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A business case for quality improvement in addiction treatment: Evidence from the NIATx collaborative

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Abstract

The Network for the Improvement of Addiction Treatment (NIATx) promotes treatment access and retention through a customer-focused quality improvement model. This paper explores the issue of the "business case" for quality improvement in addiction treatment from the provider's perspective. The business case model developed in this paper is based on case examples of early NIATx participants coupled with a review of the literature. Process inefficiencies indicated by long waiting times, high no-show rates, and low continuation rates cause underutilization of capacity and prevent optimal financial performance. By adopting customer-focused practices aimed at removing barriers to treatment access and retention, providers may be able to improve financial performance, increase staff retention, and gain long-term strategic advantage.

Keywords

quality improvement; process improvement; business case; systems engineering

Introduction

The Institute of Medicine has issued reports that challenge health care providers to deliver services that are safe, effective, patient-centered, efficient, timely and equitable.[1–3] While quality improvement came slowly to behavioral health,[4–6] in recent years it has begun to take hold in addiction treatment. Members of the Network for the Improvement of Addiction Treatment (NIATx) have applied a quality improvement model to address the six

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dimensions of quality mandated by the Institute of Medicine.[7] A contributing factor in the proliferation of quality improvement may be the belief that, in addition to providing client benefits, these techniques can strengthen an organization's financial position.

Evidence supporting a business case for quality improvement in health care, however, is mixed. An examination of cases across chronic disease care, patient safety, waste reduction, prevention, and approaches to value-based purchasing concluded that the presence or absence of a business case for quality was circumstantial.[8] There have been few if any randomized studies on the issue, owing to the many complexities of undertaking systematic organizational research in health care.[9] Very little research exists in this area specific to the addiction treatment field, whose unique structure (fragmented markets, predominant role of public funding, etc.) complicates the assessment.[10] Despite widespread organizational problems such as high closure rates[11] and staff turnover,[10] minimal research is available on the best organizational, financial, or managerial practices within the field.[12] Many providers struggle financially and may lack the knowledge needed to improve.

Inefficiency may contribute to poor financial performance among addiction treatment providers. Opportunities exist for widespread improvements in administrative routines in the field,[13] with the potential to decrease costs and/or increase revenue. Of the estimated 23 million Americans in need of addiction treatment services, only 10 percent receive treatment in any given year.[14] While there may be many reasons individuals choose not to seek treatment, organizational factors can significantly impede access to treatment.[15] A recent study of management practices in the field found that management quality was associated with shorter waiting times to enter treatment.[16]

The idea that improving quality will yield improved financial performance remains largely untested. Is there a business case for quality improvement in addiction treatment? What exactly does "business case" mean in this field? The objective of this paper is to examine the business case for quality improvement in addiction treatment based on organizational case examples. This paper seeks not to produce verifiable results and conclusions *per se*, but to study real-world case examples in an effort to ultimately develop a testable theory as to what constitutes a business case for quality improvement in addiction treatment.

NIATx Overview

This paper features case examples from founding members of NIATx, a national improvement collaborative that is dedicated to improving treatment access and retention. The NIATx approach to quality improvement is predicated on the idea that the majority of clients' quality problems are the result of poor organizational processes. Hence, the key to improving quality is to focus on process. NIATx teaches a quality improvement model based on five evidence-based principles[17]:

1. Personally experience what it is like to be a customer, and involve the customer in improving services
2. Fix the key problems; help the CEO sleep at night
3. Pick a powerful change leader
4. Get ideas from outside the organization or field
5. Use rapid-cycle testing to establish effective changes

The cardinal principle (understanding and involving the customer) is the most important factor in predicting successful quality improvement. NIATx advocates the use of program "walk-through" exercises in which staff members personally experience the challenges clients face as they seek treatment in their agency, such as unwelcoming staff and

burdensome procedures.[18] Process shortcomings identified during the walk-through exercise are addressed using quality improvement tools such as flowcharting, Nominal Group Technique,[19] and Plan, Do, Study, Act (PDSA) change cycles.[20] NIATx agencies seek to improve four aims related to treatment access and retention:

