

Reconsidering the Evaluation of Addiction Treatment: From Retrospective Follow-Up to Concurrent Recovery Monitoring

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ABSTRACT

Post-treatment follow-up studies were originally developed to evaluate the results of residential treatments for addiction, under the view that treatment was intended to produce “rehabilitation” that would continue well beyond treatment completion. Currently, addiction is more likely to be considered a chronic illness requiring continuing care, predominantly in outpatient settings. Consequently, post-treatment follow-up evaluations may be conceptually inappropriate; as well as slow and expensive.

This paper suggests an evaluation system for outpatient addiction treatments that retains patient-level, behavioral outcome measures in the four traditional outcome domains – substance use, personal health, social function and public health/safety. The difference is that these measures are collected immediately and continually throughout the course of treatment. We have called this paradigm *concurrent recovery monitoring*.

In a concurrent recovery monitoring system, the clinician is also the evaluator since the evaluation measures are also clinically important indicators of progress that can be used at the individual patient level for treatment planning and monitoring; but also at the aggregate level for evaluating treatment program and treatment system performance.

The paper discusses the implications of this conceptual and procedural change in evaluation; concluding that concurrent recovery monitoring evaluations would be less costly, provide more timely and clinically relevant information for providers, and lead to greater accountability for the payer and the public at large.

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INTRODUCTION

The Post-Treatment Follow-Up Evaluation Method - Post-treatment outcome evaluation has been the traditional method of assessing the performance and accountability of addiction treatments since the 1970's. Indeed, virtually all outcome evaluations of addiction treatments have contacted patients one or two times following discharge; to measure socially important behaviors such as return to drug use, employment and crime (See Armor, Polich and Stambul, 1976; Ball and Ross, 1991; Emrick, 1975; Simpson et al, 1997; 1999; Hubbard et al., 1989; McLellan et al, 1993a & b; Finney, Hahn and Moos, 1996; Gerstein and Harwood, 1990; Project MATC H, 1997). Proper execution of post-treatment follow-up requires substantial methodological sophistication, expense, and time (Moos, Finney and Cronkite, 1990; McLellan and Durell. 1995), but when done correctly offers a definitive answer to the question: "How long do positive changes last following discharge?"

Because post-treatment follow-up outcomes are by definition, collected months after completion of care, the eventual findings are only remotely related to the direct effects of the intervention. This is quite relevant to the public demands for greater accountability in drug abuse treatment. Providers have argued correctly that they cannot be held responsible for the status of a patient who has left their treatment program over half a year ago and has since been subjected to the significant but unpredictable forces of the environment to which s/he has returned.

Changes within the treatment delivery system have also reduced the value of post-treatment follow-up evaluations for assuring accountability and effectiveness in substance abuse treatment. Like most other parts of contemporary healthcare, the great majority of addiction treatment is now delivered in outpatient settings (SAMHSA, 2002, McKusick et al., 1998; McLellan, Carise and Kleber, 2003). This fact is important as it challenges the fundamental value of post-treatment follow-up information. In outpatient settings it cannot be assumed that patients are abstinent or even making progress during treatment, much less following discharge. Further, with so many patients being referred to treatment because of addiction-related problems such as crime, unemployment or infectious disease (See McLellan, Carise and Kleber, 2003) it is neither prudent nor socially accountable to delay evaluation efforts 6 months or more, beyond the end of a treatment episode. Indeed, the most appropriate evaluation questions for contemporary outpatient treatments are: "Are patients participating in treatment, reducing their

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drug use, improving their health and social function, and reducing threats to society?” These are some of the most important elements of the constellation of pro-social, healthy behaviors that has traditionally been called “recovery” within the addiction and mental health fields.

