

Teaching the NIATx Model of Process Improvement as an Evidence-Based Process

Alyson C. Evans, MS
Traci Rieckmann, PhD
Maureen M. Fitzgerald
David H. Gustafson, PhD

ABSTRACT. Process Improvement (PI) is an approach for helping organizations to identify and resolve inefficient and ineffective processes through problem solving and pilot testing change. Use of PI in improving client access, retention and outcomes in addiction treatment is on the rise through the teaching of the Network for the Improvement of Addiction Treatment's (NIATx) Model for Improvement. Emphasizing five phases of change, five key principles for change, and four revolving aims, NIATx has taught hundreds of addiction treatment administrative and clinical staff to lead successful process improvement initiatives. This paper draws on experience from NIATx and offers methods and concepts to consider in the teaching of core process improvement tools and techniques.

Alyson C. Evans is Program Manager and Provider Coach, Network for the Improvement of Addiction Treatment, University of Wisconsin-Madison.

Traci Rieckmann is Research Assistant Professor, Oregon Health and Science University, Portland, OR.

Maureen M. Fitzgerald is Editor, Network for the Improvement of Addiction Treatment, University of Wisconsin-Madison.

David H. Gustafson is Director, Network for the Improvement of Addiction Treatment, University of Wisconsin-Madison.

Address correspondence to: Allyson G. Evans, Network for Improvement of Addiction Treatment, 610 Walnut Street, #1140, Madison, WI 53726 (E-mail: ally_evans@chsra.wisc.edu).

Journal of Teaching in the Addictions, Vol. 6(2) 2007

Available online at <http://jtadd.haworthpress.com>

© 2007 by The Haworth Press. All rights reserved.

doi:10.1080/15332700802127912

KEYWORDS. NIATx, process improvement, change, training, learning, evidence-based practice

INTRODUCTION

The addiction treatment system is fraught with many struggles and complications (Institute of Medicine, 2006). This is not an epiphany; it is a simple reality. Yet the solutions to the problems faced by this multifaceted system are not always obvious or easy to identify and pursue. In most instances our (the) mere acceptance of the flaws in the system has allowed addiction treatment staff to settle with “what we’ve got,” which raises the question: What about our customers? Whether they be clients and their families, staff, funders, or the various advocates of the treatment system, our customers may want more.

In an attempt to address this question and challenge the acceptance, agencies are moving to the adoption of process improvement strategies to enhance service to their customers. The Network for the Improvement of Addiction Treatment (NIATx) is making headway by working with treatment agencies that have unsatisfactory and cumbersome processes and transforming them into efficient processes that improve client access, retention and outcomes in treatment (Capoccia et al., 2007; McCarty et al., 2007). An advocate for the consumers’ experience in treatment, NIATx is a model for improvement that challenges provider and state agencies not to settle for the current state of affairs when we know our customers can have more.

This model encourages the spread of process improvement in agencies and provides specific research-based practices and proven methods, tools and strategies to help agencies better serve their clients. This paper discusses the teaching of NIATx core concepts as an example of a process improvement model that can form the basis of change in the addiction treatment system.

PROCESS IMPROVEMENT OVERVIEW

Process Improvement Theories

Process improvement (PI) creates a system for generating quality processes and communication, with particular focus on the creation of ideas for increasing efficiency and ultimately boosting the “bottom

line.” The origin of PI can be traced to early 1920s production quality control, and notably to the concepts proposed by Juran (1988) and Deming (1986) in the late 1940s and 1950s. The basic ideas and theories of PI have been applied in numerous settings. After initial use to reduce errors and maximize productivity in the 1970s production industry, process improvement methodologies have been applied in various non-industry environments over the past decade, realizing successful performance outcomes in business (Harrington, Van Nimwegen, & Esseling, 1997; Kaynak, 2003) and more recently, in health care settings (Pearson et al., 2005). This movement towards the application of process improvements in health care was demonstrated in the UK where, in early 2001, health care organizations started embracing process improvement approaches to solve key system challenges (Young et al., 2004) with support from the NHS Institute for Innovation and Improvement (formerly, NHS Modernisation Agency). As health care organizations across the globe started to adopt improvement strategies that involve developing and testing small-scale changes (Berwick, 1998), the Institute of Medicine (IOM) reinforced the need for wide-scale health care quality reform through the release of the *Crossing the Quality Chasm* series, initially focusing on general health care system improvement (IOM, 2000, 2001) and more recently qualifying the need for substance-use and mental health system restructuring (IOM, 2006).

