Managing a community mental health agency: A Theory of Constraints based framework

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The Theory of Constraints (TOC) is a powerful new management philosophy that recognizes system constraints limit the performance of a system and proposes a set of concepts to manage the constraints. TOC management philosophy (i) suggests the goal of an organization is to make money without violating certain necessary conditions such as customer satisfaction and employee satisfaction and security; (ii) proposes three performance measures: throughput, inventory, and operating expenses; and (iii) improves the process by focusing improvement efforts on its weakest link or constraint. Although originally developed for manufacturing operations, TOC appears to be equally applicable to service operations, including health delivery systems such as Community Mental Health Centres (CMHCs). In this article, we report on a TOC-based operations analysis of a Chemical Dependency (CD) unit within a Midwest community mental health system and implementation of recommended changes. TOC performance measures encourage finding innovative ways of increasing throughput and reducing inventory instead of simply cutting or containing costs for the CD Unit. The TOC-based improvement process, using the Five Focusing Steps, reveals multiple physical and policy constraints within both the CD Unit and the agency as a whole. Based upon this analysis, we offer specific recommendations that should significantly improve resource utilization, revenues, patient care, and employee satisfaction. Most of these recommendations require little or no net costs to implement. By using the TOC approach outlined in this article, other CMHCs and health delivery systems can realize similar benefits.

Keywords: continuous improvement process; Theory of Constraints; performance measures; Five Focusing Steps

Introduction

Community Mental Health Centres (CMHCs) provide outpatient services, including adult Chemical Dependency treatment, for indigent, Medicaid, and Medicare patients. CMHCs are financially dependent on federal, state, and local government programs and grants as well as typically small patient co-payments. Like other non-profit agencies dependent on such
funding sources, CMHC revenues barely cover program expenses. To cope with this problem, CMHCs can reduce costs, improve the efficiency of operations and the utilization of resources, or find new sources of revenue.

CMHCs are typically headed by clinicians with no formal business training who frequently use an ‘intuitive’ approach to the business of healthcare, an approach that relies heavily on cost reduction. In their attempt to trim perceived excesses at every level, managers closely monitor local efficiencies and continually ask their personnel to ‘do more with less.’

Goldratt’s Theory of Constraints (TOC) is an operations management philosophy that offers distinct advantages to CMHCs frustrated by the failure of cost containment and resource optimization. In this article, we demonstrate the applicability of the Theory of Constraints to an outpatient Chemical Dependency (CD) unit in a Midwestern CMHC. For the purposes of this paper, we have changed the name of the agency to SouthEnd Community Care. With an annual budget of $17.4 million, SouthEnd offers a wide range of outpatient mental health programs, including an active Chemical Dependency (CD) Program, to the residents of eight counties. Psychiatrists, psychologists, and clinical social workers with special expertise in the evaluation and treatment of substance abuse disorders and clinical support personnel staff the CD program. The most active CD Unit in the agency, the subject of this operations analysis, had 234 open cases as of March 31, 2000, and a projected Fiscal Year 2000 budget of almost $295,000. The unit-level analysis of SouthEnd provides important insights into system-level problems faced by CMHCs and other healthcare systems. These insights form the basis for a series of recommended changes applicable to both unit- and system-level operations.

We begin with a brief overview of TOC concepts and relate them to the CD Unit of a CMHC. We answer the following questions. What is the Theory of Constraints? What should be the goal of a CMHC? What are the TOC-based operational measures appropriate to assess successful attainment of the goal? How can TOC’s Five Focusing Steps be employed to analyze and improve the operations of both the CD Unit and the CMHC system as a whole? We conclude this paper with suggestions to employ TOC’s formal thinking processes, an eloquent and logical stepwise process for uncovering policy constraints, the most prevalent one found in the CD Unit, and discovering solutions.

An overview of the Theory of Constraints

The Theory of Constraints is a relatively new and evolving management philosophy that seeks to improve the operations of a system by focusing improvement efforts on the weakest links or constraints of the system. Constraints may be physical (equipment, facilities, or other resources such as personnel) or they could be policies (rules, regulations, or measurements). Generally, physical constraints are the manifestation of the policy constraints. TOC recognizes that system constraints limit the performance of a system and consequently proposes a set of principles and concepts to manage the constraints. Although many of the basic concepts of TOC have not changed since its inception in the late 1970s, a deeper understanding and elaboration of the concepts has emerged over time in the work of both Goldratt and others. TOC-based management philosophy focuses on change at three levels (3Ms): the mindset of the organization, the measures that drive the organization and the methods employed within the organization (Srikanth & Robertson, 1995; Boyd & Gupta, 2004).
Mindset – what is the system’s global goal?