1. Reduce waiting times
2. Reduce no-shows
3. Increase admissions
4. Increase continuation

Independent evaluators found that the initial cohort of NIATx providers improved waiting time by an average of 37 percent and increased retention through third unit of care by 17 percent.[21] A second cohort of NIATx providers replicated these results.[22] The full quality improvement model is described in detail elsewhere.[23]

NIATx members have been able to provide improved service quality for clients, as evidenced by reduced waiting time and higher continuation rates. While these results are seen as positive for clients, what do they mean for the organizations that treat them? While the NIATx quality improvement model did not emphasize financial matters, participants noted the “business case” benefit of implementing quality improvement when they recognized that many of the projects most successful at improving treatment access and retention were also successful in increasing revenue or reducing costs. As the business case concept began to emerge from the fieldwork of early adopters, researchers were led to investigate whether there was a business case for quality improvement in addiction treatment.

Case Examples

Facilitated by researchers from the University of Wisconsin-Madison, executives from the founding members of NIATx convened to discuss the use of quality improvement in the addiction treatment field. A conceptual model of the business case for quality improvement was developed and presented by the researchers. Executives agreed to be interviewed for case examples structured on the business case theme. For the purposes of the interview, “business case” was defined as a project where financial gains or improvements in staff retention could be attributed to quality improvement activities. Each executive participated in a structured phone interview with a researcher. A standard template organized each case example around four core elements: goals/measures, changes implemented, business case impact, and lessons learned. Researchers took notes during the interview and summarized the agency’s experience, following up with executives via phone and email to request additional information as required. After compilation, executives were given an opportunity to review their own case. Four case examples are selected to illustrate key elements of the business case model. These examples were sampled for theoretical rather than statistical reasons[24,25] to represent programs that display diversity with respect to levels of care, program size, and geography, and illustrate different approaches to building a business case for quality improvement. As such, the case examples are not capable of proving anything; rather, they are intended to encourage more definitive research in an area that holds promise for improving the financial well-being of addiction treatment providers. Table 1 presents a summary of organizational characteristics of the four providers selected for case examples.

Perinatal Treatment Services

Located in Seattle, Washington, Perinatal Treatment Services is a residential and outpatient substance abuse program for pregnant and parenting women. When the agency joined

NIATx, its long-term residential treatment program was operating with a 60 percent continuation rate through the first four units of service, occupancy rates below 50 percent, and a net loss of nearly $140,000 only four months into the fiscal year. The agency's executive director engaged in a walk-through exercise to experience the treatment process through the eyes of the customer. The walk-through revealed an impersonal admission process—conducted in a public area, fraught with interruptions, and lasting more than two hours. Following the admission interview, the client was shown to a room to wait alone, left with no directions on what to expect going forward. Based on the results of the walk-through exercise, Perinatal Treatment Services implemented changes to improve the client admission experience. Changes included greeting clients by name, establishing a private admission office, offering refreshments, providing peer mentors, and offering "bravery awards" for entering treatment. After the changes were implemented, Perinatal Treatment Services recorded an 85% rate of continuation through the first four units of service and monthly revenues of more than $100,000.

Acadia Hospital

Acadia Hospital is a non-profit behavioral health hospital with both inpatient and outpatient programs located in Bangor, Maine. Prior to joining NIATx, the hospital's intensive outpatient program was facing a budget crisis due to underutilization. Clients who requested treatment were placed in treatment "slots" as they became available and were required to call repeatedly while waiting for admission to an open slot. With an annual budget deficit of $139,346, the program was a drain on organizational resources and in danger of closure. Following a walk-through exercise, a change team conducted a Plan, Do, Study, Act (PDSA) change cycle wherein potential clients were offered next-day screening appointments. Under the new system, waiting time from initial contact to screening fell from an average of approximately 16 days to 1 day. More people were screened in the first week of the project than in the entire previous month. Most new consumers were eligible for fee-for-service Medicaid reimbursement, or were otherwise asked to self-pay on a sliding fee scale. As new clients began entering the program, revenue began to increase while costs remained constant, because the new admissions were handled with previously underutilized resources. The change to open access turned the program around financially, from an annual budget deficit of $139,346 to a surplus of $208,639 the following year.