Improvement work in the addiction treatment field can be linked back to the National Institute on Drug Abuse’s (NIDA) health services research work initiated in the 1980s to enhance drug treatment services (Inciardi, Fletcher, & Tims, 1993 in Compton, et al., 2005). In recent years, a multitude of addiction and mental health treatment organizations have generated promising outcomes in administrative process improvement through implementation of NIATx rapid-cycle change (Capoccia et al., 2007).

A common method used in industry, business, health care, and the addiction field for small-scale pilot testing is Shewhart’s Plan, Do, Study, Act (PDSA) approach (Shewhart & Deming, 1939). Otherwise referred to as rapid-cycle change, PDSA allows changes to be implemented over short time periods, which is considered a critical factor in the success of improvement projects (Hoffart & Cobb, 2002; Green & Plsek, 2002). As part of the PDSA process, organizations set improvement goals, pilot test changes, and assess outcomes using demonstrated performance measurement tools (Clemmer et al., 1999; Ragsdale & Mueller, 2005). In addition to this basic approach to change, there are many guiding principles that have been deemed vital for change success

(Gustafson & Hundt, 1995). In an environment where administrative and clinical processes are analyzed and improved for customer benefits, an appropriate starting point is to clearly understand customer needs (Rogers, 1995; Batalden & Splaine, 2002). In addition, before change can really excel, the organization must enlist a change leader who has some prestige in the organization (Freeman, 1982), and should engage the vital support of senior leadership (Gustafson et al., 2003) through the selection of a improvement projects that address organizational strategic goals (Goodman, 1982; Lee & Steinberg, 1980; Quinn & Cameron, 1989). Another core principle involves going outside of ones organization and to other industries to find innovative ideas for improvement (Utterback, 1971; Rogers, 1995). In addition to the use of rapid-cycle PDSA, these core principles guide the work of NIATx.

Process Improvement Initiatives

NIATx, part of the University of Wisconsin-Madison's Center for Health Enhancement Support Systems, was founded in 2003 as a partnership between the Robert Wood Johnson Foundation (RWJF) and the Center for Substance Abuse Treatment (CSAT). RWJF and CSAT initially funded 39 alcohol and drug abuse treatment programs to participate in the NIATx Learning Collaborative. The goal of the network is to teach participating programs core strategies for initiating organizational change to improve treatment access and retention. NIATx uses a multi-method knowledge and skill development structure known as the Learning Collaborative Model. The core elements of this model include the NIATx Web site (www.NIATx.net), all-member learning sessions, all-member teleconferences, interest circle teleconferences, a monthly electronic newsletter, a weekly e-mail update, and expert coaching.

A cross-site evaluation revealed that during the implementation of process improvement initiatives, NIATx agencies were able to reduce days from first contact to treatment by 37 percent and increase continuation from the first to third treatment sessions by 17 percent (McCarty et al., 2007).

NIATx currently supports three process improvement projects.

Advancing Recovery (AR), a Robert Wood Johnson Foundation effort, is co-directed by the Treatment Research Institute (TRI). In this project, payer-provider partnerships in six states are initiating improvements and re-designing systems with a small cohort of treatment pro-

viders, allowing them to test new strategies and identify effective practices prior to dissemination to other providers in the state. AR also aims to eliminate barriers to the use of evidence-based practices in addiction treatment.

A second initiative, the Strengthening Treatment Access and Retention-State Implementation (STAR-SI) program, is funded by the Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT) and The Robert Wood Johnson Foundation. In STAR-SI, Single State Authorities work in partnership with providers in their states. Together they test process improvement (PI) methods that have shown to help providers get more people into treatment and keep them there longer.

With support from the National Institute on Drug Abuse, in 2007 NIATx launched NIATx200, a randomized control trial. Recruiting 200 treatment providers from four states, NIATx200 aims to identify the NIATx services and strategies that have the greatest value for agencies working to improve treatment quality, operations, and finance for enhancing access and retention.

