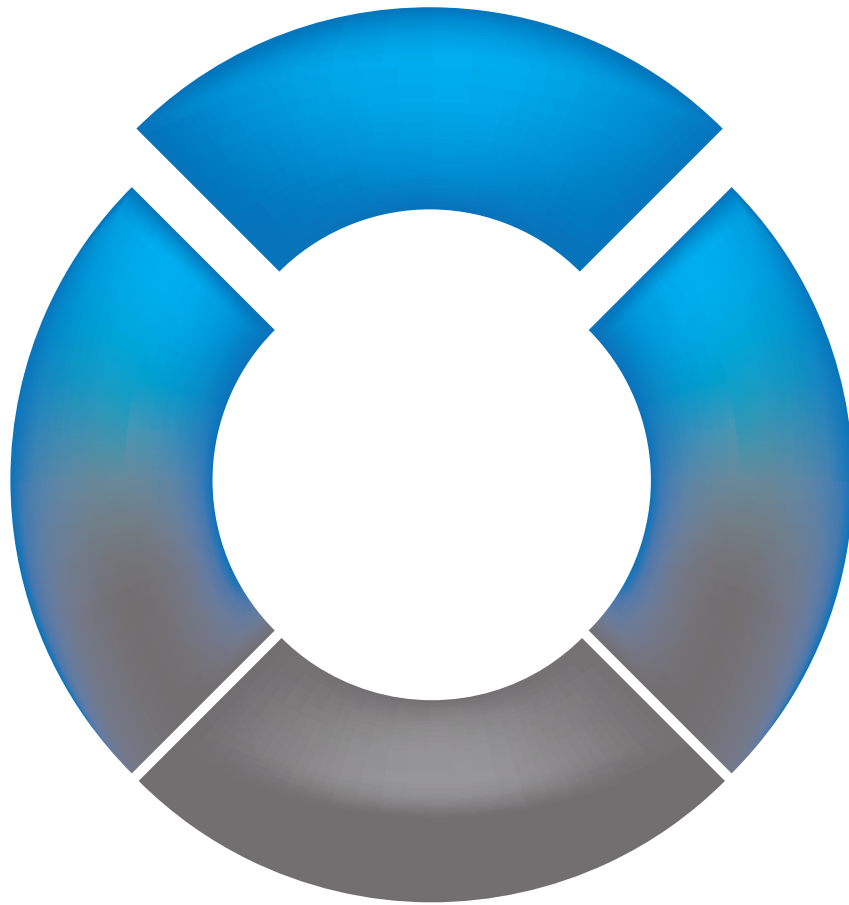


Health Coaching Performance Assessment™ (HCPA)

A New Tool for Benchmarking & Improving Effectiveness



Preface

Chronic diseases are responsible for most disability and premature death, as well as 75% of direct health care costs in the U.S. Of avoidable health care spending, 85% is generally attributed to behavioral factors such as lifestyle, adherence and disease self-care. Further, lifestyle factors including overeating, poor diet, lack of physical activity and tobacco use are primary risk factors for most of today's chronic diseases. Yet, as the Institute of Medicine and the World Health Organization have emphasized, our health care workforce is not well prepared to address modern threats to public health, which are often behavioral, not medical.

Stemming the immense human and financial costs of chronic disease will require the application of practical, effective solutions for engaging and supporting people in health behavior change. Fortunately, we have decades of research from the behavioral sciences to guide us. To what extent are today's wellness, disease management and care management programs leveraging these best practice health coaching approaches and interventions? Since most of these programs do not fully define the service they are offering—or measure staff proficiency or application of best practice approaches—it's impossible to gauge.

It is concerning that “health coaching” has become a catchall term for practically any type of intervention, delivered by anyone, directed towards individuals focused on personal growth, lifestyle management, adherence or disease self-care. In an era when discussions of treatment effectiveness and purchaser value dominate the health care debate, it is disconcerting to see popular health coaching training models and programs, marketed by lay corporate or life coaches with no input, review or evaluation by credentialed and recognized experts in health behavior change. We believe that this is a missed opportunity to leverage proven solutions for improving public health and stemming avoidable health care costs.

Where there has been progress in the measurement of wellness, disease management and care management program outcomes or return on investment (ROI), the development of practice standards for improving these outcomes has lagged. Yet, it seems evident that clinicians and health care organizations that build

and continuously improve and measure proficiency in these best practice approaches will have a competitive market advantage over others because they will be better equipped to address the causes, rather than the consequences, of avoidable health care costs.

HealthSciences Institute has spearheaded a project to design, develop and validate a tool designed for evaluating the quality and effectiveness of health coaching services. Our goal is to “raise the bar” on health coaching practice and advocate for validated, best practice approaches, transparency, and continuous performance improvement. We believe purchasers and consumers who are funding or receiving these services should be able to benchmark and compare the quality of wellness, disease management or care management services—as they do any other health care service. We also believe that practitioners and programs could benefit from a new tool to support them in delivering the best value that patients and purchasers expect.

HealthSciences Institute enlisted an expert team. Dr. Susan Butterworth, an NIH-funded authority on health coaching best practice and Associate Professor with the Oregon Health & Science University School of Medicine, has led this team. Her team included a team of Motivational Interviewing Network of Trainers (MINT) professionals and Motivational Interviewing Treatment Integrity (MITI) coding specialists.

Dr. Ariel Linden was selected to independently conduct inter-rater reliability and criterion validity analyses of this tool: the Health Coaching Performance Assessment (HCPA). Although Dr. Linden is best known for his work in evaluating disease management program outcomes and ROI, he has also co-authored seminal publications on the science and practice of health coaching in health care settings.

HealthSciences has been fortunate to have a research team of this caliber leading this effort. We welcome your feedback and suggestions: info@HealthSciences.org.

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Acknowledgments

We acknowledge the research and coding tool development activities that preceded this effort and provided the base. In particular, we thank the authors of the Motivational Interviewing Skill Code (MISC): William R. Miller, Theresa B. Moyers, Denise Ernst, and Paul Amrhein; and the authors for the Motivational Interviewing Treatment Integrity (MITI) instrument: Theresa Moyers, Tim Martin, J.K. Manuel, William Miller, and Denise Ernst. In addition, we acknowledge the contributions of the MI coders and MINT trainers who assisted in the validation of this tool: Carol DeFrancesco, Ali Hall, and Debby Westcott. We also acknowledge the contributions of HealthSciences Institute staff who played key roles in this project including information technology staff team lead Robert Trench who led design and development of the web-based data submission portal, analytics and reporting, and Pablo Maida, who provided feedback throughout the project.

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Introduction

HealthSciences Institute has undertaken a significant project to develop and validate a tool to assist health plans, population health improvement organizations, and health care providers in assessing the health coaching proficiency and performance of health, disease management and care management staff. This tool, the Health Coaching Performance Assessment (HCPA), is based on the most current behavior change science and best practice health coaching components.

In the sections below, we present a systematic overview of the need for this tool, the rationale behind each of its components, and the validation process. Lastly, we present a sample HCPA report that provides an evaluation of the coach's current performance, along with feedback on strengths and areas for professional development.

Although the research in the behavior change literature tends to refer to "clients", we will refer instead to "patients," as is more fitting for health care nomenclature. In addition, we will use the terms "coding" (versus "rating") and "coders" (versus "raters") since these are universally used in association with tools that are used to measure health coaching components. "Health care organizations" and "health care providers" refer to those in primary care, home health, hospital, health plan and long-term care settings; as well as to wellness, disease management and care management vendors serving employers, health plans or state health care agencies.