According to the Theory of Constraints, the ultimate goal of an organization is to make money now and in the future. TOC argues that this goal is the same for all organizations regardless of their for-profit or non-profit status, except the former must make sufficient money to post a profit. Equally important to the goal are two necessary conditions that must be satisfied for the goal to become a reality. The organization must provide a secure and satisfying environment for staff now and in the future, and it must satisfy its customers (patients) now and in the future.

A CMHC’s goal is twofold. The financial goal is to make the money required to run programs now and in the future while satisfying patients and providing satisfaction and security for the professional and clinical support staff now and in the future. The clinical goal is to provide patients with high-quality clinical care. Attainment of the financial goal provides for the realization of the clinical goal. Both are possible without incessant cost cutting and optimizing efficiencies across the system – two actions that seriously jeopardize the financial and clinical goals as well as employee morale and job satisfaction.

Measurements – how should the performance of a system be measured?

Generally speaking, financial statements (e.g. Income Statement and Balance Sheet) are evaluated and financial measures (e.g. Net Profit (NP), Return-On-Investment (ROI) and Cash Flows (CF)) are used to determine the extent to which an organization is achieving its goal. These measures are useful for external purposes (e.g. taxation etc) at the executive level in for-profit organizations. They are not helpful for internal purposes at the medium to lower management level (i.e. managers and other staff members) where managers must determine whether their decisions and actions will be profitable.

The TOC proposes a simplified set of operational measures: Throughput, Inventory, and Operating Expenses. These measures help managers evaluate the effects that individual decisions made in their subsystems have upon system level performance (Goldratt, 1984, 1990).

Throughput ($T$) is the rate at which the system generates money through sales (or patient care). In simple terms, Throughput represents money coming into the system. In a CMHC, Throughput is the reimbursements from third-party payers and patient co-payments.

Inventory ($I$) is all the money that the system has invested in purchasing things the system intends to sell (or provide to patients). In simple terms, Inventory represents the money stuck inside the system. In a CMHC, Inventory is all the money currently tied up in the system (e.g. computers, furniture, buildings and other sellable assets). From an operations perspective, patients waiting to be seen or in the process of being served represent work-in-process inventory, although an inventory so defined does not translate explicitly into financial measures.

Operations Expenses ($OE$) are all the money that the system spends in order to turn inventory into throughput. In simple terms, OE represents money going out of the system. In a CMHC, OE includes expenses such as wages, salaries, rent, and utility expenses. Figure 1 depicts important relationships among these operational and financial measures. It shows that $NP = T - OE$ and $ROI = (T - OE)/I$.

The TOC methodology, discussed next, to operations analysis and process improvement stresses ‘throughput world thinking’ initiatives such as exploring new markets, introducing/ modifying new products or simply selling more of existing products/services instead of focusing on reducing costs or saving money, referred to as cost-world thinking, which invariably violates the necessary conditions of customer and employee satisfaction.
Methodology – how can the system be continuously improved?

TOC-based process improvement methodology primarily consists of Five Focusing Steps (FFS) for identifying and managing the system constraints. To begin the FFS process, first determine the constraint (Identify). Then, attempt to maximize the efficiency of the constraint without incurring any expense or using other resources (Exploit). Next, utilize non-constraint activities whenever possible (Subordinate). If these actions fail to break the constraint, purchase additional capacity for the constraint (Elevate) to further increase the Throughput. Finally, decide if system output is satisfactory. If not, then repeat the process (Return to Step One) and identify the new constraint.

