PROGRESS TOWARD MOTIVATIONAL INTERVIEWING PROFICIENCY IN CORRECTIONS: RESULTS OF A COLORADO STAFF DEVELOPMENT PROGRAM

Brad Bogue
Justice Assessment and Training

Fred Pampel
University of Colorado, Boulder

Diane Pasini-Hill
Colorado State Office of Research and Statistics

Abstract

This study examines the outcomes of one effort to implement motivational interviewing practices among selected agents working in 17 Colorado criminal justice agencies. As part of a project designed to improve implementation capacity, 90 participating officers underwent systematic training and coaching and then were observed via audiotapes or direct observation in sessions with offenders. Project staff coded interactions with offenders using measures of motivational interviewing skills (e.g., open questions, complex reflections). Analysis of pre- and post-intervention changes showed considerable improvement from the training/coaching regime, but use of taped sessions with subsequent feedback did most to facilitate officer proficiency and offender change talk.

Scholars and practitioners in the criminal justice field have devoted much attention to identifying programs that prevent or reduce substance abuse, recidivism, and behavioral problems of offenders. Many programs have proven successful not only by treating the offenders (Andrews et al., 1990; Aos, Miller, & Drake, 2006; Dowden & Andrews, 2004; Lowenkamp, Latessa, & Holsinger, 2006; Smith, Gendreau, & Swartza, 2010), but also by utilizing staff development strategies that are broader in scope than formal training alone (Bonta et al., 2010; Bonta et al., 2011; Robinson et al., 2012; Taxman, 2008). These latter programs help officers interact more effectively with offenders and help agencies better guide and motivate staff.

However, program change encompasses the difficult tasks of reorienting the culture of an agency and the actions of individual officers. Structural change within organizations comes slowly and habits of officers tend to persist. Under these conditions, implementing new practices through training alone often proves insufficient (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Madson & Campbell, 2006; Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Ruark, Bogue, & Diebel, 2007; Simpson, 2002).

A huge literature on organizational change highlights the difficulties in implementing new strategies for improvement in criminal justice agencies. For example, studies of program evaluation have increasingly been supplemented by studies of program implementation (Belenko, Wexler, & Taxman, 2008; Blase & Fixsen, 2005; Mihalic, Irwin, Fagan, Ballard, & Elliot, 2004; Van Dyke & Naoom, 2011). Indeed, the field of implementation science has emerged to study the gap between what is known to be effective practice (theory and science) and what is actually done (policy and practice). In the words of Fixsen and colleagues (Fixsen et al., 2005, p. 2), "implementation is a decidedly complex endeavor, more complex than the policies, program, procedures, techniques, or technologies that are the subject of the implementation efforts."

This study presents the results from one strategy used to implement program change in criminal justice agencies in Colorado. At the behest of the Colorado Commission on Criminal and Juvenile Justice, five departments and 17 agencies of the Colorado state government implemented an evidence-based program to improve treatment of offenders. Motivational interviewing (MI) was originally developed by William Miller and Stephen Rollnick (Miller & Rollnick, 1991; Miller & Rollnick, 2002) to assist in preparing people to change addictive behavior. Over the past 20 years MI has additionally proven to be useful in working with broader and more diverse populations than originally intended. MI has been shown to improve client engagement (Carroll et al., 2006; Lundahl & Burke, 2009), retention (Burke, Dunn, Atkins, & Phelps, 2004; McMurran, 2009), treatment compliance (Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010), and clinical outcomes (Burke et al., 2004; Rubak, Sandboek, Lauritzen, & Christensen, 2005; Vasilaki, Hosier, & Cox, 2006). It has had success with alcohol and other drug addiction populations, as well as with mental health clients—groups that overlap considerably with corrections populations. By implementing MI, the agencies aimed to

improve the skills of correctional staff in interacting with offenders and ultimately increase the offenders' chances for success in the community. However, they did so using a program of skill training based on individual coaching and feedback for officers viewed as likely change agents in the organization.

The EBP (Evidence-Based Practices) Implementation for Capacity (EPIC) staff development strategy sought to train officers to adopt MI skills in the Colorado criminal justice agencies. To evaluate its success, we first describe the conceptual background and justification for the program and its implementation through coaching and training. The training is unique in that it relies on precise measurement of the use of MI techniques by officers in meetings with offenders and their success in helping offenders to discover change goals in their own talk. Our analysis then examines improvements in these measured outcomes after officers have gone through two types of coaching.

The study aims to demonstrate improvement by measuring skill use and impact of officer interactions with clients before, during, and after the training. The study does not have a control group or measures of offender recidivism. It instead offers preliminary, case-study evidence of success in promoting change in officer interactions with offenders. Demonstrating that skills can be improved through an extended training process can establish the potential of the approach and set the stage for later efficacy studies.

Improving Capacity for Implementing Evidence-Based Practices

Three principles guided EPIC efforts to develop human capital in the correctional system: 1) collaboration, 2) scaffolding skills, and 3) organizational transparency.

Collaboration

Staff development works best when it emphasizes collaboration and mutual engagement at all possible levels (Bogue & Nandi, 2012; Fullan, 2010). Ideally, norms supportive of mutual engagement emerge and strengthen across departments and among peers within agencies. Some officers tend to take the lead in adopting and promoting new collaboration practices. These change agents informally share their skills and enthusiasm, helping peers develop the same repertoire of emerging new techniques, tools, and attitudes. Unlike mentors, who have a formal dyadic relationship with an individual officer, change agents serve as models to emulate for many unit members. Ultimately, collaboration across and within organizations should spread to the relationship between the officer and offender. Establishing strong relationships with clients under supervision requires mutual respect, a focus on purposeful interactions, and the goal of dealing with the criminogenic needs of clients (Trotter, 1995, 1996, 1999). The stronger this kind of collaboration, the better the outcome (Bonta et al., 2010; Bonta, Rugge, Scott, Bourgon, & Yessine, 2008; Robinson et al., 2012).