Background

Health Coaching as a Viable Intervention

Unhealthy lifestyle choices, such as a lack of physical activity, deficient dietary patterns, tobacco use, and substance abuse, are among the leading indicators of morbidity and mortality in the United States [1]. Conversely, it is clear that healthy behavioral practices can prevent chronic illness and improve management of common chronic conditions [2]. Notably, behavior change theories and models have evolved over the last four decades, moving health education interventions away from the traditional information-based and advice-giving model to one that embraces and addresses the complex interaction of motivations, cues to action, perception of

HEALTH BEHAVIOR CHANGE SCIENCE

Over four decades of clinical research and practice from the fields of behavioral medicine, health psychology, addictions, and behavior change can be leveraged to improve public health and address the behavioral factors that drive 85% of avoidable health care spending.

benefits and consequences, environmental and cultural influences, expectancies, self-efficacy, state of readiness to change, ambivalence, and implementation intentions [3]. Concurrently, the development and implementation of interventions that improve or modify health behaviors through health, disease, and care management programs has become a widely advocated and effective means to reduce health risks, improve self-management of chronic illness, reduce medical costs, increase productivity, and improve quality of life [1,3,4-7]. Such programs are typically implemented in workplace, commercial, or community health settings. Increasingly, primary care clinics are also implementing formal care management programs as well as part of a medical home model [8,9].

Frequently, health care organizations include health coaching as an intervention to address lifestyle management and treatment adherence issues. Health coaching has recently gained popularity due to its potential to address multiple behaviors, health

risks, and disease self-care. For example, a review of health-related outcomes in worksite health management concluded that programs that offer individualized, risk-reduction counseling targeted to high-risk employees are more likely to result in decreased health risks [10].

There are currently no standards for being a health coach, thus people calling themselves such range from credentialed health professionals to untrained individuals espousing the benefits of their own health and lifestyle philosophies on personal web sites [11]. Among the many health coach training and certification programs available today, most are based on life coaching models or popular psychological theories, and few have been developed or evaluated by specialists in health-related behavior change or chronic care. In the context of this white paper, health coaching is defined as “a behavioral health intervention that facilitates participants in establishing and attaining health-promoting goals in order to change lifestyle-related behaviors, with the intent of reducing health risks, improving self-management of chronic conditions, and increasing health-related quality of life” [12].

Best Practice in Health Coaching

In a recent review of health coaching, although there was scattered support for various modalities, Motivational Interviewing (MI) was the only health coaching approach to be fully described and consistently demonstrated as causally and independently associated with positive behavioral outcomes [13]. There have been thousands of studies conducted over the past thirty years, including 300 clinical trials

MOTIVATIONAL INTERVIEWING

MI is the only health coaching approach to be fully described and consistently demonstrated as causally and independently associated with positive behavioral outcomes.

with rigorous methodology, demonstrating its efficacy [14]. Another factor that is unique to MI in comparison with other health coaching models is the existence of several validated coding tools to ensure fidelity of the technique, assist in staff development, and provide consistency in intervention delivery; the most commonly used include the Motivational Interviewing Skill Code (MISC) [15], the Motivational Interviewing Treatment Integrity (MITI) [16], and, for a brief intervention adaptation of MI, the Behavior Change Counseling Index (BECCI) [17].

MI is a goal-oriented, client-centered counseling style for helping clients to explore and resolve ambivalence about behavior change [18]. The MI approach has been incorporated across diverse populations, settings and health topics. Its efficacy was first demonstrated in the treatment of alcohol and drug addiction. Continued research and several recent meta-analyses/reviews have solidified this patient-centered approach [19-21]. MI has been shown to be effective in improving general health status or well-being, promoting physical activity, improving nutritional habits, encouraging medication adherence, and managing chronic conditions such as hypertension, hypercholesterolemia, obesity and diabetes [14].

The MI-based health coaching approach differs greatly from the traditional health education model used predominantly in health care settings and, generally, from other popular health coaching approaches [13]. On page 10, Figure 1 demonstrates a

BEST PRACTICE

A systematic review of the literature demonstrates that MI outperforms traditional advice-giving in the treatment of a broad range of behavioral problems and diseases.

comparison between the MI approach, which relies on principles of collaboration, empathy, and support for autonomy, and an approach based on the Medical Model, which relies on confrontation, education and authority.

Thus MI is not based on the information model, does not rely on information-sharing, advice-giving or scare tactics, and is not confrontational, forceful, guilt-inducing, or authoritarian; rather it is shaped by an understanding of the factors that trigger change [22]. A systematic review of the literature has demonstrated that MI outperforms traditional advice-giving in the treatment of a broad range of behavioral problems and diseases [23].



Figure 1: Contrasting Styles

MI targets the higher-order constructs of motivation, ambivalence, and other barriers that prevent people from acting on treatment guidelines and making lifestyle changes [3]. Below we will discuss the research on the underlying mechanisms of MI and why the emphasis on Change Talk sets this approach apart from other health coaching approaches. More information on MI can be found at www.motivationalinterview.net.

Statement of Problem

Lack of an Evidence-based Approach

Today, health care organizations lack an evidence-based approach to address treatment adherence, disease self-management and lifestyle management issues with patients [8,9]. Generally, health care professionals do not receive appropriate instruction or training in health coaching best practice and, instead, use traditional methods of patient education that consist largely of prescribing, advising and

FIRST, DO NO HARM!

Generally, health care professionals do not receive appropriate instruction or training in health coaching best practice; as a result, they may use patient education or health coaching approaches that are counterproductive to the change process.

scolding [24]. Without training and coaching in more effective approaches, health care practitioners naturally fall back to what they know best. From this perspective, poor patient engagement or follow-through is viewed primarily as a patient problem, rather than an ineffectual health coaching approach. There is evidence that such attitudes will not only limit progress, but are actually correlated with negative behavioral and clinical outcomes [25]. Additionally, as depicted in Figure 2 on page 12, a negative cycle can be initiated, as indicated by a study where higher patient resistance to quitting smoking led to an increase in confrontational and other negative behaviors in health professionals attempting to promote behavior change [26].