The central philosophies of collaborative learning and the NIATx Model of Process Improvement provide the foundation for each NIATx initiative.

The NIATx Model of Process Improvement

In considering how to teach the NIATx Model of Improvement, it is important to have a basic understanding of its principles and tools. The NIATx Model of Process Improvement (MPI) consists of a set of techniques and strategies to facilitate the implementation of organizational change. The NIATx MPI features five action phases of change, which are supported by five key principles and core implementation tools.

The five action phases of change, adapted from the Model of Improvement developed by Langley et al., (1996), are: (1) Understand customer needs, (2) Decide what you want to accomplish (pick an aim), (3) Identify how you will know if a change is an improvement, (4) Select and test changes, and (5) Sustain the gains.

To support the implementation of effective change, NIATx recommends the consideration of five core principles to support improvement efforts. Prior to the conception of NIATx, Gustafson and Hundt (1995) examined factors that had demonstrated successful organizational improvement in non-health care organizations. Five key factors emerged, and these became the five guiding principles that NIATx embraced:

(1) Understand and involve the customer, (2) Fix key problems, (3) Pick a powerful change leader, (4) Get ideas and encouragement from others, inside and outside the organization, and (5) Use rapid-cycle testing to pilot and establish effective changes

The first action phase of the NIATx MPI, understand customer needs, is also the most important of the five principles guiding change efforts. The guiding premise is that in any effort to improve administrative or clinical processes for the customer, we must begin by clearly understanding customer needs (Rogers, 1995; Batalden and Splaine, 2002).

The most widely used tool for understanding the customer experience in the addiction treatment system is the walk-through. All NIATx Change Projects begin by stepping through the system just as the consumer (a client and their family, staff, funder, or advocate of the treatment system) does when they seek and receive treatment services—literally to *walk in the customer's shoes*. An example of one type of walk-through is that used to gain a better understanding of the treatment initiation process, from the point of first contact to entry into treatment. In this case, two members of the agency's staff take the role of customer (addict) and a family member. After initiating contact with the agency and receiving an intake appointment date, the customer and family member attend the appointment and record their experiences, observations, and feelings throughout the process. In addition, as they face procedures that appear burdensome, unnecessary, or uncomfortable for the customer they record those, together with any ideas for improving those processes. At the same time, front-line and clinical team members are asked to provide their ideas for process improvement, adding an element of staff involvement that is essential for engaging key people in reform.

Once the 'customer and family member' have been through the intake, assessment, and/or treatment session and have a good grasp of how the treatment system looks from the customer perspective, the walk-through report is shared with others in the organization. Hundreds of agencies have initiated the walk-through as part of grant applications and project activities for NIATx programs. In many cases they expose eye-opening issues about their procedures and processes and the ensuing discussions have resulted in the implementation of key organizational improvements. Directions on the walk-through are provided on the NIATx Web site (www.niatx.net).

A useful tool to accompany the walk-through report is a flowchart, which maps out the walk-through experience from customer and/or staff perspective and provides a useful visual tool for displaying the

process analyzed during the walk-through. Offering a “picture” of the process through a flowchart helps staff see the bottlenecks or other obstacles in the process that the walk-through experience revealed. This can provide a good basis for identifying unnecessary steps or gaps in the system.

Once customer needs and the process of care have been examined the agency moves into action phase two, where the CEO will pick a powerful Change Leader and work with that Change Leader to identify a key problem and decide what they want to accomplish through the selection of a core aim(s). The key problem selected may arise from the walk-through or it could be something that has been on the radar for some time in relation to the selected aim.

NIATx process improvement projects target one of four aims, which offer providers effective ways to plan for, institute, and measure improvements in patient access to and retention. They also enable treatment organizations to create a culture of quality improvement while improving their fiscal bottom line. The experience of NIATx has shown that the majority of core business problems in the treatment system are related to one or more of these four aims:

- Reduce waiting time between first request for service and first treatment session
- Reduce the number of patients who do not keep an appointment (no-shows)
- Increase admissions to treatment
- Increase continuation from the first through the fourth treatment session

Once the problem has been clearly articulated, phase three includes identifying key measures that show the extent to which the change creates an improvement. For example, if the selected aim is to reduce waiting time between first request for service and first treatment session, the measure to track would be average time to first treatment session. In order to calculate this average, it is necessary to record the date of first contact and the date of 1st post-admission treatment session for each client entering your treatment system.