When properly structured, these forms of collaboration bring benefits to organizations and agencies as well as to the clients. Positive shifts in staff contacts and skills can translate into new perceived roles. Participating in a larger local criminal justice community committed to the change will bring new opportunities for engagement, personal development, and professional validation of officers. Their motivation may change as a result. When line officers and case managers become "champions" (Backer, Liberman, & Kuehnel, 1986; Howell & Higgins, 1990) for broad-based innovations such as MI, they increase their visibility, widen their scope of contacts, and expand their roles as "EBP ambassadors" for both their agency and the project. Success among officers leads to success in the organization, as success in the organization leads to individual success.

Scaffolding Skills and Mastery

Developing competencies in practices that entail complex skill sets is invariably a long-term process. Scaffolding involves building larger, more complex skill sets from smaller, simpler ones. For example, Trotter (1995) encourages role clarification in dealings between officers and non-voluntary clients as a means to improve working relationships and reduce recidivism. The techniques he advocates need to be rehearsed and practiced in combination with feedback. As practitioners become proficient in groups of specific techniques, they can bundle them in new ways that widen and improve their repertoire to develop best-practices skill sets.

Skill scaffolding relies on deference to expertise, a principle that helps guide high-reliability organizations (Bogue, 2009; Weick & Sutcliffe, 2001). Expertise in evidence-based practices is often found sporadically throughout the hierarchy of the organization, and comes from depth of experience, commitment to the skills, and willingness to reflect (Roberts & Yeager, 2004) and use feedback (Hubble, Duncan, & Miller, 2008). Skill scaffolding is enhanced through collaboration with peers and supervisors who provide models, coaching, and reinforcement.

Historically, probation and parole officers have had difficulty integrating law enforcement and caseworker roles associated with their case management functions (Petersilia & Turner, 1993). In addition, a third role, resource broker, has emerged as the role with which officers identify most strongly (Shearer, 2001). Yet, all three roles are necessary to provide effective community supervision. Officers who learn how to integrate these various roles in a balanced manner and to adjust their orientation flexibly from one client to the next are positioned well to explore how their supervision and service skills amount to an effective intervention, irrespective of any other outside services the offender receives. Integrating these roles requires a process of development that begins simply but moves steadily toward acquisition of a complex skill set. Practitioners must learn to integrate skills at progressively deeper levels (Bogue, Diebel, & O'Connor, 2008) to be congruent with and capable of flexibly adjusting to the range of myriad situations they confront in a caseload of high-risk offenders. Such learning requires

the steady building of complex skills from the simpler ones that officers already have (e.g., offender assessments, basic CBT techniques, experience interacting with offenders).

With regard to MI, scaffolding requires work on two fronts. First, officers need to develop the MI spirit in their manner of dealing with clients. MI spirit involves partnering with the client in a way that respects their autonomy and right to decide about personal change. It encompasses a keen interest in the client's potential, ideals, and solutions. As Arthur Fink (Fink, 1961) noted more than 50 years ago, an officer's effectiveness in working with offenders will depend on respect for them as human beings, belief in the capacity of people to change, and conviction that true change must come from within.

Second, officers need technical client-centered skills along with counselor-directive skills (Miller & Moyers, 2007). The former include active-listening skills, such as use of open questions, affirmations, reflections, and summaries (referred to as OARS). These skills in turn are a prerequisite for developing other essential counselor-directive skills that guide interactions out of discord and elicit change-reinforcing statements (or change talk) from clients. Strategies for scaffolding these MI skills require taking a longer view to staff development—more than just providing two- to three-day trainings (Fixsen et al., 2005).

Research suggests that there are competency ranges and thresholds for MI technical skills and that practitioners with skill ratings above these thresholds are more likely to obtain better outcomes (Amrhein, 2004; Moyers & Martin, 2006; Moyers et al., 2007). Training, feedback, and coaching clearly help bring staff to competency on established thresholds on MI skills (Yahne, Miller, Moyers, & Pirritanno, 2004; Miller et al., 2004; Moyers et al., 2007), but the latter two elements are crucial.

Organizational Transparency

Successful change comes from making roles, skills, motivation, and organization culture more visible (Keller, 2001). Visibility comes from intense cross training that enhances diverse, reflective, and flexible staff thinking, from repetitive coaching based on direct observation of in-context skills, and from interdepartmental structures that promote interagency accountability. The staff must not only see the expertise being modeled but also must practice their skills in a visible way. This requires an organizational environment of trust that allows staff to be open about weaknesses and the need to improve.

Organizations thus need to be willing to explore and work at transforming existing collegial norms that don't support feedback and peer coaching into shared values and routines that support open learning. To overcome the awkwardness of this change for many, action and initiative must occur at all levels of the organization. As an example, learning and diffusion of learning often take place with engagement in Communities of Practice (CoPs). CoPs involve an informal group of people who participate in a joint enterprise via mutual engagement with a shared repertoire of skills (Wenger, 1998; Wenger, McDermott, & Snyder, 2002). Agencies

can support CoPs by deliberately identifying a select group of staff that meet a profile associated with potential leadership talent. The selected staff members, in turn, form their own CoPs, which model skill acquisition for the larger organization. By identifying select staff to help lead in change, management can in effect create "acceleration pools" (Byham, Smith, & Paese, 2002) for incubating deeper skills and talent.

Another aspect of transparency comes into play. When organizations begin to commit to supporting EBPs, they learn about developing greater congruence between their espoused values, models, and actual practices (Argyris, Putnam, & Smith, 1985; Senge, 1990). The more congruent an agency is, the more likely its clients will perceive it to be fair and devoted to procedural justice. Perceptions of procedural justice have been shown to improve client receptivity and responsiveness to promising EBP interventions (Kleiman, 1998). When clients perceive procedural justice within an organization or system to be below a minimum expectation, they tend to disregard or discount all interventions taking place with that jurisdiction or setting (Porter, 2011).

⊞ EPIC Project

EPIC (EBP Implementation for Capacity) aims to systematically develop correctional capacity for successful implementation in Colorado (Bogue, 2012). The project focuses on many skills, but MI was selected as the primary evidence-based innovation to roll out in the local pilot agencies. MI is a method or strategy of interaction that is used to engage the offender and enhance the offender's motivation to change, while also providing the corrections professional with opportunities for modeling prosocial behaviors. The applications of the method are ubiquitous, the scientific evidence in favor of the practices is extensive, and the criteria for fidelity are clearly established. Yet, MI has not been part of traditional training or practice in the corrections community (English, Pasini-Hill, & Bonaiuto, 2011; McMurran, 2009).