This improvement process acknowledges two phenomena: Dependent Events and Statistical Fluctuations. Most production and service systems, including CMHCs, consist of a sequence of several dependent events (or activities or processes), and many statistical fluctuations may occur at any process. Figure 2 demonstrates that the operational flow of patients in the CD Unit consists of a sequence of dependent processes. The treatment process begins with the initial call by the patient to the SouthEnd Access unit, which determines the CMHC’s clinical program most appropriate for the patient. The Access unit then schedules an Intake appointment, the beginning of the evaluation and treatment process. The Intake appointment, where the therapist does a psychosocial evaluation, is followed by regular therapy sessions. Substance abusers frequently have comorbid psychiatric disorders that require medication treatment. The therapist refers these patients to the Unit’s psychiatrist for formal psychiatric evaluation. If the psychiatrist determines that medication would benefit the patient, he or she initiates treatment and follows up with medication visits concurrent with the patient’s ongoing therapy. Patient flow in the CD unit is typical of most units within CMHCs. The patient first checks in with the receptionist, who notifies his or her clinician. Next, the clinician escorts the patient from the waiting room to the clinician’s office. After the visit, the patient returns to the waiting room and remits payments to the clinical support staff.

Statistical fluctuations occur in any service process and for a number of reasons. For example, patients may miss or be late for appointments, or the psychiatrist may have an emergency that puts him or her behind schedule. The only predictable thing about statistical fluctuations is that they inevitably occur. Whenever statistical fluctuations occur, they interrupt or slow flow through the service process and catching up becomes necessary. However, if resources are already stretched to their limits, a situation resulting from cost cutting, then catching up is difficult. When dependent events combine with statistical fluctuations, effects accumulate downstream from the statistical fluctuation.

A system in which all activities have equal capacities is termed a balanced system – a system where every activity is a potential constraint. According to TOC, such systems are very difficult
to manage because of inter-dependencies and statistical fluctuations. In a typical business situation, a constraint is located at a strategic activity (generally the most expensive). At SouthEnd, management closely monitors clinicians and clinical support for local efficiencies. The result is a balanced system, in which each resource operates at or very near its capacity. Our analysis determines every activity (psychiatrist, therapists, and clinical support) to be a constraint, which poses a very challenging process-improvement problem for management.

**Applying TOC – mindset, measures, methodology**

In this section, we analyze the operations of SouthEnd’s Chemical Dependency Unit using TOC-based FFS methodology and make specific initial recommendations to achieve the Unit’s goal in terms of TOC-based measures.

Intakes, Psychosocial Evaluations, Therapy, and Terminations are performed by PhD and MA psychologists on the Unit. Psychiatric Evaluations and Medication Visits are conducted by the Unit Psychiatrist concurrent with the Intake, Psychosocial Evaluation, or ongoing therapy. Termination, the closure of services, is not a billable service.

![Patient flow chart for the CD unit.](image-url)

Access is the central point of entry into the SouthEnd system. Incoming patients are given intake appointments for the SouthEnd unit most appropriate for their needs and in the county in which they reside.
Step 1: Identify the constraint(s)

Constraints are frequently easy to identify by the piles of inventory that await processing by a particular activity. In the service industry, wait times are the clues. The activity with the greatest wait time is the constraint. The only patient wait times that exist in the CD Unit are for Intake appointments (two to three weeks) and for Psychiatric Evaluations (three to four weeks). Therefore, the constraints in the system are the psychiatrist primarily and the therapists secondarily.

The constraint in a system should ideally be its most valuable or most expensive resource. In the case of SouthEnd, however, formulation of strategies to subordinate the two constraints revealed the clinical support function operated with inadequate capacity. If the Unit undertakes measures to break all three constraints by increasing their respective capacities, Throughput for the Unit will increase significantly.

Step 2: Exploit the constraint(s)

The next step in the process is to exploit the constraints. The Unit should take actions that ultimately increase the capacities of the psychiatrist and therapists to reduce wait time. These actions should involve only the psychiatrist and therapist, and no additional funds should be expended. Only patient visits generate reimbursement or Throughput. Any time spent unnecessarily engaged in non-clinical activities represents an inefficient use of valuable professional time. Several examples of this problem with their recommended solutions follow. In some of the problems, significant effects are not expected from an individual solution but, rather, from implementation of the combination of solutions for those problems.

Problem 1: Missed and cancelled psychiatrist and therapist appointments

Patients cancel or miss approximately 25% of appointments scheduled with the Unit psychiatrist and therapists, but the range was zero to 50% during the eight week period of the study. Cancelled and missed appointments represent the most flagrant waste of professional time observed during this study.