Prairie Ridge Treatment Services

The mission of Prairie Ridge Addiction Treatment Services is to reduce the impact of alcohol and other drug use on the affected individuals, families, and communities of Northern Iowa. Prairie Ridge has historically received a majority of its revenue through the Substance Abuse Prevention and Treatment Block Grant, a capitation contract with defined service requirements. The agency saw no increases in state or federal appropriations for eight consecutive years, while their labor and operating costs rose steadily. Though Prairie Ridge had traditionally viewed increased admissions as increased risk, management believed they could remedy their funding deficit by expanding services for fee-for-service clients. In order to create capacity for such patients, the program needed to find ways to drive out operational inefficiency. At baseline, direct service rates for outpatient treatment (i.e., the proportion of a counselor's time spent treating clients) averaged 40 percent. After a series of process changes, outpatient direct service rates rose from 40 percent to 53 percent. With 24 clinical staff, this efficiency gain was effectively equivalent to hiring 3 additional employees. The previously unutilized capacity was reallocated to create programming to serve new classes of fee-for-service clients. The agency saw an increase in fee-for-service revenues (third party, Medicaid, and client-fee receipts) of nearly $400,000 over a three-year period.

Kentucky River Community Care

Kentucky River Community Care provides mental health, substance abuse, trauma, and developmental disability services at 45 locations in southeastern Kentucky. The organization has extended the NIATx quality improvement approach beyond its usual purview of client access and retention to address the problem of staff retention. Baseline data showed that 35–50 percent of new staff left the organization within the first six months of employment. High levels of staff turnover disrupted service delivery and cost the organization in terms of advertising, interviewing, and training. A project team gathered information through focus groups that included staff from the targeted program, as well as staff from a program that historically had very good employee retention. After studying the issue, the project team hypothesized that the quality of training and orientation provided to new staff might explain the differences in employee retention observed between programs. New employees interviewed in the focus group drawn from the targeted program stated that they felt overwhelmed, that they did not feel valued, and that their opinions did not matter. Based on this information, the project team implemented several improvements (including a streamlined hiring process, a welcome packet and training guide, and mentor assignments) that raised six-month retention rates to levels near 90 percent.

Discussion

Three of the four case examples presented in this paper (Acadia Hospital, Perinatal Treatment Services, and Prairie Ridge Addiction Treatment Services) demonstrated profitability increases due to quality improvements. The changes these providers made were all designed to make treatment more customer-friendly, in accordance with the cardinal principle of NIATx quality improvement. In these three cases, increased revenues drove increases in profitability. Quality improvements helped programs increase profitability by operating more cost efficiently with existing resources.

In addition to the direct financial benefits that can result from quality improvement, strategic benefits and internal organizational benefits should also be considered.[26] A discussion of different categories of business case benefits (financial improvements, strategic advantage, and improved staff retention) follows.

Financial improvements

The case examples featured in this paper highlight how process inefficiency can cause a gap between the volume of services demanded and the volume of services delivered in a program. In the NIATx model, demand is quantified by counting the total number of requests for service in a given period of time. The conversion rate from request for service to the first treatment varies but is typically quite low in the field, often around 50 percent.[15, 27, 28] For example, a program may receive 100 requests for service per month, but only admit 50 clients because of what they see as a capacity limitation. Ineffective processes impose non-monetary factors, such as waiting time, that function as prices from the consumer's perspective.[29] Process inefficiency constrains a provider's ability to offer services and raises the price of services from the consumer's standpoint. From an economic perspective, process inefficiencies cause consumers to use fewer services at a higher effective cost than they would at economic equilibrium. NIATx quality improvement strategies are intended to help agencies fulfill demand for services more efficiently. Eliminating system waste (often in the form of waiting time) increases capacity utilization, enabling the provider to deliver a greater quantity of services at a lower price per unit relative to the inefficient system. Acadia Hospital's move to open access was followed by an influx of consumers to the program. Notably, consumers were not screened for eligibility based on insurance coverage or ability to pay, since management correctly realized that

there was little real financial risk in admitting more clients into an underutilized program with slack resources due to inefficiency.