A key to the capacity-building strategy in the EPIC project is a concentrated effort, via a flexible developmental system, to improve staff skill acquisition. Fixsen and colleagues at the National Implementation Resource Network (Fixsen et al., 2005) identify seven implementation drivers needed for most any successful implementation: 1) recruitment and selection, 2) preservice training, 3) consultation and coaching, 4) staff performance assessment, 5) decision-support data systems, 6) facilitative administrative supports, and 7) system interventions. Implementation drivers work together in a compensatory fashion so that deficits in a particular driver can be offset by emphasizing other complimentary drivers. For example, shortcomings in selecting appropriate staff can be remedied by training, or inadequate training often can be overcome by follow-up coaching. Conversely, stellar coaching or training can rub off positively and enhance implementation in project areas related to other drivers.

The EPIC project focuses particularly on the first five drivers. It recruits change agents, gives general training, consults and coaches during and after meetings with offenders, measures improvement in interactions with offenders, and compiles decision-support data systems from the resulting performance assessment data. As shown in Figure 1, the training, coaching, and performance assessment involves intense and in-depth processes that are the core of the EPIC project.

⊛ Figure 1

Training and Coaching Process

Following the EPIC's introductory meeting with correctional professionals, the group is provided with a timeline for trainings and taping interview sessions. The sequence of events is as follows.

Baseline Audio Tapes
- Trainee provides an audiotaped session with a consented offender/client.
- Tape is coded by trained MI coder to assess level of MI adherence; data entered into EPIC project database. Tape critique provided to trainee.

First 2-Day MI Training
- Time 1 Audio Tape. Trainee provides an audiotaped session with a consented offender/client.
- Tape is coded by trained MI coder to assess level of MI adherence; data entered into EPIC project database. Tape critique provided to trainee.
- Telephone coaching with trainee occurs to review tape critique and provide mentoring and coaching on MI techniques.
- Face-to-face coaching session occurs with consented offender/client. Coach observes and codes interaction during the interview and then provides feedback to trainee following the interview using MI-adherent techniques. Coach later codes data into EPIC database.

Second 2-Day MI Training
- Time 2 Audio Tape. Trainee provides an audiotaped session with a consented offender/client.
- Tape is coded by trained MI coder to asses level of MI adherence; data entered into EPIC project database. Tape critique provided to trainee.
- Telephone coaching with trainee occurs to review tape critique and provide mentoring and coaching on MI techniques.
- Face-to-face coaching session occurs with consented offender/client. Coach observes and codes interaction during the interview and then provides feedback to trainee following the interview using MI-adherent techniques. Coach later codes data into EPIC database.
- Trainee practices with fellow trainees in Communities of Practice sessions.

The process of taping, coaching, and Communities of Practice continues as needed (usually 4 or 5 tapes) and as resources allow until trainees reach competency. Communities of Practice continue indefinitely as a skill maintenance activity.

Note. EPIC = Evidence-Based Practices Implementation for Capacity; MI = motivational interviewing.

The project began with 90 officers selected by the local agencies as change agents to receive MI training and coaching. The officers were selected based on their previous track records for being open, energetic, avid learners, and advocates of EBP. In training and coaching these officers in MI, EPIC attempts to incorporate the three key strategies for developing new skills.

First, it involves collaboration. EPIC is interdepartmental in nature, involving four different departments of state government (Department of Corrections, Judicial Branch-based Probation, Public Safety's Community Corrections, and Behavioral Health) and five divisions. EPIC has overlapping structures (an Advisory Committee, Transformation Team, Local Implementation Team) to enhance cross-agency collaboration and encourage collaboration between change agents and peers within local agencies and between officers and the people under their supervision.

Second, the project involves scaffolding skills and mastery. Research shows that becoming proficient in MI skills requires either coaching with a skilled MI practitioner or feedback from a trained independent coder, and preferably, both (Miller et al., 2004; Yahne et al., 2004). EPIC trainers and coaches work individually with officers to provide feedback and measurement of progress. They focus on both MI spirit and technical skills with the feedback and measurement.

The Motivational Interviewing Therapeutic Integrity-Revised (MITI-3.1.1) scales (Moyers, Martin, Manuel, Miller, & Ernst, 2010) were developed and validated (Moyers, Martin, Manuel, Hendrickson, & Miller, 2005) for measurement of adherence to MI. The MITI scales have established and widely recognized proficiency thresholds that are used to determine competency. The EPIC strategy for MI skill development used these scales in an iterative cycle of submitting session tapes to raters trained in the MITI rating protocols, and then receiving detailed graphic and narrative personal feedback. The feedback to agents includes a staff-client interaction report based on the scales, phone-coaching sessions, and face-to-face coaching after agents read their report (see Figure 1). The cycle generally takes between six to 12 weeks. EPIC aimed to bring over 50% of the original staff participants to full competency.

Third, the project involves efforts to improve organizational transparency. EPIC selects change agents who will form CoPs and model diverse, reflective, and flexible thinking. The creation of interdepartmental structures in EPIC helps in transformation of structures (interdepartmental Communities of Practice) and promotion of new norms of interdepartmental accountability. It is one thing for officers to record and submit a tape of their interactions within a supervision session; it is quite another thing to have a third party (the coach) directly observe and rate real-time performance in engaging clients. Organizational support of the officers participating in EPIC and creation of clear standards of performance assessment promote the trust needed to break old routines and develop new approaches. Ultimately, EPIC aims to foster collegial norms of support and coaching that are modeled at all levels, including leadership. By encouraging transparency of

the agency with respect to its goals, relationships with staff, and desire to change, EPIC involves improvements in the operation of the organization.

In practice, the three overlapping principles of collaboration, scaffolding, and transparency of operations are interdependent and cyclical. Good collaboration invites diversity and new, better ideas and innovation. Innovation begets more skill acquisition, as skill acquisition fosters innovation. Skill acquisition promotes transparency, which in turn invites more collaboration.