Generally, no attempt is made to remind patients of their appointments or to contact patients who miss their appointments. Rather, patients are expected to keep their appointments and to contact the unit to reschedule when they miss. This expectation may be satisfactory for therapists, who usually schedule the majority of therapy sessions at weekly or biweekly intervals. Although not conducive to effective therapy, there is no urgent need (nor typically room in the therapists’ schedules) to reschedule missed therapy appointments the same week.

For the Unit psychiatrist, however, most patients’ medication visits are scheduled to coincide with the patient running out of medication. When patients miss their medication appointments and are not immediately rescheduled, one of several problems will quickly surface. First, the patient may run out of medication, which can result in the re-emergence of symptoms and possible hospitalization. Second, the patient may request to be rescheduled for that week, increasing the workload over that previously scheduled. Third, the patient may call during or after clinic hours requesting that medications be called into a pharmacy. Each of these outcomes increases work for the psychiatrist.

The psychiatrist typically schedules Psychiatric Evaluations for 1 hour and medication visits for 30 minutes. The time lost to missed and late-cancelled appointments is evenly split...
between Psychiatric Evaluations and Medication Visits, with the latter showing approximately twice the occurrences. The psychiatrist rarely schedules more than three Psychiatric Evaluations per day. All therapists schedule for one hour appointments and do two to three Intakes per week.

Therapists routinely schedule patients for Psychiatric Evaluations. This practice has two disadvantages. First, the patients have no contact with the psychiatrist before the first appointment. Second, they often have misgivings about taking medication for their disorder.

Missed appointments for Psychiatric Evaluations are particularly problematic because each occurrence wastes one and one-quarter hours of valuable psychiatrist time, costs the agency one and one-quarter hours of psychiatrist pay, sacrifices significant Unit reimbursement, and delays the evaluations of other patients. The economic burden upon the system, approximately $200 (including psychiatrist pay and lost revenue) per occurrence, is significant. With about three psychiatric evaluations missed or cancelled per week, yearly cost exceeds $10,000.

Solution 1A: The psychiatrist should:

(a) call new patients to schedule them for psychiatric evaluations,
(b) make reminder calls to those patients on the work day before their appointments; and
(c) minimize or eliminate scheduling Psychiatric Evaluations on Mondays to avoid weekend intervals between reminder calls and Psychiatric Evaluations;
(d) in consultation with the therapist, close the cases of patients who frequently miss or late-cancel their medication visits.

When the psychiatrist personally schedules the Psychiatric Evaluation and calls the patient to remind him or her of the appointment, the psychiatrist forms the beginning of a relationship with a new patient. This pre-appointment interaction should diminish the anxiety associated with seeing a psychiatrist for the first time. A patient is more likely to miss the initial appointment when the psychiatrist is only a name on an appointment card.

Of course, certain minimal standards of attendance must be maintained for all patients. Cases of patients who late-cancel or miss three appointments in any 12 month period should be closed in coordination with the therapist.

Solution 1B: Therapists should:

(a) call new Intake patients, once scheduled by Access, to confirm their appointment;
(b) make reminder calls to those patients on the work day before their appointments;
(c) coordinate with Access to minimize or eliminate scheduling Intakes on Mondays to avoid weekend intervals between reminder calls and Intake appointment;
(d) if time permits, call patients who miss their therapy appointments to reschedule; and
(e) in consultation with the psychiatrist, close the cases of patients who frequently miss or late-cancel their therapy appointments.

Therapists should employ the same strategies used by the psychiatrist for new patients for the same reasons and with similar benefits expected.
Problem 2: Time wasted by the psychiatrist going to the waiting room to bring patients back to his or her office and returning them to the waiting room at the conclusion of their visit

The psychiatrist’s office is located furthest (about 60 feet) from the waiting room. This problem costs approximately 45 seconds per patient visit. When the psychiatrist sees 32 patients in his 20-hour week on the Unit, the cost is 24 minutes of expensive psychiatric time. In addition, the psychiatrist makes numerous trips to the administrative office, a similar inefficiency.

Solution 2: The Unit Coordinator should move the psychiatrist to the office closest to the waiting room

This solution requires no additional expenditures and increases the efficiency of the psychiatrist. By moving the psychiatrist to the new office, each round trip to the waiting room should take only 15 seconds, which costs only eight minutes of psychiatrist time, a savings of 16 minutes per week. When coupled with other recommendations suggested in this analysis, the psychiatrist can see a greater number of patients per week. A therapist also experiences this problem but to a lesser degree, because he or she schedules no more than seven patients per day.

