus plagued with inadequacies. Professionals attempted to treat diffuse neurological injuries and their sequelae via a system originally designed to treat comparatively focal neurological insults and resultant physiological deficits.

Conventional wisdom held that maximal recovery following neurological insult was complete somewhere between six and twelve months following onset. Families, patients and treating professionals alike operated with these expectations. Patients were therefore discharged to family settings, nursing homes, or locked psychiatric facilities for lack of more appropriate settings.

As families and healthcare providers around the country began to acquire experience with this growing population, their enlightenment led to a demand for more suitable discharge options. It was obvious that family systems underwent tremendous upheaval fol-

lowing re-introduction of a head-injured family member with unresolved deficits (Lezak, 1976). Nursing homes also frequently saw the development of inappropriate behaviors, often described as "acting out." Locked psychiatric wards did not provide remediative care and treatment so much as pharmacological custodial care.

In general, professionals began to see that patients did not always respond well to these environments and that, in fact, there might be reason to believe that brain-injured patients could continue to learn and improve beyond the six to twelve-month rehabilitation expectation (Cole, Cope, & Cervelli, 1985; Long, Couvier, & Cole, 1984; Rosenthal, Griffith, Bond, & Miller, 1990).

As a result of changes in reimbursement and the emergence of a new treatment population, post-acute head-injury treatment centers have become far more prevalent (Arakaki, 1988; NHIF Directory, 1989). As with many growing industries, consumers have the advantage of new services, but may experience potential hazards such as 1) lack of widespread expertise, 2) practices for which ethical standards have yet to be developed, 3) marked variability in service delivery models pending the development and acceptance of a stable technological standard of care, and 4) marked variability in outcome and outcome measurement (Prigatano et al., 1984; Fryer & Haffey, 1987; Scherzer, 1986).

There are numerous variables which should be considered in the purchase of post-acute rehabilitative services for the traumatically brain-injured population. Issues pertaining to personnel qualifications, pricing structures, facility treatment philosophies, treatment setting, and cost benefit should be carefully considered.

Personnel Qualifications

Consideration should be given to the comparative experience of professional staff at one facility versus another. It is advisable to review senior staff management for longevity of employment at the facility and for treatment experience with this population. It should be the practice of the facility to empower the senior staff with treatment direction and outcome responsibility. In this way,

senior staff can positively influence the treatment objectives of new staff members or recently trained professionals.

The professional degrees and disciplines of these persons are less critical than the individual's experience with hands-on treatment of this population. There are very few professional training programs in the country which provide extensive clinical practicum for this population. Consequently, the newly graduated professional will not necessarily hold information on the latest technological advances in this particular field and will require supervision by experienced senior staff. Rehabilitation professionals average approximately two years on the job before seeking employment elsewhere. This high turnover rate slows the learning curve at any facility and reduces the likelihood of derived benefit from a given therapist's clinical experience for future patients. The benefit of a stable senior staff management system is thereby enhanced.

Licensure and professional training background of therapeutic staff is of equal importance to staff experience in the program evaluation process. While it is not necessary to treat only with licensed professionals in each of the major disciplines, consumers should be aware that there exists wide variability in the utilization of licensed professionals in programs around the country. The extent of variability can be extreme, fluctuating from one-to-one staff-to-patient ratios to utilization of licensed staff only for review and/or sign-off of non-licensed staff members' work.

A comprehensive program should employ licensed and credentialed therapists in the major rehabilitation disciplines, i.e., physical therapy, occupational therapy, and speech/language pathology. If the program provides vocational rehabilitation services, qualified personnel with appropriate credentials in rehabilitation counseling and work evaluation should be employed. Programs with additional components of professional educators, licensed family counselors, clinical psychologists and/or neuropsychologists will result in better programming.