The NIATx aims have an important relationship with organizational finances: volume drives revenue in the form of billable admissions and units of service. NIATx quality improvement strategies are targeted at achieving cost efficiencies; i.e., maximizing service volume using existing resources. Quality improvements that eliminate waste encourage potential clients to become actual clients, with admissions increasing as a result. Further, clients who continue to show for appointments (once admitted) increase total units of service delivered. The residential program at Perinatal Treatment Services was reimbursed on a fee-for-service basis, meaning that every additional service provided yielded additional revenue. Recognizing the link between continuation rates and revenue was the key to moving the program from a deficit scenario to a surplus. While accurately defining capacity can be challenging, increasing volume to system capacity will decrease unit costs and increase profitability. There is a business case for increasing service volume until capacity constraints are reached, at which point program revenue is maximized.

Strategic Advantage

Providers can increase profitability by more efficiently meeting current demand through quality improvement. At some point, however, a provider may reach capacity constraints, at which point further revenue growth requires additional resources. Efficient programs are better able to justify the additional resource expenditures necessary to meet unmet demand. At Acadia Hospital, a program once viewed primarily as charity care (and a net drain on financial resources), became a solid contributor to the organization's overall bottom line. By demonstrating positive financial performance, the program became an attractive choice for financial planners within the hospital relative to competing programs. Additional financial resources were channeled to the program, which permitted the hiring of new staff. By expanding the resource base of the program, capacity could be increased to serve more consumers in the community.

While fee-for-service reimbursement lends itself readily to the business case model outlined here, NIATx members with mainly capitation reimbursement have also recognized a business case for quality improvement. In the case of Prairie Ridge Treatment Services, the state eventually increased the agency's block grant contract amount in response to their demonstrated commitment to quality improvement and efficiency. In a field with flat or declining federal and state funding and uncertain prospects for funding increases in the future, programs strictly dependent on grants and contracts are likely to find themselves in ongoing financial trouble. Providers are encouraged to diversify the payer mix to include third party and private-pay consumers, a strategy that is under management control.[30]

Staff Retention

High turnover rates endemic to the field make staffing a concern for many providers. The financial gains realized by improving treatment access and retention can be invested in employee salaries, training and workforce development, and providing a better working environment. A cornerstone of the NIATx quality improvement model is the participation of staff in rapid-cycle PDSA change teams. Within health care, a study conducted across 49 primary care practices showed that staff participation in the organizational decision-making process was associated with reduced turnover among administrative staff.[31] In NIATx, staff members are empowered to make decisions that drive organizational performance. Since adopting NIATx quality improvement principles, Prairie Ridge Treatment Services has seen their staff turnover rate decline. Counselors were surveyed to understand why they've stayed

and identified things such as “being on the cutting edge” and “dedication to a client-centered culture” as important factors in their commitment to the organization.

Improved workforce stability has been a valuable by-product of Prairie Ridge Treatment Services’ commitment to quality improvement. In contrast, Kentucky River Community Care chose to make staff turnover the focus of their improvement efforts, demonstrating that quality improvement tools originally designed for improving treatment access and retention can be successfully applied to other organizational problems. Kentucky River Community Care has made quality improvement a part of its organizational culture, extending from service delivery to workforce development. In fact, every job description now includes participation in quality improvement activities as a primary job responsibility for every employee.