After the CEO and Change Leader have picked a key problem, an aim(s), and core measure(s), it's time to enter the fourth phase where changes to address the key problem are selected and tested. This begins with uncovering ideas for solving the key problem/addressing the aim, and concludes with the actual testing of one core solution. The NIATx

Learning Collaborative model encourages peer sharing as a vehicle for creative and unorthodox thinking around new practice improvements. Organizations can seek ideas for improvement from other areas of the organization, from other NIATx organizations, or from other industries, as emphasized by the fourth supporting principle, getting ideas and encouragement from outside the organization. Many NIATx organizations have taken ideas that worked in other treatment agencies, and some have even adopted strategies used in other industries. For example, some treatment agencies have successfully increased admissions and reduced no-shows by adopting the double-booking strategy used by major airlines to reduce the number of unfilled slots on flights.

A useful tool for generating ideas is the Nominal Group Technique (NGT) (Delbecq, Van de Ven, & Gustafson, 1986). NGT combines silent idea generation, idea sharing, discussion, and voting to identify the best solutions for a given problem. Initiated as a meeting with a core group, including staff from different levels within the organization, the NGT provides a good means for engaging staff in the process and giving them a sense of ownership right from the start of a project. Once a solution has been identified using the NGT (or other inclusive process), it can now be tested for effectiveness. This occurs through the use of rapid-cycle testing, the fifth supporting principle. Rapid-cycle change uses Shewhart's PDSA framework (Shewhart & Deming, 1939):

(P)lan: Identify the aim of the change and predict which results will make the change a real improvement

(D)o: Experiment. Try the change for a short period of time (e.g., two weeks) and in a limited area (e.g., for a few patients).

(S)tudy: complete the analysis of your data, comparing your predicted results with your actual results. In this step, you should summarize what you have learned. Ask: What worked well and what did not? Did the change result in an improvement? Why or why not?

(A)ct: Use the results of the STUDY stage to decide on your next steps. Was the change beneficial to clients, staff and/or the organization? Should the change be increased in scope or tested under different conditions? Should the change be adopted, adapted, or abandoned? What will be the next cycle?

The PDSA provides a quick and time sensitive means for testing changes prior to large-scale implementation, making for an efficient trial-and-learning methodology (Langley et al., 1996). It is typical for a PDSA cycle to be completed in a two-week period. In the instance that

the change is successful it can be implemented and monitored continually to ensure that the preferred level of performance is maintained. On the other hand, if the change doesn't have the desired impact, it can be modified and re-tested using a second rapid-cycle. This cyclical testing continues until an improvement occurs. It is important that only one modification is made in each new cycle so that success can be attributed to a particular action.

Once changes have been tested and proven effective the project will enter the sustainability phase. This phase can begin anywhere from one to six months after a change has been initiated and requires significant planning and energy to avoid relapse to the old way of working or old level of performance. The Sustainability Model (Maher, Gustafson, Evans, 2004) identifies 10 key factors to consider when planning to sustain a Change Project. Consideration of these factors at multiple time points during a project, including the very early phases, will increase chances of success. The tool also provides a good system for monitoring sustainability likelihood over time. Visit www.niatx.net to view the Sustainability Model.

Methods and Strategies for Teaching the NIATx Model of Process Improvement

The NIATx Teaching Model: As a learning network, NIATx emphasizes the teaching of process improvement to individuals at different levels within payer and provider organizations. Important to building the necessary knowledge, skills and attitudes (KSAs) around process improvement is the role of process improvement coaches who act as "teachers," in this case, of the NIATx MPI. The MPI offers a balance between cognitive and behavioral skill learning, with a strong emphasis on practice where learners "just try it." This "experiential" learning requires personal involvement and specifically speaks to the learner's needs and desires, i.e., they learn about process improvement methods so they can fix process problems in their organizations (Rogers, 1969). The NIATx experience to date indicates that a combination of visual, auditory, and kinesthetic modalities provide the most comprehensive learning structure. NIATx learning sessions and workshops frequently include a mix of case studies, lectures, discussions, role plays, and peer networking. Incorporating conceptual learning, practice, application outside of class, and transfer to the workplace, the model of learning most closely resembles a combination of Social Learning Theory (SLT)

(Bandura, 1977) and Behavior Modeling Training (BMT) (McEvoy, 1998).