The key outcome of the changes, an outcome that is directly measurable, is improvements in the interactions of the officers with the offenders. This study thus tests for changes in officer interactions after a program to train and coach officers in a collaborative framework that has full support of agencies and departments. Effectiveness of EPIC should show in improved outcomes in MI. We next present the details of the methods used to evaluate the program and then present results from analysis of the data.

▧ Methods

Data

In collaboration with the state of Colorado, J-SAT (Justice System Assessment and Training), the external purveyor for the project, trained officers in five departments and 17 agencies to use MI. The departments include: 1) Community Corrections in the Office of Public Safety, 2) Behavioral Health in the Department of Human Services, 3) Parole in the Department of Corrections, 4) Institutions in the Department of Corrections, and 5) Probation Services in the Judicial Branch.

As part of the training, the agencies selected 90 officers, designated as change agents, who were considered informal leaders within the agencies. Their adoption of MI would likely help change the culture of the agency and facilitate adoption of MI by other staff. The sample was not random but was selected to maximize the effectiveness of the initial training.

These 90 officers underwent training and coaching. As part of the process, they provided audiotaped sessions with a consented offender/client. A trained MI coder assigned behavioral code ratings (MITI) to assess the level of MI adherence, and the scores were transformed into recommendations for the officer trainee. Over the telephone, a coach reviewed the tape scores and provided advice and mentoring on improving MI skills. A second tape was provided, which again went through the scoring and advising process. Officers completed up to four tapes. In addition, most officers participated in up to three face-to-face sessions with a coach and a consented offender/client. The coach sat in on the session, coded interaction between the officer and offender/client during the session, and provided face-to-face feedback to the officer after the session.

During the face-to-face coaching sessions the coding was limited to a simplified version of the MITI technical skill categories. All of the officers' utterances

within the session were coded into one of eight discrete categories: open questions, closed questions, affirmations, reflections, summarizations, elicitations of change talk, teaching/giving advice, and confrontations. The simpler format was adopted in order to facilitate the other immediate tasks the coach might face (e.g., assisting with role confusion or disagreement, observing and attending specific unique officer session goals, etc.). Live coding in the session has the advantage of allowing the coach and the officer to immediately reflect on the skill development measures after the supervision session concludes.

Codes from the taped and coached sessions were entered into a database. Data from at least one taped session are available for 89 of the 90 officers, with the number of sessions depending on the progress made by the officer. The vast majority completed at least two taped sessions, and most completed four. Sociodemographic information on the officers was also entered into the database.

The taped and face-to-face coaching session data are supplemented by one other data source. As part of a larger and separate project, all officers in the agencies were surveyed on their attitudes, satisfaction, and work orientations—all possible influences on skill acquisition. Officers more satisfied with their jobs, more positive about the organization, and more comfortable with casework may do better with the training. The 791 completing the survey included 64 of the officers going through the skills training. The survey data on these 64 supplemented the tape and coaching data, while the 25 subjects with missing data were either unavailable or unwilling to complete the survey.

Sociodemographic and Survey Measures

Demographic characteristic include gender, race, age, experience, and education. Gender is dummy coded with females equal to one, while race is dummy coded with whites equal to one and others equal to zero. Age and experience are measured in years and are highly correlated ($r = .502$). Education, measured as years of schooling, ranges from 12 to 20.

The survey data include five measures. The Employee Satisfaction Scale has 15 items with an alpha reliability of .939. The Likert Organizational Climate Scale has 18 items relating to officer ratings of the probation organization's current climate for leadership, motivation, communication, decisions, goals, and control. It has an alpha reliability of .956. The Probation and Parole Strategies Questionnaire defines three subscales with eight items each and measures views of probation officers on their roles as law enforcement officials (alpha = .675), resource brokers (alpha = .407), and case workers (alpha = .586). The resource broker scale holds together less well than the other two.

Tape and Coaching Evaluation Scales

The first measure comes from a general rating of proficiency made by the coaches. It has five categories: 1) never started; 2) dropped out: 3) slow, not making progress; 4) medium, underway with progress; and 5) rated competent or proficient. This rating, done as of December 2011, captures progress up to that date.

The other measures come from the Motivational Interviewing Treatment Integrity (MITI) coding recommendations (noted as such below) or were derived from research on the causal mechanisms in MI (Change Talk) or J-SAT MI training and coaching experience (Skill Balance). Eight key measures were used for the taped sessions, but only the first four listed below were completed for the face-to-face coaching sessions.

1. The reflection ratio measures the number of reflections per question (MITI-3).

2. The proportion open questions equals the number of open questions divided by total number of coded utterances (or self-contained and independent statements) (MITI-3).

3. The proportion closed questions equals the number of open questions divided by total number of coded utterances (or self-contained and independent statements). This is the only negative indicator—closed questions reflect poor use of MI (MITI-3).

4. The skill balance scale uses an algebraic formula based on the gross proportions of MI technical skills shown in officer interactions with the offenders (percentage points in excess of 28% for combined questions, 5% for teaching, any proportion of coded confrontations are deducted from an "ideal" score of 1.0). The skills that exceed prescribed thresholds are measured as discrepancies from the ideal and range from 0 to 1.

5. The proportion complex reflections divides the number of complex reflections by the total reflections (complex and simple) (MITI-3).

6. The MITI 3 global averages three items: Empathy; Direction; Spirit (average of Evocation, Collaboration, Autonomy/ Support) (MITI-3).

7. The MITI 5 global averages five items: Empathy; Direction; Evocation; Collaboration; Autonomy/ Support (MITI-3).

8. The *change talk* (CT) rate measures the number per hour of offender/client statements of the desire, ability, reason, need or commitment to change. In contrast to the other items, this measures offender rather than officer behavior and is associated with positive fluctuations in the client's motivation to change. Coders were trained to identify client change talk according to set of rules and criteria that have evolved since J-SAT received coding training from Terri Moyers, a leading researcher on the topic of coding MI behavioral skills and change talk. Because increases in client change talk are now consistently found related to more positive outcomes (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003; Hodgins, Ching, & McEwen, 2009), ability to elicit and increase change talk in client-counselor interactions is considered the causal mechanism in MI (Apodaca & Longabaugh, 2009; Miller & Rose, 2009; Moyers et al., 2007; Moyers, Martin, Houck, Christopher, & Tonigan, 2009).