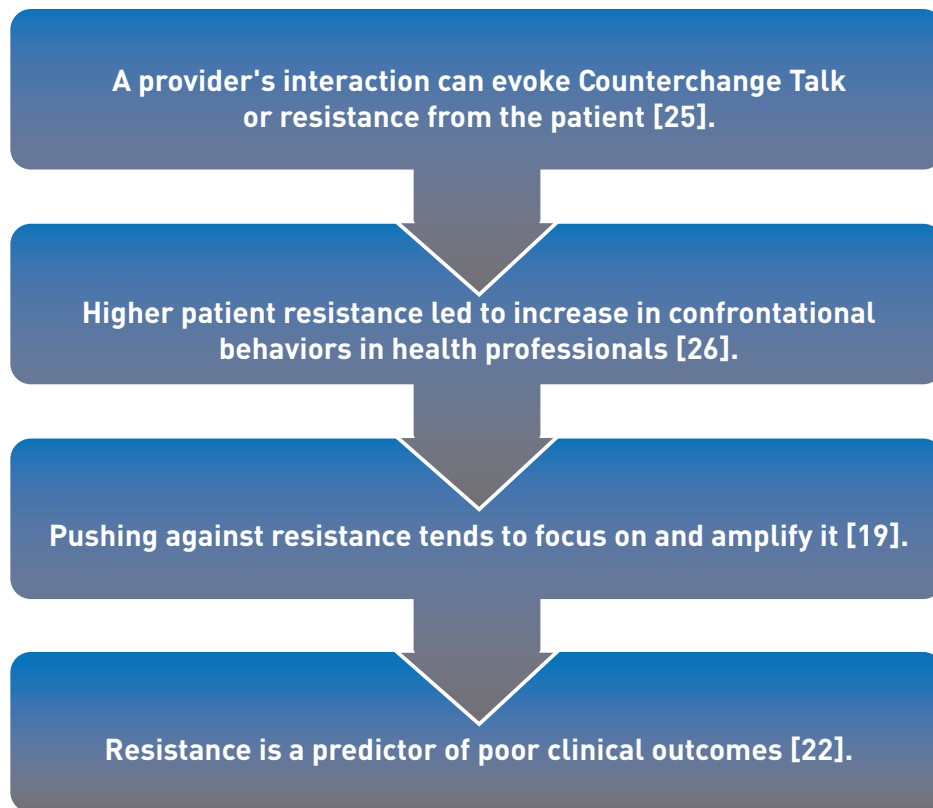


Figure 2: Research on Resistance

While health coaching is a viable and promising approach for addressing the behavior factors responsible for 85% of avoidable health care costs, health coaching must be an evidence-based practice like all medical and behavioral health care services. Moreover, the recent movement towards performance-based and bundled payment methods requires that all health care organizations document the effectiveness and measurable value of the services they deliver. They must also work efficiently—given ever-rising productivity demands. Fortunately there are decades of peer-reviewed research from the fields of behavioral medicine and health psychology to guide an effective and efficient health coaching practice. Moreover, as stated in the Background section, MI is the most standardized and proven health coaching practice to date.

Lack of a Comprehensive Training to Build Skill Set

When health coaching training is provided, there is generally a lack of a comprehensive curriculum and appropriate follow-up activities to ensure that there

is a significant change in skill set. The challenges associated with building proficiency in an evidence-based coaching approach such as MI are twofold. Typically, health care providers learn clinical skills in a straightforward way. “See one, do one, teach one” is the typical mantra for medical education. MI-based health coaching is considerably more complex than this [27]. The second challenge is that this approach is counter-intuitive due to training in the traditional medical model as described above. This necessitates a change in one’s philosophy about, and perceptions of, the roles of the practitioner and patient before understanding and successfully mastering an MI-based health coaching approach.

Given these challenges, making the paradigm shift from a traditional medical or patient education-oriented approach to a more effective, patient-centered approach requires strong leadership and sustained organizational commitment. Stand-alone continuing education or inservice training programs absent this support are unlikely to yield measurable change or value. Research on skill development in MI is unequivocal on this point: a single workshop or training by webinar, video or books is insufficient to change one’s skill set [28,29]. Instead, proficiency typically requires an immersion experience, such as a two-day workshop first, followed by regular practice with feedback and coaching over time [28]. The most effective feedback is that which is delivered after listening to an actual or recorded session of the coach and patient. In addition, the Motivational Interviewing Network of Trainers (MINT) highly recommends using a validated coding tool to assist in this coaching and feedback process [30].

The MI research is well-aligned with the research and best practices in the field of learning and organization development, including the American Society of Training and Development (ASTD), that emphasize the limitations of legacy stand-alone

LEARNING MI

Miller and Rollnick [27] describe the process of learning the MI approach: “MI is simple but not easy. This is true of the foundational client-centered skill of accurate empathy (reflective listening), as well as for the broader clinical method of MI. Watch a skillful clinician providing MI, and it looks like a smoothly flowing conversation in which the client happens to become increasingly motivated for change. In actual practice, MI involves quite a complex set of skills that are used flexibly, responding to moment-to-moment changes in what the client says. Learning MI is rather like learning to play a complex sport or a musical instrument. Going to an initial 2-day training can provide a certain head start, but real skill and comfort grow through disciplined practice with feedback and coaching from a knowledgeable guide... MI is not a trick or a technique that is easily learned and mastered. It involves the conscious and disciplined use of specific communication principles and strategies to evoke the person’s own motivations for change.” p. 135

training programs that do not provide sufficient attention to competency development and assessment, transfer of new learning to the job, and return on investment (ROI) of training costs [31]. Unless MI proficiency can be developed, measured and sustained, it will simply not be possible for organizations to achieve the types of improvements in patient-level outcomes demonstrated in MI clinical research trials.

Lack of a Validated Tool to Measure Fidelity

Few health care organizations use any validated tool to assess the fidelity of their health coaching services to evidence-based health coaching best practices [13, 29]. Fidelity is defined as “the extent to which delivery of an intervention adheres to the

Few health care organizations use any validated tool to assess the fidelity of their services, wellness, disease management or care management to evidence-based health coaching best practices.

protocol or program model originally developed” [32]. Fidelity criteria are necessary to ensure that the services being studied are the same across staff/sites or that significant differences are documented to allow opportunities to identify the need for remedial or additional training for staff [32]. Improving the outcomes and return on investment (ROI) of wellness, disease management and care management programs requires a focus on the type and quality of services actually being delivered. Fidelity has long been considered an especially important component in program evaluation and outcome research for the following reasons: (1) it is important to ensure model adherence; (2) it is important to confirm the treatment variable (the program) occurred as planned; and (3) if significant outcomes are not achieved in the intervention, it is important to identify if the intervention itself is not effective or if the intervention model (in this case, evidence-based health coaching) was not followed [33].

In addition, fidelity is critically important for government and employer purchasers who often must rely on provider or vendor marketing claims rather than objective evidence of vendor or provider service quality. While physicians and other health care providers have long been benchmarked or evaluated with regard to adherence with evidence-based medical guidelines, there is less transparency and few options for assessing the service quality of wellness, disease management and care

management providers. Despite continued scrutiny of the ROI of these programs, there still is surprisingly little known about what services are actually being delivered to consumers, and the proficiency of the professionals delivering them. This seems a major barrier to progress and a missed opportunity to improve patient and purchaser value.

In order to measure/assess fidelity in research or practice settings, there are multiple components that must be present. First, the intervention or approach should be standardized and proven as effective by independent review. Next, a valid (and reliable) coding tool specific for that intervention must be used. Another important factor is ensuring that the coders are experienced with a high degree of inter-rater reliability—which can be a challenging process [34]. Lastly, the coding process should include random health coaching encounters coded systematically over time to ensure continuous quality.

Current Lack of a Coding Tool for Health Care Encounters

As detailed in Table 1 below, there are multiple validated coding tools that were developed to be used in conjunction with the MI approach.