An important aspect of teaching process improvement to help agencies gain basic expertise involves the development of core KSAs in key agency leaders and early adopters. NIATx trains such leaders who subsequently return to their organizations to practice and receive feedback on newly developed skills, as required for BMT. This skill transfer is more challenging to achieve in an academic teaching environment, although some potential methods of moving toward this goal have been demonstrated. McEnrue (2002) utilized role play exercises where students engage in a mock real-life situation in the class-room that challenges their skill-set, followed by constructive feedback to help them develop (McEnrue, 2002). More advanced still is the approach taken by Fleming (1992), known as practicum-based design, where students work at an organization in the field for an extended period in order to develop the skills they are learning simultaneously in the classroom. Further exploration of the integration of SLT and more advanced elements of behavioral learning is made by Hess (2007) whose approach encourages student teams to create the workshops that make up the program, and engages them in practical problems based on real-life company scenarios. The former gets students actively involved with the material and the opportunity for self-learning and development as a given topic. The latter provides students with the opportunity to take class-room learning, apply it to a practical example, and receive peer feedback to enable to transfer of skills.

Strategies for Teaching NIATx Process Improvement Concepts

As previously described, it is essential for success that students learn the basic elements of the NIATx MPI, including the five phases of change, the five key supporting principles, the four aims, and key implementation tools, namely the walk-through, the flowchart, the Nominal Group Technique, the PDSA, and the sustainability model. The following section provides a description of a teaching strategy or technique for some of the core NIATx components or interventions. It is also important that students and teachers have hard copies of the content material. A specific NIATx workbook is available on the NIATx Web site (www.niatx.net). That workbook can serve as a class book to help students learn and use NIATx principles and tools to support organizational change

Understanding Basic NIATx Concepts: It is important in teaching MPI that students are given the macro view of the change process before the individual elements of the process are dissected. The first session should include a basic overview of the MPI that clearly outlines the five phases of change and the five supporting key principles. It is suggested that an overview be provided as a reading prior to the first class, followed by a closed-book team exercise where student teams identify and give examples of the five phases and principles as quickly as they can. A simple worksheet would include the questions:

1. What are the five phases of change?
2. What are the five key principles?
3. What are the four aims?
4. What tool can be used during the first phase of change?
5. What tool is useful for generating ideas?
6. What does the PDSA stand for?

An additional exercise asks the students to unravel each phase of change in terms of the key components/steps of that phase and how that phase relates to one or more of the key principles. This teaching strategy has been successful in the NIATx Change Leader Academy for encouraging team-work and student engagement with the material from the beginning of the program.

Conducting an Effective Walk-Through: Teaching the walk-through in the training room can be a challenge. A useful method for communicating this process is through role-play, including both trainer demonstration and student participation. The trainer, together with a group of students, demonstrates what it might look like to do a walk-through of a particular process, how one goes about becoming the patient, interacting with staff and possibly friends as a patient, asking questions, identifying problems, making detailed notes based on observations, and obtaining ideas for improvement from staff members during the process. This provides a good example of how one might conduct him/herself during the walk-through process. Once the trainer has sufficiently modeled the behavior, the students can practice a walk-through in their teams. Providing students with an instruction sheet that includes definition of both the process/scenario that is being walked-through and specific team roles during the role-play creates the necessary structure for this exercise to be effective. A second option would be to establish agreements with local treatment facilities that allow students to go in, do a walk-through of a real process, and make suggestions for change

based on their observations. Framing this as an opportunity for the agency to receive complimentary outside assistance that will save them time and kick-start their change initiatives will help to gain support and buy-in. Many question whether the “mystery shopper” approach should be used for the walk-through, where staff are not pre-informed that a walk-through will occur. NIATx believe that it is important to notify staff in advance of the walk-through activity, since the intent is to identify better ways to help clients or customers in a transition or process and many times, while the walk-through is going on, staff will identify changes they can see that would be helpful. Additionally, an open and inclusive walk-through provides a good tool for building trust amongst a team of staff, and for early-engagement in the change process.