To respond to the changing treatment delivery scene, to the public’s need for more accountability and greater effectiveness; and to the practitioner’s need for more economical, rapid and clinically relevant information to guide decision making; this paper introduces the conceptual basis and methodological foundation of *concurrent recovery monitoring* (CRM). As will be described, we start with the same clinically and socially relevant patient behaviors that have traditionally been measured as “outcomes” following treatment discharge. As suggested, these measures have been the operational definitions for effectiveness and accountability in the substance abuse treatment field for over 30 years. However, because many cases of addiction require continuing care (See Anglin, Hser and Grella, 1997; Hser et al., 1997); and that care is now predominantly provided in outpatient settings, we argue that it no longer makes sense to wait several months after treatment completion to collect those outcomes. Instead, it is argued that these measures should be collected, reported and used regularly from the very beginning and throughout the course of outpatient addiction treatment. We refer to this as “*concurrent, recovery monitoring*” because it captures the traditional outcome measures that have come to define recovery; and because the monitoring occurs concurrent with ongoing treatment efforts. Because of the potential efficiency and added accountability that can be derived from CRM, it may enable an alignment of investigators, payers and providers through a common metric and language for improving care.

The paper is presented in four parts. The first part introduces and provides rationale for the domains suggested for measurement in a concurrent recovery monitoring system. Part two provides a more complete rationale for the suggested movement from traditional post treatment outcome evaluation to CRM. Part three discusses the methods that would be involved in concurrent recovery monitoring. Finally, the last part of the paper discusses some of the implications for treatment delivery, management and public accountability that derive from the proposed shift in evaluation perspectives and methods.

PART I - What are reasonable expectations for "effective" addiction treatments?

We have previously argued (McLellan and McKay, 1998; McLellan and Weisner, 1996) that the first step toward developing methods and systems to promote treatment effectiveness and

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accountability is to determine what those who use and support the addiction treatment system expect from it. What would make treatment valuable and worthwhile? Since addiction can affect many others beyond the identified patient; and since these “affected others” are often asked to contribute to the treatment of addiction, many different parts of society have legitimate expectations of addiction treatments. Here we briefly examine some of these expectations as a prelude to the discussion of suggested measures for evaluating the effectiveness of addiction treatments.

For the patient and particularly for the many treatment stakeholders in society, "effectiveness" of addiction treatment will be measured in large part by its ability to reduce the “addiction related” problems that often limit personal function in the patient, that may have been costly to the health care system and/or may have become a public health concern to society (See McLellan and McKay, 1998; McLellan and Weisner, 1996). Typically, the immediate goal of reducing alcohol and drug use is necessary, but rarely sufficient, for the achievement of the longer-term goals of improved personal health and social function; and reduced threats to public health and safety – ie. recovery. It follows then that four outcome domains are suggested as relevant to both the patient and to society:

- 1 – Sustained reduction in alcohol and drug use.** This is the foremost goal of all substance abuse treatments and success in this area may set the stage for other improvements.
- 2 – Sustained increases in personal health.** Improvements in medical and psychiatric health are important quality of life indicators for the patient and are associated with reductions in inappropriate utilization of the healthcare system (e.g. ER use).
- 3 - Sustained improvements in social function.** Improvements in employment and parenting are important from a societal perspective but are also related to prevention of relapse.
- 4 – Sustained reductions in threats to public health and safety.** The threats to public health and safety from substance abusing individuals come from behaviors that spread infectious diseases and from behaviors associated with personal and property crimes.

Two points require emphasis. First, it should be noted that much of what is expected of addiction treatment is also expected of treatments for other illnesses. Reductions in the primary symptoms (alcohol and drug use) and improved personal health and social function, the first three evaluation domains, are virtually identical with the "primary and secondary measures of

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effectiveness" typically used by the Food and Drug Administration to evaluate new drug or device in controlled clinical trials (See FDA, 1980). In these respects, the evaluation of addiction treatments is conceptually consonant with the mainstream of thought regarding the evaluation of other forms of health care (Stewart and Ware, 1989). The final outcome domain, public health and safety is not as common in general health care but is pertinent to the evaluation of infectious diseases such as SARS, cholera, or sexually transmitted diseases.

Second, most of the social expectations of the stakeholders are reasonably consonant with the personal goals of most affected patients; and with the clinical goals of most addiction treatment programs. The majority of patients and programs can agree that stopping substance use, getting/keeping a job and eliminating crime are legitimate, achievable goals. This means that treatment providers should be willing to accept responsibility for achieving and maintaining these goals in their patients – at least during active treatment. This is quite important since it may serve as a legitimate basis for accountability. Indeed, if patients and programs cannot be expected to achieve these goals, even during treatment, it is reasonable to question the value of treatment for either the patient or society.