	Designed for Health Care	Behavior Counts	Change Talk	MIC & MIIN Behavior	Provides Feedback
MISC [13]		●	●	●	
MITI [14]		●		●	
BECCI [15]	●			● (MIC only)	
MIA-STEP [35]		●		●	
GROMIT [36]				●	
SCOPE [37]		●	●	●	
PEPA [38]		●			
REM [39]	●			● (Empathy only)	

Table 1: Current Coding Tools

Current validated coding tools that function well in assessing fidelity to MI are not ideal for health care settings for several reasons. Most were developed by researchers/practitioners in the counseling and addiction realm where 50-minute encounters are common. The only two tools that were developed for the health care were developed as companion tools to adaptations of MI and lack the robustness to assess fidelity to the evidence-based approach. Most do not include the component of patient “Change Talk,” where the most compelling research in MI is focused (see Behavior Change Research section below). Lastly, no tool currently provides a systematic way to provide formal feedback and interpretation of the results to the coach.

A New Tool for Benchmarking & Improving Effectiveness

Need for a Comprehensive, Validated Coding Tool for Health Care Encounters

HealthSciences Institute discerned a need for a validated coding tool specifically for health care encounters; one that is comprehensive, based on the most current behavior change science, and provides a formal process to deliver feedback to the health coach. In short, this need is based on the following reasons: (1) health coaching is an important intervention in direct health care, as well as wellness, disease management and care management settings; (2) assessment of fidelity to the health coaching approach is needed for quality assurance, professional development, and program evaluation; (3) clinicians' self-reported proficiency in delivering MI has been found to be unrelated to actual practice proficiency ratings by skilled coders [28,40], and yet it is the latter ratings that predict treatment outcome; and (4) current coding tools that have been developed for health care encounters are not comprehensive, do not address Change Talk, nor do they provide feedback to the coach.

Behavior Change Research

Although more research is needed, there has been an upsurge in behavior change research that addresses the underlying mechanisms of evidence-based health coaching or MI. It is important to note that most of this research has been undertaken in the counseling and addiction disciplines; therefore there is a compelling need to replicate it in the health care setting, as encounters in health care have important differences. However, at this point, there are some clear themes that have emerged from the literature that serve to guide the most critical components of a new coding tool.

The research can be divided into two types of findings—one regarding the behaviors/type of talk from the patient during an encounter with a practitioner, and the other regarding the behaviors/type of talk from the practitioner during an encounter with a patient.

Patient Behaviors

Possibly the most important research to date is research that has identified different types of patient talk that predicts clinical outcome. Miller [41], followed by Amrhein [42], identified what is now called Counterchange Talk and Change Talk. Very simply, Counterchange Talk consists of statements for the status quo or against change; whereas Change Talk consists of statements for change—the desire, ability, reasons and need for change—along with commitment, activation, and steps being taken towards change. Over the past eight years, multiple studies have indicated that client Change Talk that emerges during an encounter is a positive predictor of change and is correlated with positive clinical outcome; whereas Counterchange Talk that emerges during an encounter is a negative predictor of change and is correlated with negative clinical outcomes [42, 43-50]. Interestingly enough, Moyers et al. [48] found that although Change Talk is predictive of better outcomes, it frequently occurs nearly simultaneously with Counterchange Talk. (See sidebar on Patient Talk for more discussion of Counterchange Talk.)

As depicted in Figure 3, the result of this research has been an increased emphasis for training practitioners to evoke Change Talk from the patient in order to increase commitment strength to the change in order to increase the odds of the individual taking action. This underlying mechanism of MI is thought to be a key element behind the efficacy of the approach and is backed by two theories in behavior change science: (1) Implementation Intentions Model [51], which addresses the importance of addressing intentions in promoting behavior change; and (2) Bem's Self-Perception Theory [52], which indicates that people can, essentially, talk themselves into feeling more strongly about one side of their ambivalence and towards taking action if given encouragement to do so.

PATIENT TALK

There are three recognized types of patient talk.

Change Talk: Statements in favor of change. The more Change Talk that is evoked during an encounter, the higher the commitment strength to the change and the more likely a positive clinical outcome. An important skill in MI is evoking and responding to Change Talk. This emphasis on evocation of Change Talk is what separates MI from other health coaching approaches.

Sustain Talk: Statements that represent ambivalence about change. This is a type of Counterchange Talk that is a normal and expected part of the change process. Practitioners are taught in MI to use this talk as a guide to validate the challenges and help the patient to work through ambivalence to more clearly define what is of value and what the benefit of change might be as compared with the benefits of staying the same.

Resistance: Statements that represent an interpersonal tension between the patient and practitioner when the practitioner fails to resist the righting reflex (need to direct or fix) and falls back into the traditional Medical Model approach. In MI, this type of Counterchange Talk is predictive of negative clinical outcome and an indicator for the practitioner to change his/her approach.

Practitioner Behaviors

It follows logically then that much of the research about practitioner behavior tests the premise that the practitioner can positively or negatively affect those important aspects of patient behavior. This practitioner behavior is known as either MI-adherent or consistent with MI (MIC) or MI non-adherent or inconsistent with MI (MIIN).

MIC behaviors include asking for permission before sharing information or advice; validating a patient's position, barrier to change or challenging situation; supporting the patient's control or autonomy; and providing affirmations that address strengths or patient activation [18,53]. MIC generally entails practitioner behaviors that reflect the MI Spirit, namely evocation, collaboration, support for autonomy, empathy, goal orientation and, most recently added, compassion [30]. Although variables constituting MI Spirit do not by themselves appear to be directly responsible for MI's effectiveness [50], there is good evidence that they do predict patient engagement and mixed evidence that they predict Change Talk [48,54,55].

MIIN includes those behaviors that are more indicative of the expert or information-based model: confronting, directing, and providing information or advice without permission. Higher levels of MIIN lead to worse outcomes (as related to behavior change and/or treatment adherence) and lower levels of MIIN lead to better outcomes [54,55]. More specifically, in a review conducted by Apodaca and Longabaugh [55] of the underlying mechanisms of MI, it was noted that higher levels of practitioner MIIN behaviors are associated with higher levels of resistance, while lower levels of practitioner MIIN are associated with greater patient engagement.

Importantly, Glynn and Moyers [56] found that, after being trained to respond strategically to patient Change Talk statements, the practitioners in their study were able to significantly increase the frequency of Change Talk about reducing alcohol

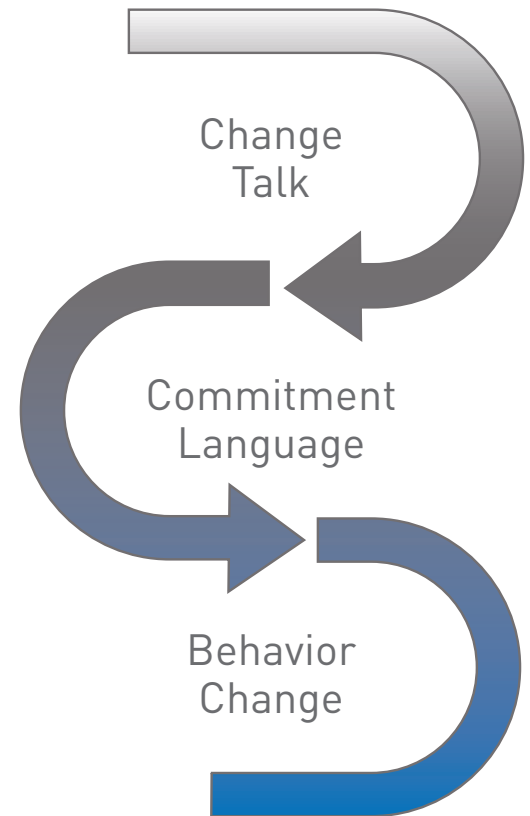


Figure 3: Change Talk Research

use. Regarding specific practitioner behaviors, an earlier study by Moyers et al. [48] found that there was a much stronger link between reflections and Change Talk than between other MI-consistent behaviors and subsequent client Change Talk; thus recognizing the importance of reflective listening and expressing empathy. Apodaca and Longabaugh [55] also identified certain practitioner strategies in their review that were predictive of substance use outcomes; namely, decisional balance, feedback, responsibility and change options. Lastly, in some primary research that Apodaca conducted, he found Change Talk was explained by the following practitioner behaviors: affirming (17%), asking open-ended questions (8%), reflecting (complex) (7%), and emphasizing control (4%) [57].