Analysis

Given measures done before, during, and after the intervention, the analysis of change scores can test for improvement. Mean change scores from the first to the last taped session and from the first to the last live coaching session reflect the extent of skill acquisition. Tests for significance and percentage improvement help in interpreting the change. To examine variation in improvement, correlations relate officer sociodemographic characteristics, attitudes, and organizational background to the change scores. The analysis lastly examines correlations between measures of officer-client interactions with client use of change talk—a key to the success of MI.

❈ Results

Descriptive Statistics

The largest number of sample officers comes from parole (28%) and community corrections (27%), while the smallest (8%) comes from behavioral. In addition, 16% come from institutional and 20% from probation. Across all sectors, most sample officers are female (58%) and white (76%), with a mean age of 39, mean years of education of 16, and mean experience of 12 years (see Table 1). Most commonly view themselves as resource brokers and then as case workers, and they less often adopt a law enforcement orientation. Note, however, that only about two thirds of the sample completed the survey and have data for the attitudinal measures.

The means for the initial tape and coaching measures reflect expertise before the training and serve as baseline or pretraining scores. The change talk measure varies from 0 to 80, while the reflections-to-question ratio varies from about 0 to about 4 for the tape measures and from 0 to 20 for the coaching measures. Open questions, closed questions, complex reflections, and skill balance vary from 0 to 1, and the MITI scales vary from 1 to 5. Since MI requires specialized skills that few officers develop on their own, the means for the first session tend toward the low end of the scales.

How typical are the change agent officers who go through the training? The survey data, gathered widely across the organizations, allows for comparison of sociodemographic and attitudinal characteristics of the training participants with the nonparticipants. Comparisons reveal that those participating in the EPIC project are significantly younger (mean of 38.7 versus 41.3, $p < .04$), more educated (mean of 16.1 versus 15.6, $p < .02$), and less oriented to a law enforcement approach (mean of 1.1 versus 1.3, $p < .001$). For the other measures of gender, race, experience, satisfaction, organizational climate, resource-broker orientation, and caseworker orientation, those participating in the training do not differ significantly from others. Despite some selection, then, the officers studied are generally similar to Colorado corrections staff.

❈ Table 1

Descriptive Statistics

	N	Mean	SD	Min	Max
Sociodemographics					
Female	90	0.58	0.50	0	1
White	90	0.76	0.43	0	1
Age	86	38.69	8.28	24	59
Education	89	16.08	1.54	12	20
Experience	86	12.36	7.40	0	36
Attitudes					
Work satisfaction	64	3.62	0.65	1.87	4.87
Organization climate	64	11.31	3.32	5.67	18.26
Law enforcement orientation	64	1.07	0.41	0.25	2.00
Resource broker orientation	64	1.48	0.29	0.88	2.00
Case worker orientation	64	1.33	0.36	0.50	2.00
Taped Session Measures					
Change talk rate	89	15.57	20.10	0	80
Reflections/questions	89	0.73	0.70	0.04	3.94
Open questions	89	0.41	0.19	0.00	0.94
Closed questions	89	0.26	0.13	0.01	0.66
Complex reflections	89	0.27	0.23	0	1
MITI 3 item	89	3.03	1.05	1	5
MITI 5 item	89	2.85	1.18	1	5
Skill balance	89	0.33	0.31	0	0.98
Coaching Session Measures					
Reflections/questions	76	1.74	2.63	0.08	20
Open questions	76	0.52	0.24	0.08	1
Closed questions	76	0.20	0.13	0	0.53
Skill balance	76	0.54	0.33	0	1

Note. MITI = Motivational Interviewing Therapeutic Integrity-Revised.

Change Scores

The most general outcome variable comes from the December 2011 J-SAT ratings of proficiency. The largest category of sample officers was rated as making progress (47%), and the second largest as proficient (22%). However, nearly a third of the officers in the lowest three categories did less well. About 19% never started or did not complete the training, and 12% made little progress.

Figures on specific components of proficiency come from the means for the change scores. The absolute change equals the score on the last session minus the score on the first session. Note that the timing of the last session depends on the to-tal number of sessions completed. Of the 89 officers with tape scores, 8 completed

▨ Table 2

Change in Scores from First to Last Taped and Coaching Sessions

Outcome	N	Mean	Min	Max	Mean % Change	% Improved	% Not Improved
Change talk rate	81	13.33 **	-80.00	141.78	85.6%	58.0%	42.0%
Reflections/questions	81	1.71 ***	-0.66	11.41	235.8	84.0	16.0
Open questions	81	0.22 ***	-0.45	1.00	54.8	79.0	21.0
Closed questions	81	-0.14 ***	-0.66	0.21	-54.9	81.5	18.5
Complex reflections	81	0.26 ***	-0.63	0.87	93.4	85.2	14.8
MITI 3 item	81	0.83 ***	-2.33	3.89	27.3	80.2	19.8
MITI 5 item	81	0.99 ***	-2.00	4.00	34.8	79.0	21.0
Skill balance	81	0.41 ***	-0.66	1.00	124.4	84.0	16.0
Reflections/questions	68	1.21 **	-17.57	10.81	69.6	70.6	29.4
Open questions	68	0.09 *	-0.64	0.60	16.5	60.3	39.7
Closed questions	68	-0.07 ***	-0.43	0.30	-37.5	67.6	32.4
Skill balance	68	0.24 ***	-0.54	0.99	45.0	72.1	27.9

Note. MITI = Motivational Interviewing Therapeutic Integrity-Revised.
*$p < .05$. **$p < .01$. ***$p < .001$.

only one session (and are dropped from the change score analysis), 8 completed two sessions, 16 completed three sessions, and 57 completed four sessions. For the 76 officers with coaching sessions, 8 completed only one session (and are dropped from the change score analysis), 22 completed two sessions, and 46 completed three sessions. Table 2 shows mean, minimum, and maximum values of the change scores for the 81 tape and 68 coaching scores.