Part II – Changes in Addiction Treatment Concept and Delivery

Traditional Concepts of Addiction Treatment and Outcome Evaluation - For the past 30 years most of the societal expectations regarding substance abuse treatment revolved around a very simple, “rehabilitation-oriented” model. At various times over these years, addiction has been conceptualized as a disease, a bad habit or a sin (Musto, 1973). Despite significant differences among these perspectives, all shared the view that some finite amount, duration and/or intensity of therapies, medications and services should be adequate to cause a patient to “learn his lesson,” “achieve insight,” and especially, “change his ways.” The explicit expectation has been that once the patient had achieved that insight or learned that lesson, s/he would be ready for discharge from treatment and expected to continue as recovered, for a substantial period of time – at least six to twelve months.

While some readers may view this as an extreme presentation of the rehabilitation position, the methods used to evaluate the effectiveness of addiction treatment offer no other interpretation. Indeed, the expectation that benefits should be attained during treatment and sustained following treatment, is clearly evident by the universally applied convention of evaluating the outcomes of treatment through measurement of patient performance 6 – 12 (or

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more) months following treatment discharge (See Gossop et al., 2001; Simpson et al, 1997; 1999; Hubbard et al., 1989; McLellan et al, 1993a & b; Finney, Hahn and Moos, 1996; Gerstein and Harwood, 1990; Project MATCH, 1997).

Given the expectations for sustained improvements in the four evaluation domains, it is understandable why the public has been generally disappointed with addiction treatments. In fact, most alcohol and drug dependent patients relapse following cessation of treatment (See Miller and Hester, 1986; McLellan, 2002; Institute of Medicine, 1998). In general about 50 - 60% of patients begin re-using within six months following treatment cessation, regardless of the type of discharge, the patient characteristics or the particular substance(s) of abuse (Hunt, Barnett and Branch, 1971; Institute of Medicine, 1998; McKay et al., 1999; 2004; McLellan, 2002). Of course one inescapable interpretation of this statistic is that the available treatments are ineffective.

Conceptual Changes Regarding Addiction and Addiction Treatment - Over the past decade researchers have looked to other areas of medicine and health to explain why addictive disorders have seemed so resistant to treatment. Reviews of treatments for chronic illnesses such as hypertension, diabetes and asthma were initiated to examine whether methods used in the treatment of those diseases might provide insights in the treatment of addiction (See O'Brien and McLellan, 1999; McLellan et al., 2000). While the similarities between addiction and other chronic illnesses can be debated, there is no doubt that alcohol and drug addiction are quite different in the ways they are treated and evaluated. Specifically, treatments for hypertension, diabetes and asthma are not time-limited, nor do they employ fixed amounts or intensities of medications or services. This is because there is wide acceptance of the fact that there are no cures for these conditions. Instead, treatments for these conditions are continuing, with the intensity of monitoring and service provision modulated by the severity of the symptoms present (See Wagner, Austin and VanKorff, 1996; Bodenheimer, Wagner and Grumbach, 2002). Evaluators charged with determining the effectiveness of these interventions do evaluate patients' illness symptoms, general health and social function, but only during the course of the treatment, since discharge from treatment is expected to produce relapse in the great majority of cases.

It is important to stress that not all cases of alcohol or other drug use disorder are chronic. Many, individuals are able to function very well with little or no treatment (See Sobell et al.,

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1996; Toneatto et al., 1999; Winick, 1962; Orleans et al., 1991). Nonetheless, there are well publicized relapse rates following self-initiated and treatment-assisted attempts to control addiction (See Miller and Baca, 1983; Robins, 1993; Lichtenstein et al., 1996) and many to most of the cases of addiction that are treated in specialty sector programs have not been able to show sustained improvements following cessation of treatment (See SAMHSA, 2002). If those individuals have a chronic form of addiction, then significant improvements in the substance use, health and social function for them should only be expected while they are in treatment. It may therefore be quite predictable that cessation of addiction treatment for these patients would lead to relapse; just as the cessation of treatments for hypertension, diabetes, schizophrenia or asthma would be expected to produce relapse (See Hser et al., 1997; McLellan et al., 2000; O'Brien and McLellan, 1999; McLellan 2002).