IN SUMMARY

All Change Talk is positive [48] while commitment language may be better [39]; both are correlated with positive clinical outcomes.

Practitioner behavior consistent with MI evokes more Change Talk while practitioner behavior that is inconsistent with MI results in more Counterchange Talk [48,53].

Variables comprising MI Spirit do not by themselves appear to be candidates for accounting for MI's effectiveness [50] but may increase engagement and increase Change Talk [54, 55].

“Therapists who wish to see more Change Talk should selectively reflect the Change Talk they hear and provide fewer reflections for Counterchange Talk. What therapists reflect, they will hear more of” [48].

HCPA Development

The behavior change research as reviewed above provided the framework for the development of the HCPA tool.

In the development of a new coding tool, it was critical to consider each of the important tenets of behavior change science from the practitioner/patient encounter linked either directly or indirectly to measurable clinical outcomes. The sidebar on page 20 provides a brief summary of these points. Another important objective was to provide the results of the coding along with actionable improvement feedback to the practitioner about the session to support improved health coaching proficiency. The feedback and recommendations were designed in accordance with best practice, as well as adult learning and competency development principles. (See sidebar on adult learning principles that apply to the components of the HCPA [58,59].

As the MITI [16] is the most validated, commonly used and efficient coding tool to date (comprehensive yet still practical to use in a clinical setting), it was chosen to serve as a basis for the practitioner behavior counts of the new tool. In the following sections below, we will denote which components were taken directly from the MITI, which were modified, and which are new to the HCPA.

Section 1: Summary Scores

In this section, we code and provide the practitioner with an overview of multiple coach and patient behaviors associated with better patient outcomes in health coaching encounters. The various components were included given the demonstrated link between practitioner behavior and patient behavior (namely less resistance, and more Change Talk). In addition, the components set up the framework of the evidence-based MI approach.

ADULT LEARNING PRINCIPLES

Adults are competency-based learners, meaning that they want to learn a skill or acquire knowledge that they can apply pragmatically to their immediate circumstances [58].

The adult learner enters the training or educational environment with a deep need to be self-directing and to take a leadership role in his or her learning [59].

The need for positive feedback is a core characteristic of the adult learner. Like most learners, adults prefer to know how their efforts measure up when compared with the objectives of the instructional program [59].

Each of the scores below is presented in graph format with the practitioner's score as compared with what a specialist (basic proficiency in MI) and an expert health coach (advanced proficiency in MI) would score. (See Appendix for an example of the summary scores.) The specialist and expert scores were based on previous research performed by Moyers et al. in the development of the MISC [15] and MITI [16], as well as on the outcomes of the experienced health coaches used in the current coding project.

- % MI Adherent* = Percentage of techniques used consistent with MI approach (MIC) versus techniques used that are inconsistent with MI approach (MIIN).
- % Open Questions* = Percentage of open questions used versus closed questions
- % Complex Reflections* = Percentage of complex reflections versus simple reflections
- Reflection to Question Ratio* = Ratio of total reflections used in comparison to total questions
- Global Characteristics[□] = Average score of effective MI-based coaching behaviors used during session. These include: collaborating and partnering; evoking and exploring client's motivation for change; listening and expressing empathy; resisting the righting reflex; staying on task; supporting autonomy and choice; and validating, supporting and affirming.
- Change Talk[°] = A score calculated from the frequency and strength of patient Change Talk during the last 12 minutes of the session. (Change Talk only coded during last segment of session based on research by Amrhein et al. [42] regarding importance of commitment strength at end of session.)

*Components used in MITI □Components modified from MITI ° New components

Section 2: Missed Opportunities by Coach^o

In this section, we identify and provide the practitioner with examples of missed opportunities during the session that might have: led to more exploration about the patient's motivation to change; addressed patient activation or self-efficacy; assessed importance and/or confidence; and/or led to discussion of the benefits of change, future change, or a more concrete change action plan. This is a novel component that we feel is a valuable asset to the practitioner report based on feedback from experienced trainers/coders who have worked with health care practitioners and listened to thousands of practitioner/patient recorded sessions. In accordance with adult learning and competency development principles, this provides the practitioner with concrete examples from an actual session, which assists with the transfer of health coaching principles and skills learned in a workshop to practice on-the-job.

Section 3: Strengths of Coaching Session^o

In this section, we identify and provide examples of effective patient-centered strategies demonstrated during the session. This component is based on adult education principles that emphasize the importance of providing specific, positive feedback to the learner. In this way, the practitioner can build upon this base of health coaching strengths that were demonstrated in an actual session.

Section 4: Recommended Skill-building Practice^o

In this section, we identify and provide recommendations to the coach to improve proficiency in evidence-based health coaching. This allows the practitioner to focus on specific skills that will help move him/her forward in a patient-centric approach. In addition, the practitioner's supervisor and/or health coaching mentor can use these recommendations to tailor learning activities that address concrete skill gaps, maximizing the impact of staff performance review or employee development coaching sessions.

*Components used in MITI [⌘]Components modified from MITI ^oNew components

Evaluation Methods

After the development of the HCPA, a rigorous analysis was conducted to evaluate the validity and reliability of the tool. Multiple inter-rater reliability and criterion validity analyses were performed by an independent health services researcher.

Study Population

Both in-person and telephonic sessions were used in the coding validation process. All sessions were conducted with actual patients who gave consent to being either video- or audio-taped. Patient sessions were drawn from a pool of sessions taped for educational purposes, as well as those from a previous coding project. All patients had chronic conditions and were either enrolled in a disease management program or were volunteers for a health coaching study. All personal health information (PHI) was removed before the coding process began. Only the audio format was provided to the coders.

Coders

The three coders for this project were chosen based on the following criteria:

- Proficient in MI and a member of the Motivational Interviewing Network of Trainers (MINT);
- Experience in the health care setting;
- Extensive training in the MITI Coding System [16] (at least 40 hours of training with regular follow-up training and review);
- Extensive coding experience; and
- Acceptable inter-rater reliability with benchmark Coder (an experienced coder to whom the coders were compared in a blinded evaluation before data was used for analysis).

Measures

For inter-rater reliability analysis, all measures were compared among coders. These included both categorical and non-categorical variables.

Inter-rater Reliability: Categorical Variables

There were seven global characteristics and the variable of Change Talk strength that were rated from 1 to 5:

- Collaborating and partnering;
- Evoking and exploring client's motivation for change;
- Listening and expressing empathy;
- Resisting the righting reflex;
- Staying on task/being directive in an MI congruent way;
- Supporting autonomy and choice;
- Validating, supporting and affirming; and
- Change Talk strength.