On average across the 81 officers with two or more scores, all tape measures show substantial, and statistically significant, improvement in the means. For example, the mean tape change talk rate increases by 13 units and the tape skill balance increases by .41. The tape measure of closed questions appropriately drops. The coaching measures also improve. To put the mean change scores on a percentage metric, each is divided by the mean score at the first tape and multiplied by 100. The next-to-last column in Table 2 lists the mean percentage gain. The largest mean gain, 236%, occurs for the tape reflection-to-question ratio and the next largest gain, 124%, occurs for the tape skill balance. All but two items increase by a third.

However, a minority of subjects does not improve—their change scores equal or fall below zero. The last columns in the table list the proportions of officers who improve on each of the measures and the proportions that don't. The percentage improving ranges from 58% to 85%. The percentages increase further when counting the eight dropouts as failing to improve. Fewer improve on the change talk rate, which reflects the statements of the offender, than on the measures of the statements of the officer.

The degree of improvement on scores among the officers occurs steadily from session to session. Table 3 lists the mean scores on the outcomes for each session among the 57 officers completing four taped sessions and the 46 officers completing three coaching sessions. For example, the tape change talk measure begins at a mean of 12.8, rises to 17.6 in the second session, 26.9 in the third session, and 27.2 in the fourth session. The tape skill balance measure has means across the four sessions of .28, .56, .67, and .79. Conversely, the two items on closed questions show steady declines.

The last columns give a more meaningful comparison across sessions by calculating the percentage change from one session to the next. One column calculates the percentage change from session one to two, the next column from session two to three, and the last column from session three to four (for the taped sessions only). For the tape and coaching measures, all sessions show improvement with one exception (session four for complex reflections). For the tape sessions, the largest improvement on average comes from session one to two and the subsequent sessions each show less improvement. The benefits of the tape sessions appear to level off as the number of sessions increases and officers get better. For the coaching sessions, the largest improvement occurs from session two to three. Perhaps it takes officers longer to get comfortable with the face-to-face coaching than the phone review of taped sessions. In any case, all sessions contribute to progress.

Table 3

Means for Taped and Coaching Sessions 1 to 4

| Outcome | Session Number | | | | % Change | | |
	1	2	3	4	1 to 2	2 to 3	3 to 4
Taped Session Measures							
Change talk rate	12.79	17.62	26.97	27.25	37.8%	53.1%	1.0%
Reflections/questions	0.70	1.24	1.83	2.82	77.9	47.3	54.6
Open questions	0.38	0.46	0.55	0.64	21.5	18.7	16.2
Complex reflections	0.27	0.51	0.57	0.57	88.4	13.3	-1.4
MITI 3 item	2.85	3.40	3.66	3.86	19.4	7.5	5.6
MITI 5 item	2.70	3.24	3.42	3.83	20.0	5.7	11.9
Skill balance	0.28	0.56	0.67	0.79	103.9	19.1	17.9
Taped sessions mean					52.7	23.5	15.1
Coaching Session Measures							
Reflections/questions	1.39	1.54	2.89		10.5	87.5	
Open questions	0.45	0.53	0.59		19.9	10.9	
Skill balance	0.43	0.59	0.77		35.8	31.5	
Coaching sessions mean					15.2	49.2	
Tape Closed Questions	0.27	0.20	0.14	0.10	-25.5	-28.1	-27.8
Coaching Closed Questions	0.24	0.19	0.13		-21.7	-30.9	

Note. MITI = Motivational Interviewing Therapeutic Integrity-Revised.

Predictors of Improvement

Despite general improvement, the officers vary in the degree of change. We can examine how demographic and attitudinal characteristics of the officers predict their improvement.

First, officers who do poorly in the first session improve the most over the later sessions. Table 4 lists the correlations of the change score for each measure with the time one score. All the correlations are negative, and many are quite strong. This indicates that the training most helps those with the fewest skills, and having many skills at the start leaves less room to improve.

Second, demographic and attitudinal characteristics generally do little to distinguish change in skills. Stepwise regressions that include the demographic variables (gender, race, age, education, and experience), agency sector (behavioral, community corrections, institutional, parole, and probation), and attitudinal variables (satisfaction, organization climate, correctional orientation) show few consistent influences. Table 4 lists the significant predictors ($p < .05$) and the sign of the coefficient. Whites change less for three outcomes, those with strong law enforcement orientations change more for three outcomes, behavioral health officers (alcohol and drug counselors) do worse than others on two outcomes, and probation officers do better than others for two outcomes. The lack of consistent influences suggests that background factors do little to either limit or facilitate improvement. All groups have the potential to change. Starting level proves more important for subsequent progress.

 Third, the number of sessions completed appropriately has positive correlations with the degree of improvement on the measures. For example, the number of sessions has a correlation of .45 with the change in tape skill balance and .38 in the coaching skill balance. Further, the number of sessions helps to reach proficiency: The mean number of tape or coaching sessions is 5.3 for those making slow progress, 6.2 for those making progress, and 6.6 for those having reached proficiency. Speed in the sessions is also beneficial: The mean weeks between sessions is 9.0 for those making slow progress, 6.5 for those making progress, and 5.3 for those having reached proficiency.

Two of the outcomes—proficiency rating and offender change talk rate—can be viewed as outcomes of MI skills. Table 5 lists the correlations of the other tape and coaching measures with these two outcomes. The positive correlations with the proficiency rating (except for the closed question items) confirm the value of the specific MI components to overall success. More usefully, the interview measures correlate positively with change talk (again, except for the closed measures). These correlations confirm claims that MI skills encourage offenders to open up enough to discuss the need to change and ways to accomplish this goal.