Changes in the Addiction Treatment Delivery System – Beyond changes in the concept of addiction, there have also been changes over the past fifteen years in the way addiction treatment is delivered (See Horgan et al., 2001). Specifically, there has been a significant movement from treatment in primarily residential settings to predominantly outpatient care. As recently as the past decade, over 60% of substance abuse treatments were delivered in some form of residential (hospital or non-hospital) care (See SAMHSA, 1997). By 1996 about 60% of addiction treatment programs were outpatient (SAMHSA, 1997; McKusick et al., 1998) and by 2002, more than 85% of all substance abuse treatment was provided in an outpatient setting (SAMHSA, 2002).

As discussed in the opening paragraphs, this shift toward outpatient treatment is quite important for the concept and conduct of evaluations because the evaluation questions for residential and outpatient treatments are quite different. The fact that treatment is often in lieu of punishments such as incarceration, job loss or reduction of welfare benefits brings even greater attention to the during-treatment performance of these coerced patients. In this context, it is worth noting, that most of the major referral systems (e.g. corrections, welfare, employment, mental health) also take a continuing care approach to addressing their target problems – only addiction treatment has been expected to resolve the target problem in a finite (short) time frame.

Part III – Concept, Methods and Rationale for Performance Monitoring

We now introduce what we call concurrent recovery monitoring (CRM) as a concept and as a method. We have chosen this term because the measures to be suggested capture much of

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what has traditionally been called recovery; and because the measures to be suggested are designed to be collected and used for real-time monitoring of patient symptoms and functional status, concurrent with treatment delivery. This model is also purposely quite similar to disease management paradigms that are widely used in other areas of contemporary health care (See Wagner, Austin and Von Korff, 1996).

The heart of the argument for concurrent recovery monitoring is that the evaluation domains are measurable through clinically relevant patient behaviors; that those behaviors should be the focus of ongoing treatment efforts; and that timely information about those behaviors is essential for clinical management and decision making – at the individual patient level. In this regard, CRM is fundamentally different from other approaches to the evaluation of addiction treatment. Unlike traditional post-treatment outcome evaluations the “evaluator” in a CRM system is not an external researcher – but is instead the treating clinician or practitioner. This is because CRM is primarily designed to provide clinically relevant information for managing individual patients. Of course, the concept of clinician as evaluator introduces issues of bias and there will need to be independent auditing. This is discussed later in the paper. Though not a trivial consideration, it is argued that most of the performance measures are subject to external validation.

CRM is also different from more recent “performance monitoring” forms of evaluation such as the continuous quality improvement (CQI) paradigms, used by industry to enhance the efficiency and quality of products or services (See Deming, 1952; JCAHO, 2002). CQI procedures also advocate use of repeated, real-time data but the focus has been on processes of the treatment delivery process (e.g. waiting time for appointments, linkage between stages of care) and patient satisfaction; measured at the level of the care provider (e.g. the counselor, program or system). In contrast, the CRM approach focuses upon traditional behavioral outcomes because those measures are most important to the patient, the payer and society. Further, these are measured repeatedly on individual patients as they proceed through treatment. Of course data from individual patients may be consolidated to estimate provider (e.g. counselor, program or system) effectiveness; and to measure relationships with other provider-level performance measures (e.g. JCAHO, GPRA). Put differently, concurrent recovery monitoring may be a way of consolidating the shared information interests of the patient, the clinician and society around a central measurement/reporting process.

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Measuring the Traditional Outcome Domains - We see concurrent recovery monitoring as the blending of the measurement domains from traditional post-treatment outcome evaluation with the measurement practices of Continuous Quality Improvement (See Deming, 1952; JCAHO, 2002; McGlynn, 1998). Importantly, we suggest that the measures (indicators) used in performance monitoring systems should be drawn from those used previously in post-treatment outcome studies. These measures provide continuity with that literature and most can be collected reliably and validly.