Most consumers expect that these disciplines will be represented and are often surprised to discover, upon close inspection, that these professionals are consultants versus employees, serve multiple locations, and/or rarely perform direct patient therapy themselves. In some states, the availability of the licensed professional is mandated by law; however, aides can often be found providing the bulk of treatment with varying levels of supervision. The consumer should be careful to fully investigate these subtle, yet critical, differences between programs and make educated decisions about utilization of said.

The Commission on Accreditation of Rehabilitation Facilities (CARF) recently began accreditation of post-acute rehabilitation facilities (Standards Manual, 1988). While this development goes a long way toward ensuring quality of care, there currently exists no provision in CARF standards regulating professional licensure and credentials, nor addressing who treats the patient, how often, and with what level of supervision. This is the case for medical as well as therapeutic intervention. The consumer may be surprised to learn that there is no required periodic medical review of patient condition or of patient programs in many post-acute facil-

ities. Subtle medical issues such as complex-partial seizure disorders, medication interactions, medication toxicity, low pressure hydrocephalus, or initial symptomatology of potentially serious health conditions are left to non-medical staff to recognize and secure treatment. This should not be construed as criticism of CARF, as CARF relies upon State mandates for these issues.

Pricing Structures

Perhaps the best advice in this category is an old adage: "You get what you pay for." There are several pricing strategies utilized in the post-acute rehabilitation industry today. These include 1) fee for service billing, 2) per diem billing, and 3) discounting.

Fee for Service Billing: This applies to charges for specific services rendered. This system requires high accuracy because it is subject to audit by payer sources. Clinical programs are designed to fit the individual patient's needs and billing for the services becomes a documentation of the program implementation. The payer can be assured that payment is only for services actually rendered. As the patient progresses and needs less service from a particular therapeutic discipline, program cost should decrease accordingly. Under this system, there is little question as to what is being paid for. There is also little question about who is providing the service and what their credentials are. Under this billing system, state regulatory agencies can readily police the provision of care by licensed versus non-licensed individuals, thereby providing additional protection to the consumer.

Per Diem Billing: This system allows for excellent cost prediction on a monthly basis. However, the implied contract with most per diem services is only that a "post-acute head-injury rehabilitation program" will be provided. Since there is no direct statement regarding what specific services are to be provided for that per diem rate, accountability for specific therapies via professional auditing is very low.

Programming across the country varies considerably in terms of daily therapeutic intensity—from no therapeutic programming often over the weekends to a range of one to six hours per day during the week. Per diem rates are often the same on days when professional therapy is provided as on days when professional staff is not involved. Typically, there exists no mechanism for an automatic decrease in program costs as the patient improves since the per diem rate remains the same throughout programming. These programs lend themselves well to a routinized service or program delivery model, which has greater difficulty being responsive to individual patient needs and programming demands.

Under a per diem billing structure, the consumer has no means by which to ensure that he is getting what he is paying for until he is in a position, after several months in that program, to make a decision about whether progress achieved to date is reasonable. The consumer is left with no objective means of determining whether the patient is progressing due to services rendered and the intensity with which they are delivered or whether the patient would have progressed without the services. Conversely, if the patient does not progress, the consumer may be lead to the inaccurate conclusion that the lack of progress is due to the neurological

condition of the patient rather than ineffective programming at the facility.

Discounting: In order for a business to remain viable, its income must consistently exceed its expenses for the same period of time. When a program discounts professional services from a standard per diem of \$500.00 to one of \$275.00 and, at the same time, states that the level of professional programming will not vary, there is the potential for a very serious problem. It might be thought that the difference between the usual rate and the discounted rate represents "profit." In any case, the consumer must question just how much service a patient can receive for \$275.00 per day.