Inter-rater Reliability: Non-categorical Variables

We took behavior counts (open-ended/close-ended questions, simple/complex reflections, and MIC/MIIN behaviors) and converted them into ratios or percentage values. These values plus the behavior counts that went into the formula for Change Talk were compared among coders:

- % of open-ended questions (calculated against close-ended questions);
- % of complex reflections (calculated against simple reflections);
- Ratio of total reflections to total questions;
- % of MIC behaviors (calculated against MIIN behaviors); and
- Count of Change Talk utterances.

Criterion Validity

For the criterion validity analysis, MITI MI Spirit measure [16] (comprising of the average of three global scores) was used as a benchmark for comparison against the average of the HCPA Global measures and the HCPA Change Talk measure. The MITI MI Spirit measure is currently considered to be the most valid and widely used measure of fidelity to MI. Additionally, an analysis was performed between MITI MIC measure [16] (% of MI-consistent behaviors) and HCPA Change Talk.

The Coding Process

Fifty-one sessions were chosen for the coding process to test reliability and validity. Sessions were chosen to ensure representation across the continuum from novice health coaches to more experienced health coaches. All sessions represented encounters where the practitioner talked directly to the patient (versus to a caregiver or family member), with a minimum length of 8 minutes and a maximum of 20 minutes. In some cases, longer sessions were edited to fall within the 20-minute mark. Editing was done by the lead author, an experienced MI practitioner/MINT trainer, to ensure that important health coaching content was not removed.

Coders were trained on how to use the HCPA tool on two separate occasions by the lead author, with emphasis being placed on where the tool differed from the MITI. Coders were instructed not to compare notes nor elicit outside assistance in the coding, unless a clarification was needed from the project manager. Coders completed the assignment within a three-week period. Data were entered into a prepared Excel spreadsheet with formulae and tallies pre-programmed.

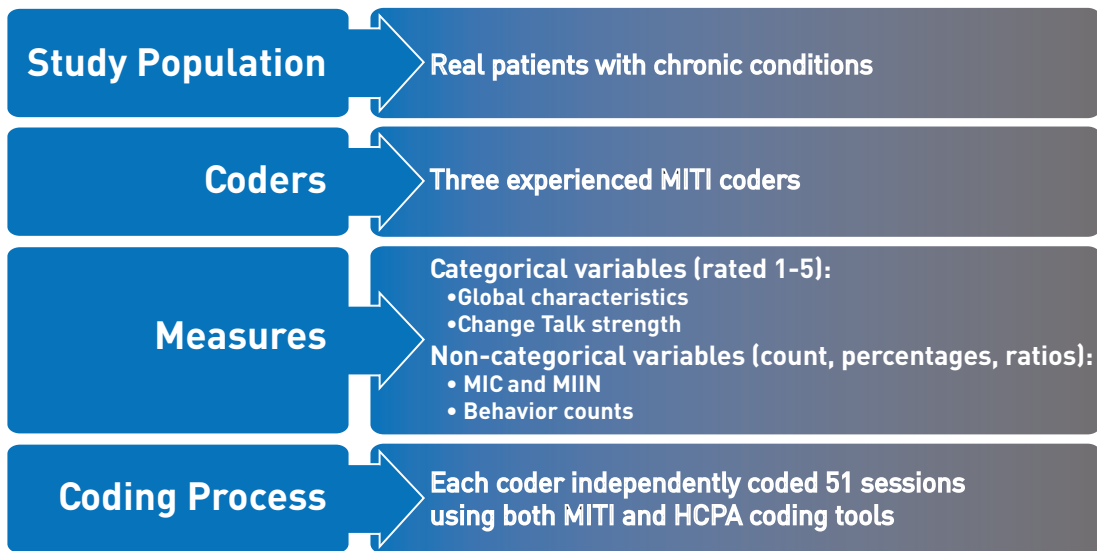


Figure 4: Study Variables

Inter-rater Reliability

For the categorical variables (see Measures section above) we used the Cohen's kappa statistic [60] to determine the inter-rater reliability separately between the three coders (1 versus 2, 1 versus 3, and 2 versus 3), as well as summarized across all three coders, using all 51 cases. The kappa-statistic measure of agreement is scaled to be 0 when the amount of agreement is what would be expected to be observed by chance and 1 when there is perfect agreement. For intermediate values, Landis and Koch [61] suggest the following interpretations:

- Below 0.0 = Poor
- 0.00 – 0.20 = Slight
- 0.21 – 0.40 = Fair
- 0.41 – 0.60 = Moderate
- 0.61 – 0.80 = Substantial
- 0.81 – 1.00 = Almost perfect

For non-categorical variables (see Measures section), we computed the intraclass correlation (ICC) for random effects models based on repeated measures ANOVA as described by Shrout and Fleiss [62]. More specifically, we used a two-way mixed model where subjects are random, but raters are fixed. According to Cicchetti [63], intraclass correlations should be interpreted as follows:

- Below 0.40 = Poor
- 0.40 - 0.59 = Fair
- 0.60 to 0.74 = Good
- 0.75 - 1.00 = Excellent

As with the categorical variables, the inter-rater reliability was calculated separately between the 3 coders (1 versus 2, 1 versus 3, and 2 versus 3), as well as summarized across all three coders, using all 51 cases.

Criterion Validity

We used Somers' D rank order analysis [64] to test the concordance of the HCPA Change Talk measure and HCPA Global measure against the MITI Spirit measure; and the HCPA Change Talk measure against the MITI/HCPA MIC measure. Somers' D is a nonparametric statistical approach, commonly used when distributional

assumptions of “normalcy” are violated. In general terms, the Somers’ D statistic is the difference between two conditional probabilities, namely the probability that the larger of any two randomly drawn X values is associated with the larger of the two associated Y values and the probability that the larger X value is associated with the smaller Y value.

The Somers’ D statistic can be thought of as a regression coefficient for the relationship of Y in respect to X [65,66]. For the current analyses, the Somers’ D statistic indicates the probability that Change Talk and HCPA Global increase with increasing MITI MI Spirit score more so than decrease with increasing MITI Spirit measure. Thus, for example, a coefficient of 0.70 implies that the X variable (e.g., Change Talk or HCPA Global) is 70% more likely to increase with increasing Y variable (e.g., MITI Spirit score) than decrease with an increasing Y variable. To allow for dependencies between repeated measures on the same patient, all analyses were performed with clustering by patient. Confidence intervals were computed using the jackknife technique.

Evaluation Results

Inter-rater Reliability

Table 2 presents the inter-rater reliability (IRR) estimates of the categorical measures. As shown, summary kappa scores (across all three raters) ranged from 0.413 to 0.748, with an average kappa score of 0.600. Categorical measures that were found to have a “Substantial” IRR rating were: Collaborating and partnering; Evoking and exploring motivation; Listening and expressing empathy; and Resisting the righting reflex. Those variables found to have a “Moderate” level of IRR were: Staying on task; Supporting autonomy; and Change Talk strength. Validating, supporting and affirming had a “Fair” level of IRR.