We recognize that we have only suggested the broad evaluation domains to be measured in CRM – not the specific items or elements that would be measured within each domain. For example, we have purposely not discussed whether drug testing should be the measure within the substance use domain. Additional questions here would be whether that testing should be urine, saliva, perspiration or hair; whether self reported use should be included; what frequency should these measures be collected; or what clinical and administrative procedures should be instituted to deal with the drug testing results. The same kinds of questions can and should be raised regarding the specific measures in each of the other three evaluation domains suggested. These are not trivial details and we feel they merit a separate and detailed discussion. Our effort here is to present the conceptual basis for concurrent recovery monitoring and we have deferred discussion of several important methodological issues in the service of this effort.

Focus on Outpatient Treatment – It is important to stress that we have restricted our discussions of CRM *exclusively to outpatient addiction treatment*. The performance measures suggested here are not appropriate for detoxification treatments or for residential rehabilitation treatments. The proposed monitoring system assumes 1) an ongoing relationship between the patient and the provider or clinician; and 2) that the patient will not be confined during treatment and will thus be capable of exhibiting both positive and negative behaviors. Neither of these conditions is true for time-limited, detoxification or residential rehabilitation programs.

Indeed, it has been argued that one major goal for all inpatient or residential treatment is to prepare the patient for; and engage the patient into appropriate outpatient continuing care (See JCAHO, 2002; NCQA, 2000; Garnick et al., 2002). In this regard, “engagement in continuing outpatient care” has been suggested as a central evaluation measure for these types of care (See NCQA, 2000; Garnick et al., 2002).

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Validating the Integrity of Concurrent Recovery Monitoring Systems - There will be understandable concerns regarding the integrity of the CRM or any other evaluation system. Though all evaluation and monitoring efforts are subject to efforts to circumvent or “game” the system, we believe that the data and methods proposed will be subject to outside audits and validation, much the way contemporary healthcare records are currently audited by payers, regulators and evaluators.

At the individual patient level, validation of self-reports for many measures may be accomplished relatively easily. Admission and attendance are matters of administrative record at all programs. Some other validation information may be checked on a monthly basis. For example, pay stubs may serve to validate employment; receipts or vouchers may confirm use of welfare/TANF services, homeless shelters and emergency rooms. Other indicators are more difficult to validate – at least immediately. At the system level, auditors can check public records regarding arrest, incarceration and welfare records through the internet in most states.

We recognize that these are not trivial considerations and that important procedural safeguards will not be easy to develop, nor will they function perfectly once they are developed. We do believe that the challenges (e.g. information systems compatibility, lag time in processing public records, HIPPA regulations, etc.) are possible to overcome. Indeed, without detracting from the importance of this argument, it must be remembered that the current evaluation efforts are far from perfect. Even under circumstances where evaluations are applied with great integrity, they have not provided the information that is possible from the proposed system. Thus, despite the problems inherent in moving toward a verifiable performance monitoring system, we believe the potential value of that system would justify the effort.

Part IV – Initiating and Using the CRM Approach to Improve Treatment Effectiveness

The ultimate goals of the proposed system are the improvement of care for the patient and better results for society. *It must be emphasized that a simple change in evaluation methods, without corresponding change in traditional treatment methods, cannot be expected to achieve better performance.* The proposed evaluation strategy is suggested as a way of focusing attention on the during-treatment time frame, and on those patient behaviors that are most socially and clinically valuable. We believe that such a focus within most contemporary outpatient treatments will show that there is room for much improvement (See for example Cunningham et al., 1993).

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For example, it is well known that early drop out rates from outpatient alcohol and drug abuse treatment programs can be as high as 50% within one month following admission (See Alterman et al., 1996; Kang et al., 1991). Indeed, even court ordered patients drop out of treatment although they may face incarceration (Goldkamp, 2000; Taxman, 1999). Thus, we suggest that along with the previously described evaluation domains and measures, it will be essential to measure patient attendance and participation in treatment, as this is a necessary first step toward the goals of treatment effectiveness. By extension, we believe that an early result of instituting the proposed CRM system will be the implementation of more attractive, engaging treatments designed to retain patients in active participation.