It must also be remembered that post-acute programs operate in the same business environment as other businesses. Costs for buildings, utilities, insurances, and wages generally comprise 75% or more of most operating budgets. If these costs go up for one business, they rise for all businesses. The consumer should question the logic of a discount billing structure. This strategy may mean that rates were artificially inflated before discount. Generally speaking, there is usually good reason that facility costs vary and this variance can be traced to staffing levels utilized, degree of therapeutic intensity, and/or the presence of licensed, credentialed, and, thereby, more expensive treatment staff. The bottom line is that, as we stated earlier, "You get what you pay for."

Evaluation Charges

Various formats for evaluation exist and the consumer should clearly state his desire to obtain eligibility assessments versus in-depth diagnostic evaluations. Consumers may be impressed by the fact that some providers will evaluate a patient at no charge. They receive a report from the evaluator which may be a few pages long or even a computer generated format of "yes" and "no" answers. The not-so-surprising finding is usually that the patient is appropriate for admission.

Since most post-acute rehabilitation programs represent a considerable expenditure, it seems advisable for the consumer to obtain information about the full cost of programming, full program duration, and measurable, understandable statements addressing pre-admission outcome expectations.

Outcomes should be clearly stated in terms of the expected discharge living environment and what that environment will cost on an annual basis. The nature of professional involvement which will be required following discharge and its duration should also be stated together with whether the patient will be employable and at what wage capacity. The consumer should clearly state their expectations of the evaluation and should differentiate between a diagnostic evaluation and an eligibility assessment.

The credentials of the evaluator should be carefully reviewed. The professional objectivity as well as training and background of the evaluator should be considered. Consumers might be surprised to learn that, in some cases, the evaluator is also a marketing representative for the company and, as such, is paid on a commission basis for evaluations and admissions. Ethical considera-

tions may be compromised and should be carefully evaluated.

Philosophical Concerns

The structure of therapeutic delivery becomes an important variable for consideration when purchasing post-acute services. At present, a choice exists between group treatment and individual treatment sessions. Some programs provide all therapeutic activities within a group environment. Others provide some one-to-one treatment sessions on an "as needed" basis. Still a third group provides the majority of treatment under a one-to-one treatment model with groups used on an "as needed" basis. The latter is the most intensive and individualized treatment modality, thereby increasing the likelihood that learning will be faster in most circumstances. Of course, social skills are enhanced by utilization of group treatment sessions, so some group treatment sessions are necessary.

Educators have long recognized the inherent benefits of one-to-one teaching and the limitations of classroom style or group approaches to learning. It appears evident that, since neurological injury results in an impaired ability to learn, the most effective method of instruction is likely to be the highly individualized one-to-one method of treatment. Group treatment is far less costly to provide; however, the benefit derived also does not equal that of more costly one-to-one treatment.

Also relevant to the discussion above is the idea of residential versus outpatient treatment. We must remember that the brain-injured patient is struggling to re-acquire information, routines, and abilities in all areas of daily activity. Since we have observed that the patient's ability to learn is only altered and not absent, the patient continues to obtain information from the environment. Professionals have found it difficult to control the total learning environment in outpatient programs. Families respond inappropriately to maladaptive behavior, the public gives attention to asocial behaviors, or children learn they can outwit a brain-injured parent. Many outpatient programs are plagued by what they cannot control and their effectiveness is thereby reduced.

Residential programs, on the other hand, provide greater control of environmental influences and are in a better position to manipulate the environment to enhance learning. Instead of the patient learning to make a bed at 2:00 p.m. in the occupational therapy area, he learns to make the bed he slept in the night before, at 7:30 a.m. Likewise, behavioral intervention programs can be applied 24 hours per day as opposed to 3-5 hours per day. Learning can be expected to be faster and generalization more complete.

Treatment Setting

Treatment settings vary around the country and setting is representative of program philosophy. Programs in rural settings are often designed for management of behaviorally disturbed patients. These programs assume that the general public within an urban setting will not tolerate the patients' behaviors and that the patients cannot tolerate the stimulation of an urban environment. These matters should be dealt with programmatically rather than geographically. It is far better to change a patient's tolerance to an environment while easing the patient into that environment in a

controlled fashion. This allows for maximal generalization and carry-over (Condeluci & Gretz-Lasky, 1987). In fact, a community re-entry program located several miles from the community seems a misnomer.