Limitations and challenges

The case-example approach employed in this paper means that the results cannot be generalized in the usual statistical sense.[25] The early NIATx participants were grant-funded through a competitive selection process. These agencies were organizationally predisposed to implementing change, committed to quality improvement, and compelled to perform because of grant requirements. While the results these organizations achieved are not necessarily atypical, not every organization would likely exhibit the leadership, motivation, and commitment required to produce similar results. The case examples illustrate what can be accomplished by organizations with motivated leadership and external resources, and support the theory that organizations can achieve a business case for quality improvement using the NIATx model.

In other industries, establishing a “business case” for a project or activity usually requires a return on investment calculation that enumerates costs and benefits, and discounts these costs and benefits over a specified time period. The business case definition employed in this paper is broader. Learning and practicing quality improvement does entail some costs (for example, travel for training sessions, staff time, etc.), but those costs are not considered here. This paper examines the business case primarily from the provider’s perspective, though alternative perspectives may be important to consider. For example, a social perspective would consider costs and benefits of quality improvement that accrue to government payers and clients as well as providers. Finally, while the researchers reviewed each case example, they are self-reported by participants and have not been verified by financial auditing.

Future research

The experiences of organizations like Acadia Hospital, Kentucky River Community Care, Perinatal Treatment Services, and Prairie Ridge Addiction Treatment Services point to areas for future study. While relatively little is known about administrative processes in addiction treatment,[12] the case examples suggest that streamlining processes can help providers operate more cost efficiently. Essentially, providers can admit and retain more clients without adding resources through quality improvement. Further research is needed to formally test the idea that organizations operate more cost efficiently by practicing customer-oriented processes (e.g., walk-in assessments, reminder phone calls, etc.).

Implications for Behavioral Health

W. Edwards Deming, a business visionary and an icon of systems engineering, famously asserted that 85 percent of customer problems can be attributed to process issues.[20] The cardinal principle of NIATx quality improvement encourages providers to experience treatment from the customer’s perspective and draw on this perspective to design processes

that are customer-friendly. In a field in which providers have sometimes created systems designed to test the motivation of potential clients, adopting this principle may mark a departure from conventional thinking. A foundational creed in the NIATx philosophy is that "nobody should have to suffer twice." In other words, suffering the consequences of addiction is punishment enough, without the additional trials traditionally associated with seeking treatment. While client motivation plays a role in the decision to enter services, it is just one factor. Client show rates also depend on waiting time to enter treatment, a variable primarily controlled by the provider.[32] A recent study of heroin users placed on a waiting list for methadone treatment found that client motivation did not predict treatment entry.[33] Research supports the idea that a focus on process is essential to ensure that potential consumers engage in treatment.

The addiction treatment field currently finds itself reeling under the strain of a severe economic downturn. Deming encouraged organizations to "Adopt the new philosophy. We are in a new economic age".[20] Though the economic age Deming referred to was the late 1970s and he was primarily addressing leaders of manufacturing industries, this statement has a timeless quality. As healthcare reform and parity regulations begin to take effect, there is great uncertainty in the addiction treatment field. Change is a constant force that leaders in any industry must embrace. The "new philosophy" now required for those charged with delivering addiction treatment services is to understand and involve the customer in the design of services. Services need to be designed with the goals of getting clients into treatment quickly, and actively encouraging clients to stay engaged in treatment at every step along the treatment continuum. This approach to service delivery benefits clients, and case examples indicate the potential for organizational benefits as well. For many organizations, adopting this philosophy may require an enormous culture shift. In a challenging and uncertain economic environment, organizations most receptive to change are those likely to thrive.

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Table 1

Services and service settings for case examples

Site	Location	Approx. annual # of Clients	# of Staff	Level of Care	Women	Adolescent	Minority
Perinatal Treatment Services	Seattle, WA	200	56	Residential	100%	1%	29%
Acadia Hospital	Bangor, ME	1,400	367	IOP	35%	12%	5%
Prairie Ridge Addiction Treatment Services	Mason City, IA	2,200	32	OP	36%	10%	6%
Kentucky River Community Care	Jackson, KY	1,600	38	OP	32%	7%	1%