It is beyond the scope of this paper to discuss the administrative and clinical methods that might be employed to these ends but some obvious options may be derived from common sense and the growing body of clinical research in this area. From a common sense perspective it is reasonable to consider extending the hours of operation in a treatment program to engage those who have work or care-taking obligations during the day. Similarly, offering care at sites closer to public transportation or parking; and in clean, well-lit buildings can be expected to improve engagement. From a research perspective, Motivational Enhancement Therapies (MET) (See Miller and Rollnick, 1991) can significantly improve readiness for change and initial engagement. Voucher reinforcement studies (See Higgins et al., 1993; 1994; Silverman et al., 1996; 1999) have only begun to harness the power of positive reinforcement in engaging patient interest and changing attendance and reducing drug use. We argue that even the availability of more than one treatment option for patients (e.g. medications, therapies, services) may set a context in which early unfavorable response leads to change in strategy – not simply to drop out (See for example Miller and Rollnick, 1991; DiClemente et al., 2001; McKay, 2001).

Pre-Determined Behavioral Targets and “Adaptive Treatment Protocols” – One significant change in outpatient treatment delivery that may be expected from a concurrent recovery monitoring system is the development of clinically important, measurable behavioral targets for the patient; and for the treatment provider. For example, in the treatment of hypertension, one agreed upon clinical target is a blood pressure reading of 140/90. In outpatient addiction treatment one target might be a negative urine screen; and then later, three in a row.

Adaptive protocols use information on the progress of a patient toward a pre-specified target, as a basis for “adapting” the treatment regimen (See Collins, Murphy and Bierman, 2004;

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Lavori, Dawson and Rush, 2000). To return to the hypertension treatment example, failure to achieve 140/90 after three weeks on a prescribed medication would be a decision threshold for either change of the medication or adding a supplemental medication (See Davis et al., 1996). In the case of outpatient treatment for cocaine dependence, failure to achieve a cocaine-negative urine screen after four weeks of once-weekly counseling might be a decision threshold to increase the counseling frequency, to refer to a residential unit for stabilization, or to seek a consult with a family member to increase social support for abstinence.

These examples illustrate that the regular collection of valid, information on patient progress toward pre-defined targets during treatment is a necessary step in developing and improving adaptive treatment protocols (Collins, Murphy and Bierman, 2003; Lavori, Dawson and Rush, 2000; Thall and Sung, 2000; Murphy). Of course, most good clinicians routinely make changes in their approach when patients are doing poorly. However, changes to the treatment are usually not guided by carefully developed protocols that specify the behavior to be monitored, the criteria for considering a change, or the new approach that will be implemented when change is indicated. A true adaptive clinical protocol provides a clear decision tree that can be utilized by other clinicians to make decisions regarding changes in clinical care over time. For example, an adaptive protocol might specify a different clinical intervention for a patient who reports a relapse to his counselor and then gives a positive urine, than for another patient who denies any use but gives a positive urine.

Extending the Length and Reducing the Intensity of Treatment – the Role of Monitoring – Although we and others (See Simpson, Joe and Brown, 1997) have argued for the importance of a continuing care approach to addiction treatment, this explicitly does not mean that existing treatments should simply be delivered for longer periods (See Humphreys and Tucker, 2002; Breslin et al., 1997). While the development of more treatment options (medications, therapies, services) may be important for better patient engagement in the early phases of outpatient treatment, there will likely be a need for more innovative options at the distal ends of outpatient treatment. Indeed, contemporary addiction treatment simply has not employed (nor been reimbursed for) effective monitoring and low-intensity, continuing care.