Step 3: Subordinate all other decisions to the constraint(s)

After Exploiting the constraint, the next step is to Subordinate decisions involving non-constraint resources in order to manage the system’s constraint. Restated, how can other resources be used to improve the productivity of the clinicians without spending money?

Problem 1 Revisited: Missed and cancelled psychiatrist and therapist appointments

In Solution 1A, the Unit psychiatrist personally schedules and reminds patients of Psychiatric Evaluations. While beneficial for new patients, there is little to be gained by using the same procedure for medication visits, since these patients already have an established relationship with the psychiatrist. Moreover, asking psychiatrists and therapists to make reminder calls to medication and therapy patients would waste too much expensive professional time.

In the public sector, patients frequently demonstrate a lack of responsibility for keeping their appointments. Many times, patients simply forget their appointments. Other times, the patients are too ill. At times, some are too poor to afford petrol or a bus token. Frequently, patients miss appointments because they are incarcerated. Some refuse to walk to their appointments on rainy or snowy days. And some, unfortunately, lose interest in pursuing treatment once they obtain disability benefits. Some patients miss appointments frequently and do not appear to be invested in their treatment. One patient whose case was closed recently had missed or cancelled 21 times over the previous 12 months.

The most common sequellae of missed medication visits is that the psychiatrist eventually gets messages from those patients requesting an urgent appointment after they run out of medications, or he gets paged after hours or on weekends to refill medications. Both results cause the psychiatrist extra and unnecessary work. He or she must either make telephone calls from home to refill medications and/or overbook his or her schedule to accommodate rescheduled appointments. A far better strategy is to prevent missed and late-cancelled appointments.
Solution 1C: Clinical support should make reminder calls to all patients scheduled for medication and therapy visits on the workday prior to their appointments. Whenever a patient cancels, clinical support staff should attempt to refill the appointment.

Patients usually claim that they miss appointments because they forget. If clinical support reminds patients of their medication and therapy appointments, the number of billable visits should increase. If staff refill cancelled appointments, fewer appointment times will be wasted. These actions will require approximately eight additional hours per week of clinical support time, the cost of which is justified by the inevitable gain in billable patient visits.

All clinical services require the involvement of clinical support personnel, who perform typical clerical duties such as answering all telephone calls, pulling and replacing charts, paging the psychiatrist when he is off the Unit, and word processing. Unfortunately, owing to the inadequate capacity of clinical support, reminder calls for the therapist intake appointments are currently not possible.

The inadequate capacity of clinical support exemplifies how non-constraint resources can be turned into constraints and thus create a balanced system. It is essential to understand the impact of the constraint on the Throughput of the system and to decide where that strategic constraint should be located. Sometimes money should be spent to elevate non-constraint activities to prevent their transformation to additional constraints.

Step 4: Elevate the constraint(s)

If the foregoing actions to increase the capacity of the psychiatrist and therapists prove inadequate, then management should attempt first to Elevate the constraints without buying more expensive professional time.

Problem 3: Lack of adequate clinical support staff

The most economically beneficial solutions developed during this analysis require adequate clinical support staff.

Solution 3: SouthEnd should:

(a) increase entry pay for clinical support to a level that is comparable to the community standard,
(b) modify the pay scale so that pay increases are competitive with the private sector, and
(c) hire additional clinical support personnel.

In view of the clinical support staffing deficiencies noted above, SouthEnd should take appropriate actions to provide adequate clinical support staff. SouthEnd has difficulty recruiting and retaining clinical support personnel, chiefly because of the low entry pay of $8 per hour and inadequate provisions for meaningful pay increases. Presently, many newly hired personnel seek better opportunities elsewhere after gaining a few months of experience. SouthEnd does not fully appreciate the substantial costs of employee turnover.

CD Unit Clinical Support should receive an immediate increase in hourly pay to $9 (and within a year to $10), and eight additional hours of clinical support time should be added to the schedule for making reminder calls to patients as specified in Solution 1D. The cost to the Unit in clinical support pay will be $152 per week or $7,904 a year net of benefit costs.
The cost of these pay changes would be short lived, as the resulting increase in billable patient visits would show economic returns within a few months.