Not all the correlations are significant. The coaching session measures relate less well to the outcomes than the tape session measures. Because coaches conducting in vivo coding are under pressure to perform multiple tasks (e.g., follow the flow of the dialogue and interpersonal exchange verbally and nonverbally, note

◈ Table 4

Predictors of Taped and Coaching Session Measures

Outcomes	Correlation With Time 1 Measure	Regression Significant Predictors ($p < .05$)			
		1	2	3	4
Taped Session Measures					
Change talk rate	-0.68***	- white			
Reflections/questions	-0.19***				
Open questions	-0.68***				
Closed questions[a]	-0.81***	+ experience	+ law enforce		
Complex reflections	-0.65***	- organ. clim.			
MITI 3 item	-0.80***	+ probation	- white	- case worker	
MITI 5 item	-0.79***	- female	+ law enforce	+ law enforce	
Skill balance	-0.75***	- behavioral	- comm. corr.	+ probation	- behavioral
Coaching Session Measures					
Reflections/questions	-0.66***	- institutional	- white		
Open questions	-0.49***	+ female	+ satisfaction	+ institutional	
Closed questions	-0.66***	- satisfaction			
Skill balance	-0.77***				

Note. MITI = Motivational Interviewing Therapeutic Integrity-Revised.
[a] Top four only.
*$p < .05$. **$p < .01$. ***$p < .001$.

❈ Table 5

Correlations (and P-Values) of Proficiency Status and Change Talk Rate with Measures of Motivational Interviewing Skills

	Status	Change Talk Rate
Change Talk Rate	0.13	1.00
Taped Session Measures		
Reflections/questions	0.34 **	0.10
Open questions	0.25 *	0.35 **
Closed questions	-0.25 *	-0.35 **
Complex reflections	0.18	0.22
MITI 3 item	0.29 **	0.43 ***
MITI 5 item	0.20	0.42 ***
Skill balance	0.41 ***	0.23 *
Coaching Session Measures		
Reflections/questions	0.11	0.09
Open questions	0.07	-0.05
Closed questions	-0.07	-0.07
Skill balance	-0.06	0.04

Note. MITI = Motivational Interviewing Therapeutic Integrity-Revised.
*$p < .05$.   **$p < .01$.   ***$p < .001$.

and attend to coaching issues, conduct the behavioral coding) without the benefit of any tape playback, this finding is not surprising. Also, among the tape session measures, the reflections-to-questions ratio and the proportion complex reflections relate less closely to change talk than the other measures. The MITI global scales in particular correlate with the change talk rate measure. This latter finding suggests that interpersonal staff demeanors (global scales) associated with respect for client autonomy, interest in collaboration, effort to evoke the individual's solutions, and facilitate improvement in client attitudes towards change may, in correctional settings, be just as important, or more important, than staff's MI technical skills.

❈   Discussion

This study offers empirical evidence of the ability of multiple correctional agencies to effectively implement a program of MI for staff. Transferring knowledge and skills gained in the classroom to the work setting is a significant challenge across business and human service sectors. Without post-training enrichments (e.g., booster sessions, clinical supervision, coaching), skill and knowledge decay sets in quickly in the wake of formal training. Even with enrichments, the transfer

of training rarely reaches fidelity levels sufficient for practitioners to effect changes in their clients and customers at any significant scale (Wang, 2001). To help overcome this problem, the EPIC project includes a combination of training/coaching and precise measurement of the use of MI skills. Unlike previous MI implementation studies that relied upon training workshops as the primary staff intervention (Miller & Mount, 2001; Walters, Matson, Baer, & Ziedonis, 2005; Madson, Loignon, & Lane, 2008), this study found steady improvement on a variety of dimensions and across correctional staff with diverse sociodemographic characteristics, attitudes, and specializations.

The results on average showed substantial and statistically significant improvement on several indicators of effective use of MI. The officers who improved most began with lower skills, indicating the ability of the training to help those most inexperienced with MI. Indeed, officers with varied educational degrees, levels of job satisfaction, and orientations toward law enforcement enjoyed similar skill acquisition. More important for success was the adoption of an attitude of respect for client autonomy and interest in collaboration.

The findings surprisingly showed greater benefit from use of session tapes and subsequent feedback than from live coaching sessions. This result needs to be confirmed by additional research, as immediate feedback from the coaching sessions would be expected to be most beneficial. Yet, the finding also implies that submission of tapes, particularly multiple tapes, has value. Feedback from the tapes builds on previous learning and moves officers closer to the best practices. To encourage continuation, the feedback sessions may need to strongly emphasize the value of the process and urge continued collaboration.

The results confirm, with some exceptions, the findings of the research literature on MI. The generally positive results indicate that the MI training was able to overcome problems of inertia and resistance to new correctional procedures, while maintaining fidelity to the principles of MI. However, besides the weaker benefits of live coaching, the results produce some other unexpected results. For example, although previous studies have found that the proportion of complex reflections correlate strongly with client change, the results here found little correlation between the two measures. This result may come from the small sample and the characteristics of the Colorado organization and subjects.

As MI skills improved across this interdepartmental cohort of corrections practitioners, the agents developed new abilities to elicit and reinforce client/offender "change talk" or self-motivating statements, and there was a corresponding increase in the behavioral ratings of client change talk by independent raters. Elicitation of change talk is considered a causal and primary mechanism for how MI works to produce reliable positive effects. These findings thus portray a rather complete picture of how the MI innovation can be transferred into practice and brought to scale. The empirical evidence contributes to the broad literature on implementation science as well as to the narrower literature on improving the ways correctional staff deal with offenders.

The results from the EPIC project are consistent with theoretical arguments that effective staff development depends on three overlapping and interdependent principles: collaboration; scaffolding within a hierarchy of competency and skill sets; and transparency of operations. Staff development systems can take many forms but regardless of the form, they invariably benefit from adherence to these three principles.

The challenge in implementing the principles can be substantial. In this case, the EPIC project in Colorado involves much complexity: It is a joint collaboration between four different state government departments to intentionally and strategically build their respective capacities for implementation. The project wields a multipronged strategy that engages staff skills, roles, and motivation, as well as the organizational cultures within 17 different local agency pilot sites. There is no precedent for such a capacity-building initiative in criminal justice systems.

The available data allowed for analysis of up to four audiotaped sessions and three coaching sessions, but some preliminary figures on proficiency (but not other measures) suggest the potential to do even better with the program. Scale-up is often defined as 50% competency (Fixsen, Blase, Naoom, & Van Dyke, 2010, p. 8), and Figure 2 shows that the participants in the Colorado EPIC program have reached that goal after eight sessions (approximately 16 months after the start of the program). The key figures on percent cumulative competency build slowly but improve steadily. Many do not reach competency, but the 50% scale line represents impressive success in implementing a complex procedure like MI. On average, participants required four to five cycles of taping and coaching to make it to competency.