Specifically, for patients who have achieved targeted behavioral goals, there may not be a need for weekly, in-person therapy – but instead, that patient might profit most from less frequent supportive counseling – perhaps by telephone - designed to encourage the positive

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gains achieved and to monitor for early threats to the maintenance of those gains. We return to our example of hypertension care, to illustrate the concept of continuing care and monitoring. Consider a patient who first appears at a hospital in hypertensive crisis. The hospital would be charged with the very intensive care required for stabilizing that patient and regaining adequate health to permit transfer to a primary care physician. The primary care physician and other members of the care team would set a goal of achieving a stable 140/90 blood pressure (as well as several other pre-defined behavioral targets) and would likely see the patient weekly until some combination of medication, diet, exercise and stress management achieved that goal. At that point there would be a transition to fewer office visits (perhaps monthly then bi-monthly) to measure the target goal, with intermediate structured phone calls by a nurse or other member of the care team, to support weight loss and stress reduction regimens, to check for medication adherence and to assess whether there are any pending problems that could compromise the improved status.

The most viable continuing care component currently operating in addiction treatment is community mutual help groups such as AA, NA and CA. Indeed, AA is a free, effective model for progress-sustaining peer-support (See McLatchie and Lomp, 1988; Morgenstern et al., 2001, Ouimette, Moos and Finney, 1998; Humphreys, 2003; Humphreys, Moos and Finney, 1995; Tonigan, Toscova and Miller, 1996) and this community peer-support model is being replicated with patients in treatment for other diseases (See Sadur et al, 1999; Bailey et al., 1990). At the same time, these 12-step fellowships are not attractive to everyone. Only about 25% of those referred to AA continue to participate for one year (See Koski-Jannes and Cunningham, 2001; Morgenstern et al., 2001). It is possible that the systematic use of the recently developed 12-step facilitation therapy (See Project MATCH, 1997) will improve the proportion of outpatients who engage in this form of continuing care. Nonetheless, it is also clear that there is a need for additional, low-intensity continuing care and monitoring options – as an alternative or supplement to AA.

In this regard, there is indication from the work of Stout and others, that even brief telephone calls can have significant effects in maintaining the gains achieved during treatment and forestalling relapse (See Lichtenstein et al., 1996; McKay et al, 2004; Stout et al., 1999; Orleans et al., 1991). The availability of better communication through cell phones, pagers and internet offer as yet untapped opportunities for developing low-cost, non-intrusive, yet effective

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means of sustaining the gains made during the early phases of outpatient care and for alerting clinical teams when there are threats to those gains. Indeed, at some point in the distal end of the continuum of care, the evaluation and monitoring may actually be the “treatment” (See Sobell and Sobell, 1980; Stout et al., 1999; Orleans et al., 1991). Again, the description and analysis of these options are beyond the scope of the present paper but they promise to be important parts of a new approach to outpatient addiction treatment that we believe will become evident as evaluation methods move to a during-treatment, recovery focus.

Gradual Initiation of the CRM Approach - We recognize that most treatment systems could not immediately initiate concurrent recovery monitoring with a full set of clinically relevant targets representing all four evaluation domains. For one thing there are likely to be daunting management issues associated with the creation of a functioning management information system capable of collecting and reporting the recovery indicators in a practical and rapid fashion. Moreover, to integrate these measures into existing treatment settings will likely take significant time and management. For these reasons it seems prudent to initiate concurrent recovery monitoring with only a few indicators and to avoid at least temporarily, the more daunting audit problems in order to build acceptance for the general evaluation approach. As information processing systems become streamlined, data collection and processing regimens get systematized and clinical procedures get developed to improve performance on the initial indicators, it will be possible to introduce additional indicators into the system.

DISCUSSION

To address the continuing need for more accountability in the substance abuse treatment field, this paper has suggested a blending of the clinically and socially relevant patient behaviors used in traditional post-treatment *outcome evaluation* – with the efficient and repeated measurement procedures used in contemporary *continuous quality improvement* systems. Instead of having evaluators perform one or two, follow-up interviews with patients, six to twelve months following their discharge from addiction treatment we have suggested that clinical personnel collect and utilize a subset of these same behavioral outcome measures, regularly during the course of outpatient treatment. We have called this paradigm *concurrent recovery monitoring* and have suggested that it be implemented and reimbursed as part of standard outpatient treatment of addiction.