Constructing Clear Flowcharts: Another important tool to teach is the flowchart. The key to teaching flowcharts is to keep it simple. Individuals need to learn how to construct a very basic chart that describes the flow of a process. Teachers should think about an everyday process and ask students to map this out. An example would be: “create a flowchart based on your daily process of getting to class or work.” Clearly define the start and end of the process and ask them to identify the steps they take in between those two time points. In this case, the start of the process is waking up and the end of the process is getting to class or work. Once they have this process mapped out they should be able to see some areas where they can eliminate or combine steps to save time and create a more streamlined, efficient process. Ask them to identify a potential improvement goal, such as “reducing the time it takes to get to class or work” or “increasing time spent in bed in the morning,” and some ideas for improvement. For example, they may realize that brushing their teeth in the shower, eating breakfast while walking the dog, or reading the newspaper on the bus would help them to meet their goal. In addition to this, the teacher should have one or two good case examples from agencies that have pre- and post- change flowcharts. This gives a good example of how agencies have worked to cut out the inefficient elements of their processes to streamline, and it puts the tool into the context within which it should be used.

Defining Potential Problems or Solutions: An additional method to teach students is the Nominal Group Technique (NGT), most effectively done using an explanation-demonstration-practice method. The instructor begins by communicating the main points using a simple and short PowerPoint, which includes justification for the use of the tool together with examples of appropriate use, for instance the tool can be used by a change team to identify problems and/or to generate solutions

that lead to some action. This is followed by an instructor-led example of how a NGT session would be conducted. The instructor goes through each step of the process, briefly outlining how an instructor would introduce each section of the NGT process to the participants and how they would engage with the participants. It is essential during this step that the instructor models the behavior that they want the students to display when they take on the role of facilitator. The next step is for students to practice facilitating the NGT. In groups of 4-5, each individual takes a step of the process and facilitates that element, as previously described and demonstrated by the instructor.

Conducting Change Projects: Subsequently, the instructor is encouraged to create an activity whereby students will practice the distinct phases of the PDSA several times. This can be as simple as asking a student to find the most efficient way of getting to class in the morning. For a period of one week the student might cycle to class/work, record the time it takes them to get from a to b, assess the average time at the end of the week, and act on it for the following week. That action may be to either choose a different cycle route to try or to take the bus for the next week. The student would repeat the PDSA using the new plan and compare the two different methods the following week to see which is more efficient and thus the best option for future travel. This type of exercise encourages students to become familiar with using the PDSA for very simple tasks and to get them thinking in a specific way. A method heavily used within NIATx is known as the airplane exercise. This exercise demonstrates the PDSA approach by getting students to work in teams of four or five people, asking them to design a paper airplane (Plan), fly that plane (Do), measure the distance flown (Study), and make an alteration to the plane prior to repeating the cycle (Act). Students are asked to go through four cycles, trying one new change per cycle. This exercise is both engaging and insightful for learners.

Sustaining Changes: Finally, students should learn how to use the sustainability model for assessing core change projects against 10 key factors. The instructor should make use of the online version of the sustainability model tool to do a demonstration via a classroom Power Point presentation, or an interactive web demonstration where students each have their own computer and are lead through use of the tool by the teacher. Once students are familiar with the basic elements of the tool the teacher should provide them with hypothetical project cases with which they will use to complete the tool as accurately as they can. Students will complete the tool individually for the given case and will then come together with a team of three other students to discuss their re-

sponses to the tool, justifying why they assessed the case the way they did. Teams should report-out to the whole class about their learning experience and the instructor should provide some key tips and pointers for assessing sustainability for a given project.

Faculty Resources: As mentioned previously, the NIATx Web site (www.niatx.net) has several instructional resources that teachers can use to support the teaching of process improvements and the NIATx model, as discussed in this paper. That Web site includes an overview of the NIATx Model in a section titled "About NIATx" and several publications and other resources in a section titled "Process Improvement." That material is available to the public and can be easily downloaded for instructor or student use.