▧ Figure 2

Correlations (and P-Values) of Proficiency Status and Change Talk Rate with Measures of Motivational Interviewing Skills
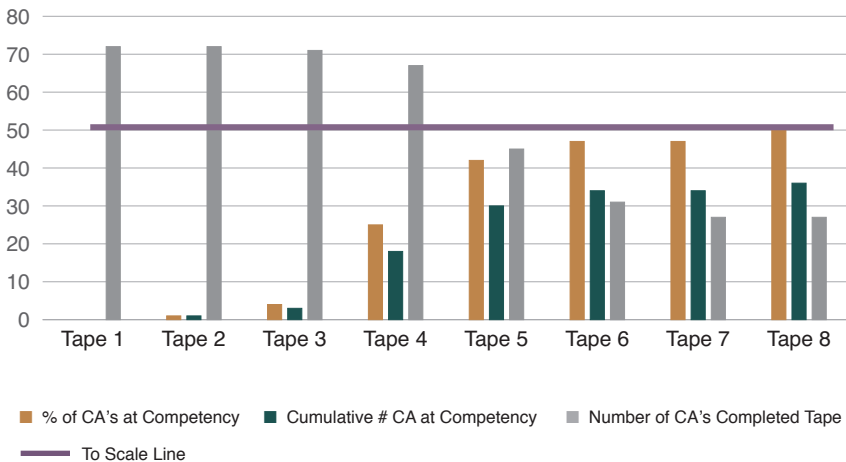
The research on MI in correctional settings is emergent and formative. Findings in a systematic review on MI with offenders (McMurran, 2009) strongly suggest that the use of MI can lead to both better retention and engagement in treatment, as well as enhanced motivation for change. However, McMurran (2009, p. 13) notes that, "regarding (offender) behavioral change, the effects are more equivocal." The review concludes by advocating for more and better research, with particular attention to assessing the fidelity and integrity of the MI innovation that is delivered. Few of the 19 individual studies McMurran compiled had incorporated repeated fidelity measures. The implication is the risk of type III error—existing research evaluating an intervention that doesn't exist (with well-established fidelity). The antidote, of course, is use of reliable, repeated fidelity measures.

A systematic review that focused specifically on training in MI identified limitations in both training format design as well as quality of training evaluations (Madson et al., 2008). This review also indicated outcomes from training were in general favorable and that future use of the eight MI learning stages (Miller & Moyers, 2007) holds promise for guiding future training and research. The authors finish their review with recommendations for investigating and improving methods for transferring MI training into practice that emphasize measures and post-training enrichments (e.g., coaching, clinical supervision, communities of practice) to support sustainable skill development.

The EPIC project sought to embody and implement strategies to fulfill these recommendations. Collaboration, scaffolding, and transparency are neither idle nor academic principles, nor are they easy to implement in corrections environments. However, the success that has been achieved thus far in the project can easily be traced and attributed to these principles.

We recommend that other corrections jurisdictions contemplating scaling-up MI:

1) Form an interdepartmental steering group to guide and transfer learning;

2) Use an external or internal purveyor (Fixsen et al, 2005, p 14) who has amassed the necessary experience and technical skills to provide specific technical assistance, such as tape coding and initial training of coaches;

3) Devise strategies for working with mid-managers that involve them in addressing issues related to the coaching, performance assessment, and facilitative administrative support drivers in the Fixsen et al. (2005) model;

4) Adopt flexible and creative tactics for facilitating sustainable, local communities of practice; and,

5) Learn to live with "moving targets," as the goal horizon will shift periodically as staff and the cultures they work in shift their skills, attitudes, and orientations.

Future research on the EPIC program needs to explore the study implications with additional data. First, follow-up data can evaluate the use of MI after the end of

the program. Successful training should lead to continued use of the techniques. Second, data need to be gathered on use of MI by correctional staff that did not participate in the training and coaching. Scale-up should have spillover benefits as trained staff encourage, and even teach, others to use the techniques; users should reach a critical mass such that norms promote the desire among other staff members to adopt MI. Third, similar programs in other states are being implemented, and these need to be studied to gauge the generalizability of the results outside of Colorado. Fourth, and perhaps most importantly, data on offender recidivism need to be linked to measures of use of MI by supervising correctional staff. The ultimate goal is to obtain evidence to indicate that competency in MI and elicitation of change talk by offenders reduces recidivism. Adoption of MI is thus a means to an end rather than an end in itself.

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Brad Bogue is the Director of Justice System Assessment & Training. J-SAT is an organization devoted to furthering the implementation of evidence-based practices within corrections. Mr. Bogue has coauthored books on case planning and motivational interviewing in corrections. He is currently working on strategies for empowering mid-managers in supporting their direct reports in the adaptive change.

Fred Pampel is Professor of Sociology Emeritus and Senior Research Associate of the Institute of Behavioral Science at the University of Colorado Boulder. He directs the University of Colorado Population Center, helps manage the Blueprints Program for Healthy Youth Development, and does research on health, crime, tobacco use, and public opinion.

Diane Pasini-Hill has been a researcher and supervisor with the Colorado Division of Criminal Justice, Office of Research and Statistics (ORS), for the past 14 years. As the Special Projects Manager for the ORS, Ms. Pasini-Hill has managed and coauthored reports on several ORS evaluation projects, such as three Juvenile Assistance Grant-funded evaluations of the Youthful Offender System operated out of the Colorado Department of Corrections (CDOC), the Community-Based Management Pilot Programs for Youth with Mental Illness Involved in the Criminal Justice System, the Sex Offender Therapeutic Community in CDOC, and the John Eachon Re-Entry Program. She was the initial Project Manager for the first three years of the Crisis Intervention Teams in Colorado Initiative. Ms. Pasini-Hill currently manages the Evidence-Based Implementation for Capacity project, the focus of this paper, for the Colorado Department of Public Safety. She earned her bachelor's degree in criminal justice and her master's degree in counseling psychology and counselor education.