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Limitations - One of the important limitations of this paper is that it lacks (purposely) a discussion of the clinical management methods to be used in association with the suggested CRM approach. This is of course a critical topic, one that deserves significant empirical research. The inappropriate or punitive use of the suggested CRM system (or any other evaluation system) could be destructive to the already fragile addiction treatment system. We have seen the legitimate concepts of “coordinated care management” and the prevention of “medically unnecessary care” which spawned the managed care industry, become lost in an overriding effort to reduce costs (See Fox, Oss and Jardine, 2000; MEDSTAT group, 2001).

Similarly, while we believe there is merit to our arguments and technical feasibility to the general concepts we have proposed, we have not discussed the specific measures that should represent each of the evaluation domains (substance use, personal and social function and public health and safety), nor have we discussed the specific procedures that would introduce, develop and sustain the proposed system. These purposeful omissions are in part due to our desire to focus here on the conceptual basis for the system; but also because many of these important specific features are not known. Indeed, it will be essential to develop health services research efforts to harness the best of the concepts and methods proposed here.

Evaluation Implications of Concurrent Recovery Monitoring - While the changes in evaluation methods suggested in our paradigm are certainly not novel, we believe there are significant positive implications for the addiction treatment system from adopting a version of that system. On conceptual grounds, we take the position that there are no reliable cures for many of the chronically addicted patients treated in contemporary treatment programs (though many patients have long un-treated periods without relapse); and that most patients are at risk of relapse if they are not monitored, supported and participating in some form of treatment (here we include AA and private therapy). From this position it follows that one appropriate goal of outpatient addiction treatment is the continued monitoring and maintenance of pro-social, healthy behaviors (ie. recovery) for extended periods. Research may some day determine the duration of abstinence and pro-social function during treatment that reliably predicts sustained remission of the illness without additional treatment. At present, this is not known (See DSM IV discussion of this topic; APA, 1994) and it remains true that most addicted patients are at heightened risk of relapse if they are not monitored, supported and participating in some form of

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treatment (See Finney et al.,1996; Ouimette et al., 1998; Humphreys and Tucker, 2002; McKay et al., 1997; 1999; 2001).

From the perspective of the various health and social agencies that so regularly refer substance abusing patients to treatment (See McLellan and Weisner, 1996), the suggested enhancement in the frequency and focus of monitoring during outpatient treatment should be appealing and consonant with the demand for greater accountability. In addition, we believe the suggested move toward during-treatment monitoring has obvious value for clinical management. In the absence of regular information about patient performance it is not possible to provide meaningful clinical supervision and direction. The availability of regular clinically relevant patient-level information through management information systems will set the stage for the development of new, data-oriented, adaptive clinical practices (See Thall, Millikan and Sung, 2000; Collins, Murphy and Bierman, 2003; Murphy, 2003) and ultimately for improved care. This will be an important area for future clinical and health services research.

A second important implication from the suggested CRM approach is that treatment programs should be willing and able to be accountable for the suggested patient goals *during the course of treatment*. Treatment programs have argued repeatedly - and we think validly - that it is not possible for them to be responsible for the behaviors of their patients six to twelve months beyond the discharge point. If clinically sensible and achievable behavioral targets can be negotiated; and it is possible to rapidly and validly measure patient performance toward those targets; it is then reasonable to hold the treatment providers – and the patients - accountable for the expected changes, at least during the period of time in which the treatment is provided.

Clinical Implications of Concurrent Recovery Monitoring An important and exciting implication of the shift in evaluation from post treatment to during treatment is that it should focus clinical attention on the important aspects of care – the patient behaviors which are the targets of change and the treatment components (medications, therapies, services) that are expected to change those behaviors. We have stressed that merely changing the way addiction treatment is evaluated should not be expected to produce the desired system-level improvements in effectiveness and accountability. Indeed, we believe there is need for substantial change in the way outpatient addiction treatment is delivered and reimbursed. Which of the new evidenced-based medications, therapies and services will work for an individual patient in a specific set of circumstances and at a particular point in the continuum of care are still open

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questions. However, the contribution of regular, relevant reports on patient performance should enable clinicians to address these questions and to begin to systematize their clinical approach.

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