Categorical Variable	Kappa Value	Min & Max Values	Kappa Value Rating
Collaborating/partnering	0.748	(0.647, 0.838)	0.81 – 1.00 = Almost perfect
Evoking/exploring motivation	0.734	(0.658, 0.831)	0.61 – 0.80 = Substantial
Listening/expressing empathy	0.738	(0.695, 0.805)	0.61 – 0.80 = Substantial
Resisting righting reflex	0.664	(0.556, 0.782)	0.61 – 0.80 = Substantial
Staying on task	0.586	(0.487, 0.651)	0.41 – 0.60 = Moderate
Supporting autonomy	0.544	(0.402, 0.733)	0.41 – 0.60 = Moderate
Validating/supporting/affirming	0.374	(0.281, 0.613)	0.21 – 0.40 = Fair
Change Talk strength	0.413	(0.413, 0.515)	0.41 – 0.60 = Moderate

Table 2: Results of Inter-rater Reliability Analyses for Categorical Values

Table 3 presents the intraclass correlation coefficients for the non-categorical measures. As shown, summary ICC estimates (across all three raters) ranged from 0.428 to 0.968, with an average ICC score of 0.817. Four of the five variables (% open-ended questions, Ratio of reflections to questions, % of MIC, and Change Talk utterances) had an ICC rating of “Excellent”; % of complex reflections had a “Fair” ICC rating.

Non-Categorical Variable	Intraclass Correlation	95% Confidence Interval	Min & Max Values
% Open-ended Questions	0.968	(0.949, 0.980)	(0.959, 0.984)
% Complex Reflections	0.428	(0.257, 0.593)	(0.186, 0.835)
Ratio: Reflections to Questions	0.964	(0.943, 0.978)	(0.946, 0.987)
% Of MIC	0.804	(0.710, 0.875)	(0.746, 0.939)
Change Talk Utterances	0.919	(0.875, 0.950)	(0.881, 0.950)

Intraclass Correlation Rating

- Below 0.40 = Poor
- 0.40 to 0.59 = Fair
- 0.60 to 0.74 = Good
- 0.75 to 1.00 = Excellent

Table 3: Results of Inter-rater Reliability Analyses for Non-categorical Variables

Criterion Validity

Table 4 presents the results of the Somers’ D analyses. HCPA Global score had a very high concordance with the MITI MI Spirit score. More specifically, HCPA Global scores were 91% more likely to increase with increasing MITI MI Spirit scores than decrease with increasing MITI MI Spirit scores (95% confidence intervals = 85%, 97%). HCPA Change Talk was less concordant with MITI MI Spirit scores, with a 53% likelihood that an increase in this variable was concordant with an increase in MITI MI Spirit scores (95% confidence intervals = 39%, 67%). The Somers’ D analysis of HCPA Change Talk versus MITI/HPCA MIC indicated that HCPA Change Talk was 35% more likely to increase with increasing MITI MIC than decrease with increasing MITI MIC values (95% confidence intervals = 17%, 53%).

MITI Global (Standard)	Coefficient	P Value	95% Jackknifed Confidence Interval
HCPA Global	0.911	p < 0.001	(0.851, 0.970)
HCPA Change Talk	0.530	p < 0.001	(0.391, 0.669)
MITI Global (Standard)	Coefficient	P Value	95% Jackknifed Confidence Interval
HCPA Change Talk	0.349	p < 0.001	(0.170, 0.529)

Table 4: Results of Criterion Validity Analyses

Discussion

Regarding practical use of the HCPA tool, feedback from the coders was positive. They concluded that the tool was relevant to health care encounters and could be used in virtually any setting, from primary care to disease management. As an accompaniment to this study, a coding manual has been developed, based on the format from the MITI and feedback from the coders on what information and examples would be helpful.

Inter-rater reliability ranged from fair to substantial, with most variables scoring in the moderate to substantial range. It was not surprising that there was not good inter-rater reliability in complex reflections as this is consistent with findings from past coding projects. In future coding projects that use the HCPA, even experienced MITI coders will be trained more vigorously in areas where challenges have been noted; for example, providing more clear guidelines about the difference between what constitutes “adding significant meaning” for complex reflections. The Change Talk strength score was changed from 1-5 to 1-3 to increase inter-rater reliability and subsequent coding comparisons using the new range has been favorable.

The HCPA Global score had a high concordance with the MITI MI Spirit score, which was an appropriate and logical benchmark to use for this tool. This concordance indicates that the HCPA tool is a good representation of fidelity for practitioner behaviors based on the MI approach. On the other hand, it was challenging to choose a benchmark for the HCPA Change Talk component as the MITI does not measure client behaviors. Although the MISC does have a Change Talk component, this measure includes patient behaviors that are not currently coded and is impractical for a one-pass coding process due to the complexity [15]. Therefore, although we compared HCPA Change Talk with both MITI MI Spirit score and the MITI MIC, we were aware that we were using practitioner behaviors as a benchmark for patient, which was not an ideal match.

Thus, HCPA Change Talk did not have as strong of a concordance with the MITI MI Spirit score, nor did the HCPA Change Talk and the MITI MIC. These are interesting results, although not totally unexpected. Previous research has indicated that while there is a strong correlation between Change Talk and clinical outcomes, there is less known about the relationship between practitioner behaviors and patient behaviors. For example, in a study by Moyers, Miller and Hendrickson [54], MIIN behaviors from practitioners (instances of confrontation, warning and directing clients) did not decrease patient involvement in the MI session. Nonetheless, there is sufficient evidence to indicate that both practitioner and patient behaviors are important to monitor, although a direct line from MIC behaviors to Change Talk to clinical outcomes may not exist and there is much more to learn about the causal pathway.

A limitation of the criterion validity analysis is that we were limited in the availability of a fully compatible benchmark for patient behaviors as explained above. Another limitation is that there is still much to be discovered about the actual underlying mechanisms of the MI approach and there could be other, as yet unknown, variables that should be included in the coding process.

From the recent meta-analyses, it is clear that this approach is indeed effective and best practice in addressing lifestyle management, chronic condition self-management and treatment adherence. There seems to be evidence amassing that indicates that the patient behavior of Change Talk is associated with clinical outcomes. What is not yet clear, is exactly which practitioner behaviors are directly linked with evoking Change Talk from the patient, which are most important, and if

there are any direct links from practitioner behavior to clinical outcomes. Until more is known, as stated above, it is important to pay close attention to all MI-based practitioner behaviors and, especially, to Change Talk from the patient.

The Change Talk component of the HCPA is innovative, with a formula accounting for both the frequency of this patient behavior standardized for session duration, as well as the strength of the utterance. Undoubtedly, we will continue to refine this formula as more is discovered about this compelling element of behavior change theory. In fact, Glynn and Moyers [56 p. 69] state: “The ability to accurately rate the clinicians’ proficiency in recognizing, reinforcing, and evoking Change Talk would require a coding system that assesses their intent and strategy rather than simply codes topographical features of their responses.”

Future research is needed in this area of the health care setting; both to replicate findings from studies in the counseling and addiction realm and to learn if there are unique qualities of the health care encounter that demand subtle or significant differences in the MI approach. In addition, we plan to look for opportunities to validate data from HCPA codings with clinical outcomes.

Conclusion

Over 85% of health care costs and most preventable deaths and disability are attributed to health behaviors. Health coaching is a promising intervention for reducing these costs. However, in order to effect positive clinical outcomes, effective health coaching requires an evidence-based approach such as Motivational Interviewing, along with consistent use of a validated assessment tool to ensure the fidelity of practitioners to the coaching approach. The HCPA assessment tool was developed specifically for brief health care encounters and is based on the MI approach. It has excellent validity as compared to the MITI and good inter-rater reliability. With well-trained coders, practitioners can now receive concrete feedback about actual health coaching encounters. This feedback can be used to improve health coaching competence and proficiency. Additionally, by evaluating the quality of the health coaching services provided by staff, programs and organizations can now benchmark and improve the quality and effectiveness of their services.