CONCLUSIONS

Many of the suggested methods of teaching above come directly from NIATx experience in running education meetings, workshops, and training programs with addiction treatment personnel. Specifically, the NIATx change leader academy, a six-month program designed to train process improvement and leadership knowledge, skills and attitudes for the development of organization change leaders, utilizes many of these methods of teaching. The NIATx Change Leader Academy combines the key components of the NIATx collaborative learning model with the principles of social learning theory and behavior modeling training. The academy includes pre-work activities, a 2.5 day skill-building workshop, four months of practical field work, a 1.5 day sharing workshop, and 2 months of field work completion.

Initial observations show that participants of the academy have been able to successfully implement change in their agencies. A previous participant of the academy said "The academy was a real eye-opener. I had not had an extensive workshop on 'process improvement 101' like the one that the academy offered. Light bulbs went off—I saw how I could implement process improvement in so many other ways." Another stated, "The principles and experiential learning from the first collaborative crystallized what I'd already experienced as a change team member and gave me a number of tools to use with my change team."

In summary, the experience of the NIATx academy and the feedback from coaches and project participants corresponds with the literature on the teaching of process improvement and indicates the following:

- There is hope and a process to change the system.
- The process comes from different disciplines and theories.
- MPI has specific components and steps.
- Components can be taught.
- Teaching strategies that support engaging students in the learning process are important in enhancing transfer to real-life settings.

The NIATx learning model attempts to follow Fixsen's (2005) conclusions from research defined by Joyce and Showers (2002) about how people learn. These conclusions were that; (a) practice and feedback in training and (b) coaching in the classroom are the most effective ways for students to gain knowledge of and demonstrate those skills in training and real-life settings. Specifically, coaching in the classroom is the key facilitator for the application of new skills. The research indicated that theory, discussion and demonstration in training were the least effective ways for students to build KSAs.

REFERENCES

- Bandura, A. (1977). *Social learning theory*. New York: General Learning Press.
- Batalden, P., & Splaine, M. (2002). What will it take to lead the continual improvement and innovation of health care in the twenty-first century. *Quality Management in Health Care, 11*, 45-54.
- Berwick, D.M. (1998). Developing and testing changes in delivery of care. *Annals of Internal Medicine, 128*, 651-6.
- Capoccia, V.A., Cotter, F., Gustafson, D.H., Cassidy, E.F., Ford, J.H. II., Madden, L. Owens, B.H., Farnum, S.O., McCarty, D., & Molfenter, T. (2007). Making "stone soup": Improvements in clinic access and retention in addiction treatment. *Journal on Quality and Patient Safety, 33*, 95-103.
- Clemmer, T., Spuhler, V., Oniki, T., & Horn, S. (1999). Results of a collaborative quality improvement program on outcomes and costs in a tertiary critical care unit. *Critical Care Medicine, 27*, 1768-1774.
- Compton, J., Stein, E., Robertson, D., Pintello, B., Pringle, N., & Nolkow. (2005). Charting a course for health services research at the National Institute on Drug Abuse. *Journal of Substance Abuse Treatment, 29*(3): 167-172.
- Delbecq, A.L., Van de Ven, A.H., & Gustafson, D.H. (1986). *Group techniques for program planning: A guide to nominal group and Delphi processes*. Wisconsin: Green Briar Press.
- Deming, W.E. (1986). *Out of the crisis*. Cambridge, MA: MIT Center for Advanced Engineering Studies.
- Fixsen, D.L. Naoom, D.F. Blase, K.A. Friedman, R.M. & Wallace, F (2005). *Implementation Research: A Synthesis of the Literature*, Tampa, FL: University of South