Approximately 40% of patients seen on the Unit are enrolled in Medicaid, which reimburses the agency $228 per Psychiatric Evaluation hour, $114 per half-hour medication visit, and $148 per therapy hour. If the reminder calls reduced missed medication appointments by only 50%, Unit Medicaid reimbursement would increase in excess of $15,000 annually. If the reminder calls reduced missed therapy visits by 50%, Unit Medicaid reimbursement would increase by approximately $40,000.

Thus, making reminder calls for medication and therapy visits would show a net increase in Unit Medicaid reimbursement of over $50,000. Moreover, if the cases of patients who frequently miss appointments despite reminders were closed, the Unit would gradually increase its return on costs to an even greater degree over time as patients who were not committed to their treatment and frequently miss or late-cancel are weeded out.

Clinical support pay increases and added hours are ultimately the two most important recommendations that SouthEnd can implement to satisfy patient demand for care, increase clinician efficiencies, increase revenues, improve employee morale, and enhance the quality of patient care.

Problem 5: The significant amount of paperwork the psychiatrist and therapists must complete

The Unit psychiatrist and therapists currently complete a number of forms each day, most of which do not require a clinical degree to complete.

Solution 5: As much paperwork as possible should be completed by clinical support staff using information contained in the patient chart before giving the paperwork to clinicians. This action would further reduce the non-reimbursable time clinicians presently spend completing paperwork. The additional clinical support time required amounts to approximately four additional hours per week. Since clinical support time is 15% of the cost of contract psychiatrist time, the financial benefit of this solution is obvious.

Problem 6: Lack of psychiatric nursing support

A psychiatric nurse can accomplish some of the duties presently expected of the psychiatrist, such as logging in sample and Patient Assistance medications and preparing them to be dispensed to the upcoming week’s patients. Most importantly, a nurse can complete certifications for the State’s small-fee medication program and Patient Assistance Medication applications, both of which are particularly time-consuming.

Solution 6: The Unit should hire a psychiatric nurse to assume the above-listed responsibilities. These tasks require approximately two hours per week and can be performed during the psychiatrist’s absence. Nursing time can be minimized if clinical support completes non-clinical portions of paperwork.

Problem 7: Inadequate psychiatrist and therapist capacities

Solution 7: If the above recommendations fail to adequately increase psychiatrist and therapist capacities, then the Unit should increase psychiatrist and therapist hours.
Unfortunately, rising patient demand during the study was so great that increasing psychiatric hours was unavoidable. However, by implementing the above-recommended solutions, the Unit could have minimized the number of new psychiatric hours needed. Implementation of the recommendations for increasing clinical support pay and hiring additional clinical support personnel should minimize the need for additional therapists.

**Step 5: Once the constraint is broken, return to Step 1 and begin the process again**

Goldratt included Step 5 in his focusing steps as an emphatic reminder not to let inertia stop what should be ongoing improvement. Managers must identify and break new constraints by reiterating the Five Focusing Steps until they are satisfied with the system’s process.

**Implementation of recommended solutions**

Following completion of the TOC-based operations analysis described above, the Unit coordinator was briefed on the recommended solutions. Her reaction was favorable, but full implementation proved difficult because of organizational structure and policy constraints, as explained below.

The Unit Coordinator moved the psychiatrist to the office closest to the waiting room and administrative office. Implementation of this recommendation did not result in significant direct financial and productivity gains. The small gain in efficiency, however, did provide the time necessary for the psychiatrist to begin personally scheduling new patients for Psychiatric Evaluations and making reminder calls. As explained earlier, full benefit depended upon both moving the psychiatrist office and transferring many of the clerical duties currently performed by the psychiatrist to clinical support and nursing.

In the organizational structure at SouthEnd, clinical support falls under the control of the Vice President for Administration. Thus, neither the Unit Coordinator nor the Program Director (both clinicians) has the authority to increase clinical support pay, hire additional clinical support personnel, or specify additional clinical support duties such as making reminder calls to patients. The Unit Coordinator spoke with the clinical support supervisor to request that clinical support make reminder calls to psychiatric patients. This request was met by the classic business response, ‘That isn’t our job.’