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Dr. Linden is an independent health services researcher and president of Linden Consulting Group, LLC, located in Ann Arbor, Michigan. Since completing his doctorate at UCLA in health service research in 1997, Dr. Linden has focused on measurement and evaluation strategies for determining the effectiveness of clinical quality improvement efforts, disease management and wellness programs. He has published over 60 peer-reviewed papers, book chapters, letters to the editor, and scientific abstracts. In 2003 he was commissioned to write a position paper for the disease management industry's trade organization—the Disease Management Association of America (DMAA)—and in 2006 won the DMAA's prestigious award for "Outstanding Journal Article." In 2008, he was named "Leader in Disease Management" by Managed Healthcare Executive. Dr. Linden has held a joint faculty appointment at Oregon Health & Science University's School of Medicine and School of Nursing, and has been a Visiting Professor in four countries. He further contributes to academic advancement as an editorial board member of five medical journals and serves as the U.S. editor of the Journal of Evaluation in Clinical Practice (JECPP).

About HealthSciences Institute

Since 2003, HealthSciences Institute's award-winning Chronic Care Professional (CCP) learning and certification program remains the only nationally recognized health coaching and chronic care training program linked with better patient and costs in organization evaluations and peer-reviewed studies. CCP has been widely adopted by state health care agencies, as well as leading health plans, and provider organizations. HealthSciences also designed and delivered chronic care and practice improvement training for clinical staff in 167 cardiology practices in the largest outpatient heart failure performance improvement registry to date (ImproveHF), a 35,000 prospective study that improved five of seven heart failure quality measures at 24 months as reported in 2010 in the journal *Circulation*. ImproveHF was the foundation for a follow-up national heart failure care improvement program delivered to hundreds of U.S. hospitals.

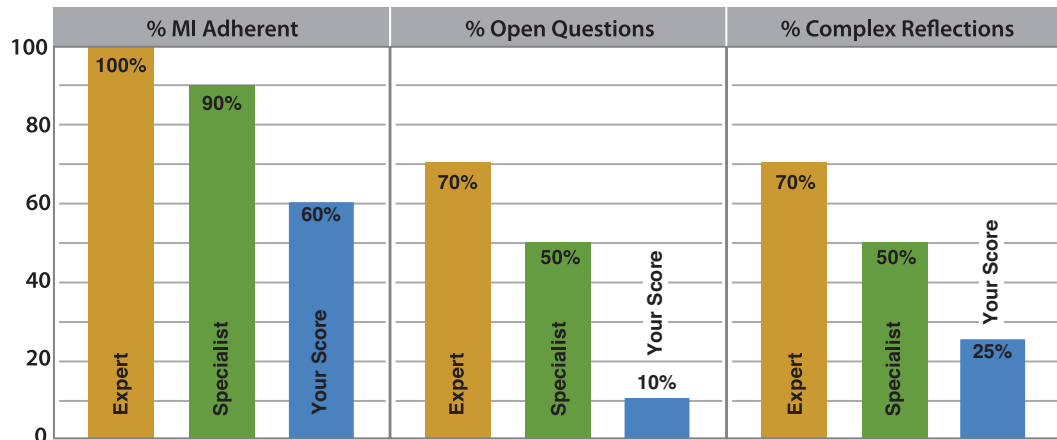
Building on the foundation of CCP, HealthSciences Institute has also delivered advanced, motivational interviewing (MI) and other behavioral science-based workforce development programs to health plans, regional teams and provider organizations. HealthSciences Institute released the first health coaching training DVD: *Evidence-Based Health Coaching: Motivational Interviewing in Action*. Today, HealthSciences Institute hosts the only not-for-profit learning collaborative and community focused on building awareness and workforce skills in health coaching and chronic care through the PartnersInImprovement alliance. The alliance features free, expert-led, noncommercial skill-building events focused on chronic care improvement and interventions for addressing the challenges of patient engagement, self-care, adherence and lifestyle management. The alliance now represents the largest community of professionals in chronic care and health coaching.

Appendix: Examples of HCPA Feedback Report

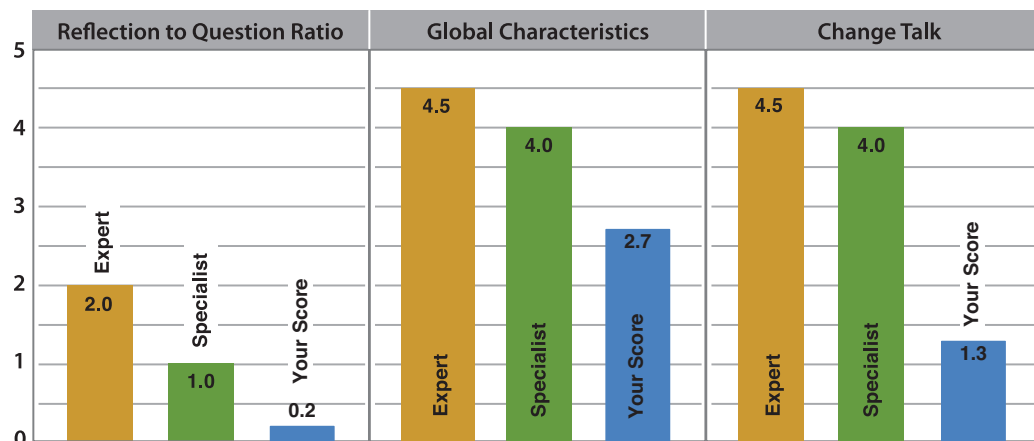
Summary Scores

Section 1: Summary Scores

In this section, we provide you an overview of multiple coach and patient behaviors linked with better patient outcomes in health coaching encounters. Your score is compared to Specialist Level (basic proficiency in MI) and Expert Level (advanced proficiency in MI).



Key Expert Level Specialist Level Your Score



Key Expert Level Specialist Level Your Score

Missed Opportunities

Section 2: Missed Opportunities by Coach

Missed Opportunity	Comments
Assessing importance and/or confidence on behavior	There was an opportunity to assess how important the patient felt controlling his A1c's were before providing information. This could have elicited Change Talk.
Evoking future behavior change	After you provided a summary of how the patient could get a new glucometer, you may have wanted to elicit a formal change plan or health goal from the patient.
Matching/setting agenda or determining target behavior	Assisting the pt with controlling his A1c's was deemed an important clinical goal; what are the patient's goals and interests? It may have been helpful to find out.

Missed Opportunities by Coach. In this section, we provide you with some concrete examples of missed opportunities during the session that might have led to more exploration about the patient's motivation to change, addressed patient activation or self-efficacy, and/or led to discussion of the benefits of change or a more concrete change action plan.

Recommendations for Skill-building Practice

Section 4: Recommended Skill-building Practice

- Collaborating and partnering
- Evoking/Exploring client's motivation for change
- Listening and expressing empathy
- Resisting the righting reflex
- Staying on task, structuring and guiding
- Supporting autonomy and choice
- Validating, supporting and affirming

Recommended Skill-building Practice. In this section, we provide some recommendations for improving your proficiency in evidence-based health coaching.