Generalization is best achieved when the treatment settings are similar to those that the patient will be functioning in. The impact of the environment on neurological recovery, on a long-term basis, is becoming better understood. Kaplan (1988) states "...a comprehensive rehabilitation 'enrichment' program may improve functional status beyond that which would occur through spontaneous recover alone... This may enhance the natural plasticity that occurs with the central nervous system."

While many contracts call for JCAH (Joint Commission on Accreditation of Hospitals) accreditation, these credentials are unavailable to many post-acute facilities as they are not hospital settings. A more appropriate accreditation to look for may be found in CARF (Commission on Accreditation of Rehabilitation Facilities) accreditation. Specialty accreditation in brain injury is available.

The consumer should be aware of programs which may move a patient from the original program of admission. This is usually done to allow specialty programming. While on the surface this appears appropriate, this process serves to elongate treatment programs as staff at different locations must take time to become familiar with the patient. Under the most ideal circumstances, this process is expensive and inefficient, especially if it is occurring in 3-4 month intervals.

Cost Benefit

As has been previously mentioned, post-acute rehabilitation services represent sizeable expenditures on cases for which initial hospitalization can already be costly. As the head-injury rehabilitation industry has matured, it has become increasingly more adept at predicting outcome and assigning cost to the attainment of those outcomes. Where it was acceptable in early practice to treat a patient without concrete goals, this approach is no longer considered acceptable. Professionals should now be able to provide explicit, measurable short and long-term treatment goals, as described above, as well as attendant cost projections.

Cost benefit analysis should be conducted prior to initiation of an aggressive and, most likely, protracted treatment regime. This is not to say that dollars should determine the availability of rehabilitative services to individuals. Rather, significant financial savings can be attributed to successful post-acute treatment of this population in the majority of cases (Ashley, Krych, & Lehr, 1990).

Effective cost benefit analysis can be done fairly simply. Costs associated with the current level of care are calculated. Next, an assessment of the likelihood of stability or deterioration to a higher level of care is made. These figures are then used in conjunction with life expectancy to predict a cost of lifetime care without further intervention. The resultant sum is compared to the sum of the cost of post-acute services and the anticipated

reduced cost of lifetime care following treatment, again projected for appropriate life expectancy.

COST/BENEFIT ANALYSIS

1. Enter the current cost of care for one month:

_____ x _____

2. Enter the number of years life expectancy:

3. Multiply No. 1 by No. 2: _____

4. Enter the projected cost of care after treatment for one month: _____ x 12: _____

5. Enter the number of years life expectancy:

6. Multiply No. 4 by No. 5: _____

7. Enter projected cost of post-acute program:

8. Add No. 6 to No. 7: _____

9. Compare No. 3 to No. 8: _____

Cost w/o Treatment (3) vs. Cost w/Treatment (8)
 _____ vs. _____

(add present value adjustment, deterioration, inflation, and major medical expense)

It should be realized that the above calculations represent only approximations of true costs. In order to be entirely accurate, one would need to calculate present and future value of dollar amounts, include inflation, and predict major medical expense associated with the injury, if applicable. These calculations provide information about the advisability of treatment as well as provide insight into any potential settlement options.

How to Avoid Problems

The best advice for avoiding problems in the purchase of post-acute rehabilitative services is for the consumer to be well-educated about the intricacies of the service they are buying. Certainly, many of the issues presented herein represent an attempt to heighten awareness to some of those intricacies. There is additional information which can be useful in determining appropriate courses of action for rehabilitative services. It is important for the consumer to appreciate the usual sequelae of a no-treatment approach.