The new procedure for scheduling new patients for Psychiatric Evaluations and making reminder calls produced significant benefits during a four-month pilot study. The No Show and Cancellation rate for Psychiatric Evaluations during the study period fell from 43% in 2000 to 20% in 2001. Moreover, the resultant decrease in multiple appointments previously necessary because of no shows now allows an increased number of patients to be scheduled, with less lag time between referral and evaluation. Finally, the economic advantages of reduced numbers of missed appointments follow both from patient-based reimbursement and a decrease in wasted psychiatric hours.

Unfortunately, the greater productivity that results from the decreased rate of missed appointments for Psychiatric Evaluations means that clerical duties once performed during those missed appointments must now be performed elsewhere, often after hours. Initially, the direct economic benefit from the new procedure was partially offset by increased psychiatric hours necessary to do paperwork and return telephone calls after normal business hours.

At the request of the Unit psychiatrist, the CD Unit was approved for 16 hours of nursing time per month. The nurse alleviated most of the aforementioned offset and increased the capacity of
the psychiatrist who now usually leaves on time. More psychiatric time will be needed, however, to accommodate the additional therapists that the Unit plans to hire.

The Unit Coordinator initiated two biweekly psychoeducational groups for patients who frequently miss their therapy appointments. Two therapists will lead each group. Each patient will see his therapist in an individual session quarterly. Since these groups are for patients who frequently miss appointments, attendance at a minimum of one group session per month will be mandatory. Cases of patients who fail to meet that requirement will be closed. The groups and the accompanying termination policy should decrease the number of missed individual therapy appointments and increase productivity rates for the therapists.

Increased clinical support hours and pay, the most revenue enhancing of the recommended solutions, must await agency action at the executive level. To assess the benefit of reminder calls, the Unit psychiatrist and clinical support staff conducted a four-month pilot study during which time they began making reminder calls to medication patients after the regular Unit hours of operations. The number of missed medication visits during this period was compared with that of the same period one year earlier. Unfortunately, because some patients have no telephone and those who do often have no answering machines, only a small percentage of patients could be contacted. The results demonstrated no benefit to reminder calls and missed and late-cancelled medication visits persisted at around 26%.

An obvious solution would seem to be sending patients reminder postcards in the days prior to their scheduled appointments. Patient confidentiality could be maintained by excluding return address and reminding the patient only of his upcoming appointment time with ‘Dr K.’ Since reminder calls are less expensive than postcards, another pilot study should be conducted in which reminder calls would be made only to those with telephones and answering machines, and postcards would be sent to the remaining patients.

If the Unit cannot control the number of missed and late-cancelled appointments by reminders, then it must control the number of violators. The only practical means of achieving fewer missed and late-cancelled appointments is to enforce a stricter policy on keeping appointments. Patients should first be educated that late-cancelled appointments are no better than missed appointments. Patients should next be informed that after three missed and late-cancelled appointments within any 12 month period, their case will be closed in the absence of convincing mitigating circumstances.

The results of such a policy will be that over time the patient load at SouthEnd can be refined to a population that is more committed to treatment than presently exists. With 40% of patients receiving Medicaid, the increase in reimbursement possible with such a policy is significant.

Discussion

‘The significant problems we face today can not be resolved at the same level of thinking we were at when we created them.’ Albert Einstein’s comment underscores the philosophy of the Theory of Constraints. TOC requires that we think in new ways about old problems. It challenges several sacred cows of traditional business practice. This analysis shows that adoption of a TOC approach to operations management will improve both the operational and financial success of the CD Unit and SouthEnd as a whole.

SouthEnd dictates standards for and monitors the percent time that clinicians spend with patients. This policy is consistent with the cost-world belief that local optimization and cost containment maximize efficiency and revenue. In reality, however, such procedures usually guarantee the inefficient use of resources and increased costs (Corbett, 1998). The peril of
cost-world thinking at SouthEnd is best exemplified in the situation described earlier where the least expensive resource (clinical support) is unable to subordinate for the most expensive resources (clinicians). If maximum efficiency of the psychiatrist and therapists is important, for example, then relieving these professionals of tasks performed less expensively by clinical support or nurses is critical.