- Florida, Louis de la parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).
- Fleming, M., Clark, K., Davis, A., Brown, R., Finch, J., Henry, R., Sherwood, R., & Politzer, R. (1992). A national model of Faculty development in addiction medicine. *Academic Medicine*, 67(10): 691-3.
- Freeman, C. (1982). *The economics of industrial innovation*. Cambridge, MA: MIT Press.
- Goodman, P.S. (Ed.). (1982). *Change in organizations*. San Francisco: Jossey-Bass.
- Green, P.L., & Plsek, P.E. (2002). Coaching and leadership for the diffusion of innovation in health care: A different type of multi-organization improvement collaborative. *Joint Commission Journal on Quality Improvement*, 28, 55-71.
- Gustafson, D.H., & Hundt, A.S. (1995). Findings of innovation research applied to quality management. *Health Care Management Review*, 20, 16-24.
- Gustafson, D.H., Sainfort, F., Eichler, M., Adams, L., Bisognano, M., & Steudel, H. (2003). Developing and testing a model to predict outcomes of organizational change. *Health Services Research*, 38, 751-776.
- Harrington, H.J., Van Nimwegen, H., & Esseling, E.K.C. (1997). *Business process improvement workbook*. McGraw-Hill Professional.
- Hess, P.W. (2007). Enhancing leadership skill development by creating practice/feedback opportunities in the classroom. *Journal of Management Education*, 31, 195-213.
- Hoffart, N., & Cobb, A.K. (2002). Assessing clinical pathways use in a community hospital: It depends on what 'use' means. *Joint Commission Journal on Quality Improvement*, 28, 167-179.
- Incardia, J.A., Tims, F., & Fletcher, B. (Eds.). (1993). *Innovative approaches in the treatment of drug abuse. Program models and strategies*. Westport: Greenwood Press.
- Institute of Medicine. (2000). *To err is human: Building a safer health system*. Washington, DC: National Academy Press.
- Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.
- Institute of Medicine. (2006). *Improving the quality of health care for mental and substance-use disorders: Quality chasm series*. Washington, DC: National Academy Press.
- Joyce, B., & Showers, B. (2002). *Student achievement through Staff development* (3rd ed.). Alexandria, VA: ASCD.
- Juran, J.M., & Gryna, F.M. (1988). *Juran's quality control handbook* (4th ed.). New York: McGraw-Hill.
- Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21, 405-435.
- Langlely, G.J., Nolan, K.M., Nolan, T.W., Norman, C.L., & Provost, L.P. (1996). *The improvement guide: A practical approach to enhancing organization performance*. San Francisco: Jossey-Bass.
- Lee, W.B., & Steinberg, E. (1980). Making implementation a success of failure. *Journal of Systems Management*, 3, 19-25.
- Maher, L., Gustafson, D.H., & Evans, A. (2004). *Sustainability*. Leicester, England: British National Health Service Modernization Agency.

- McCarty, D., Gustafson, D.H., Wisdom, J.P., Ford, J., Choi, D. Molfenter, T., Capoccia, V., & Cotter, F. (2007) The Network for the Improvement of Addiction Treatment (NIATx): Enhancing access and retention. *Drug and Alcohol Dependence*, 88, 138-145.
- McEnrue, M.P. (2002). Managerial skills teaching: ten questions and twelve answers. *Journal of Management Education*, 26, 648-670.
- McEvoy, G. (1998). Answering the challenge: Developing the management action skills of business students. *Journal of Management Education*, 22, 655-670.
- Pearson, M.L., Wu, S., Schaefer, J., Bonomi, A.E., Shortell, S.M., Mendel, P.J., Marsteller, J.A., Lavis, T.A., Rosen, M., & Keeler, E.B. (2005). Assessing the implementation of the chronic care model in quality improvement collaboratives. *Health Services Research*, 40, 987-996.
- Quinn, R., & Cameron, K. (1989). *Paradox and transformation: Toward a theory of change in organizations and management*. Cambridge, MA: Ballinger.
- Ragsdale, M.A., & Mueller, J. (2005). Plan, Do, Study, Act model to improve an orientation program. *Journal of Nursing Care Quality*, 20, 268-272.
- Rogers, C.R. (1969). *Freedom to learn*. Columbus, OH: Merrill.
- Rogers, E. (1995). *Communication of innovations* (4th ed.). New York: Free Press.
- Shewhart, W.A., & Deming, W.E. (1939). *Statistical method from the viewpoint of quality control*. Washington: The Graduate School, The Department of Agriculture.
- Utterback, J. (1971). The process of innovation: A study of origination and development of ideas for new scientific instruments. *IEEE transactions on Engineering Management*, 18, 124-31.
- Young, T., Brailsford, S., Connell, C., Davies, R., Harper, P., & Klein, J. (2004). Using industrial processes to improve patient healthcare. *British Medical Journal*, 328, 162-4.