In general, patients who do not receive continued attention and treatment following hospital discharge undergo a course which spirals downward. The development of inappropriate behaviors can lead to secondary involvement with the law, locked psychiatric admission, family system disintegration, and/or the development of severe psychological and emotional problems.

Armed with this knowledge, a consumer can make an informed decision as to whether there is a short or long-term advantage to seeking or avoiding continued treatment.

It is generally accepted among rehabilitation professionals and involved families that brain-injured patients cannot be left to their own devices as a treatment alternative. Families are often ill-prepared to deal with the abrupt changes in behavior presented by the

injured family member, not to mention the tremendous shift in responsibility for other family members (Lezak, 1976). For example, it is difficult for parents with adult children to deal with and handle the inappropriate behaviors resulting from the brain injury. Consequently, behavioral deterioration occurs in many cases. It becomes very difficult for families to be able to gauge the nature of their interaction with the injured family member, frequently being overly or underly attentive to specific behaviors. It is in this manner that asocial behaviors are inadvertently reinforced by an unknowing family. Since long-term placement with the family usually represents the least expensive route, great care should be taken to preserve the integrity of this discharge option until both patient and family are prepared for it.

Early identification of brain-injured patients allows for early intervention on the part of a rehabilitation specialist or carrier. The goal should be to reach these patients and their families prior to discharge from the acute rehabilitation hospital. The rehabilitation specialist then becomes an integral force in initiating and obtaining an effective rehabilitation plan.

The rehabilitation specialist should become intimately familiar with the initial and long-term problems of this population. This enables the specialist to provide this information for families to assist them in making the very difficult, yet equally important, decisions about continuing care following acute hospitalization. Family members may become dependent upon the acute hospital staff involved in the care and treatment of their family member. As a result, they may or may not be objective enough to consider all that is necessary in choosing the next facility for the care of their family member. The rehabilitation specialist who has become involved in the case very early on may be identified as an advocate and slowly ease the family toward an informed decision by providing accurate and relevant information regarding the future treatment options and the need to be discriminating in discerning choice of treatment decisions.

Families are sometimes reluctant to allow care and treatment to continue after acute hospitalization. They may feel they are best equipped to provide the love and care needed and, at the same time, be unable to see the need for them to provide an appropriate rehabilitation environment. Additionally, families tend to choose local programs over more distant ones rather than make the choice on the basis of quality of care. The rehabilitation specialist can be of great assistance in shaping the family's expectations early in the recovery process and thereby be an important resource concerning treatment options for the patient. The rehabilitation specialist can be extremely valuable in making sound decisions about expert treatment facilities based upon personal experience with a number of facilities, check peer review references for a given facility, and personally evaluate the issues discussed herein to obtain an understanding of the intricacies of the facilities available.

Above all, it is very important to ensure that there is continued contact and monitoring of the treating facility's efforts and progress. The facility should welcome the involvement of a rehabilitation specialist, the family, and the consumer in all phases of treatment. There should be excellent information flow from the facility. Professional staff should be readily available and capable of answering any and all questions that arise about

a case in easy to understand terms for all parties. It should be expected that all parties will participate in defining criteria for success upon which the program will be founded and against which its efforts will be judged.

Conclusions

The pace of facility opening has outstripped the development of a technological standard of treatment as well as the development of professional expertise and understanding of the intricacies of the population being served. In the past decade, advances in medical and rehabilitative sciences have created a new field of study for many professionals in response to the emergence of a new population of brain-injured patients. As this population has captured the interest of a business community, a response in the form of new program designs and the opening of hundreds of facilities has been seen in an extremely compact period of time.

The consumer must educate him/herself regarding the intricacies of programming which have either a beneficial or detrimental impact on outcome and choose treatment facilities accordingly in order to maximize outcome potential for the patient, his family, and all other concerned parties. Great care must therefore be taken in the purchase of services in this sector. Many consumers are paying for services, yet are not realizing the benefits which might be obtained from more experienced and reputable sources.

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