Womack and Flowers (1999) found a similar situation in a public clinic they analyzed, where the constraint was not the physician but rather the medical technician. An emphasis on cost reduction and local optimization in effect establishes a balanced system. Balanced plants not only are inefficient but are also frequently close to bankruptcy. SouthEnd, in effect, has crippled itself by attempting to optimize its least expensive resource, clinical support. The effect of this local optimization is that clinicians perform clerical tasks and sit idle during missed and cancelled appointments. By these unfortunate actions, clinicians subordinate for clinical support, unnecessarily increase costs, and sacrifice potential reimbursement.

Without meeting the two necessary conditions of the goal, that both customers and employees must be satisfied, an organization can never reach the goal. Significant turnover strongly suggests non-compliance with the necessary condition for employees. (Malpractice suits suggest similar non-compliance for patient satisfaction.) Turnover increases costs of recruiting, selection, and training, and it reduces the efficiency and effectiveness of an organization (Robbins, 1998). Turnover at SouthEnd frequently occurs as a result of employee dissatisfaction, especially in clinical support.

It is difficult to recruit and retain clinical support staff at SouthEnd because of low pay, a result of the organization’s emphasis on cost containment. These critical employees only recently obtained an entry-level raise to $8.00 per hour. Even at that pay rate, new employees will be difficult to retain and clinical support will remain understaffed. Pay delivery is also problematic at SouthEnd, where pay delays of three to four weeks beyond the end of the pay period are the rule. Such practices would never be tolerated in the corporate world. Pay is a significant determinant of employee satisfaction, the lack of which is a significant contributor to employee turnover (Robbins, 1998).

The relationship of one of the authors with SouthEnd (he is the Unit psychiatrist) presented several problems with implementation that deserve discussion. SouthEnd is entrenched in traditional cost-world thinking. The premise of TOC and the recommendations were presented initially to the CEO and Vice President for Outpatient Services. While they showed interest, they were not committed to pursuing the recommendations.

Goldratt (1990) cautions TOC advocates against simply presenting recommended solutions to those of cost-world persuasion. He correctly reasons that for TOC to work in an organization, members of the organization must acquire the same enthusiasm for TOC as the TOC expert. The only means of acquiring such enthusiasm is for the audience to ‘originally’ come to the same conclusions (i.e. they must see the conclusions as their own). This requires use of TOC’s formal Thinking Process, an eloquent and logical step-wise process for uncovering problems and discovering solutions. This process will be the subject of a subsequent paper.

With the neutral stance of top-level management towards TOC in mind, attention was subsequently focused on implementing those recommendations possible on a local level at the Unit. Goldratt devised the concepts of ‘sphere of control’ and ‘sphere of influence.’ J.K. implemented the new procedure for personally scheduling and reminding patients of Psychiatric Evaluations because it was within his sphere of control to do so. Within his sphere of influence was the Unit Coordinator. She was able to appreciate the benefits of the psychiatrist office being close to the waiting room, group sessions for patients who frequently missed appointments, and the addition of psychiatric nursing hours. In contrast to the CEO and Vice President, the Unit
Coordinator was more clinician than administrator. She was not entrenched in cost-world thinking. Therefore, she could readily appreciate the logic of TOC and the pre-eminence of throughput over minor cost considerations.

This analysis clearly demonstrates the significant clinical and economic benefits of applying the principles of TOC to a Community Mental Health Centre. In this paper, we show that South-End’s over-reliance on cost containment and local optimization creates a balanced plant effect. Operations changes that would increase revenues cannot be implemented because of inadequate capacity in every activity. Ironically, the cost-world policies responsible for this situation actually result in decreased efficiency and revenues and increased costs. At SouthEnd, cost-world thinking blocks revenue enhancement.

Unit-level analyses such as those reported in this paper are extremely beneficial for several reasons. First, the actual benefit of proposed recommendations can be verified by small-scale pilot studies conducted on the unit analyzed. The Vice President of Clinical Services showed significant interest in the proposal for psychiatrists to make direct contact with patients in order to schedule Psychiatric Evaluations after the pilot study demonstrated that such a practice cut missed and late-cancelled evaluations in half. More importantly, such analyzes frequently reveal system-level problems. For maximal benefit, analysis of all segments of the agency, both clinical and administrative, should follow unit-level analysis. Key to such benefit is the utilization of individuals formally trained in the Theory of Constraints and operations analysis, with clinical training being an added advantage. Equally important is the presence of ‘enlightened management’ capable of thinking ‘beyond the box’ and receptive to modern advances in operations management.

References