

Practicing Motivational Interviewing for Obesity Care

An AI Virtual-Patient CME Experience (Pri-Med), 2025



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RESPONSIBLE + REPEATABLE + OUTCOME-BASED

Practicing Motivational Interviewing for Obesity Care: Framing a Case Study Inside Today's Obesity & AI Landscape



MI=

Motivational
Interviewing

Why This Topic (and Why Now)

More than **40%** of U.S. adults live with obesity, and every state now reports rates above **20%**, with **the Midwest and South showing the highest levels**. These numbers have stayed stubbornly high through 2023–2024, even as treatment options expand.¹

The clinical challenge goes beyond prescribing, though. Weight stigma in healthcare drives patients away from care, worsens both mental and physical health outcomes, and research links it to increased mortality risk. That's why major medical bodies now recommend person-first, non-stigmatizing language as standard practice.²

Here's the kicker: real-world GLP-1 data reveals a massive counseling gap. Adherence and persistence remain modest, with many patients quitting within the first year. The medication isn't failing; our conversations are.³

The Communication Gap: Where MI Fits

Motivational Interviewing gives clinicians a structured method (OARS techniques, collaborative stance) to cut through stigma, tap into patient goals, and build plans that actually stick. Recent research highlights MI's role in person-centered, non-stigmatizing obesity care and its power to shift both how clinicians talk and how patients engage.⁴

Problem is, MI requires practice. **Real practice.** It's under-used outside workshops because clinicians rarely get repetitive, feedback-rich rehearsal on realistic cases. You can't master MI from a PowerPoint any more than you can learn procedures from a textbook.⁴ That's where this case study comes in.

Why AI Virtual Patients (Now)

Traditional simulation works, but it's resource-intensive. **AI-driven virtual patients** deliver conversation-based practice **on demand**, with automated, rubric-aligned feedback after each encounter. Evidence from 2024 to 2025 shows AI-simulated patients can improve interview skills and are feasible for routine training. A 2025 review of virtual communication tools highlights both the momentum and the need for higher-fidelity platforms, which is exactly where Xuron operates.⁵



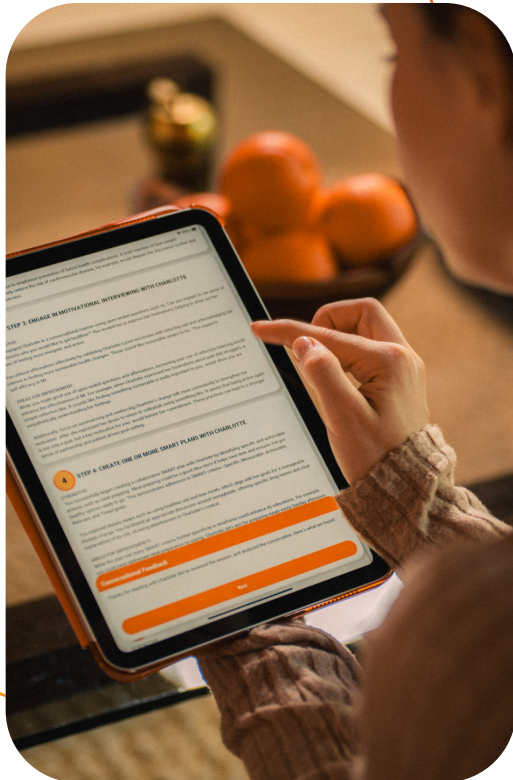
What This Case Study Contributes

Against this backdrop, **the Pri-Med** activity targeted **primary care** clinicians practicing MI for obesity care with an **AI virtual patient**—focusing on person-first language, OARS, and SMART planning. This report offers early outcomes from June–August 2025 and situates them within current literature on MI, stigma reduction, and AI simulation. The question we're answering for educators and pharma partners is straightforward: **Can a single, well-designed AI simulation move knowledge and self-efficacy on sensitive, high-stakes conversations—and scale to where the learners are?**

How to Read the Rest of This Paper

- 1 **Methods & Cohorts**
Quick scan for activity design and learner cohort, so you can benchmark against your own MI or obesity-care programs.
- 2 **Results**
KPI deltas and interpretation with visual summaries for knowledge, confidence, and simulation performance.
- 3 **Discussion**
Where these results sit within literature on AI-enabled training (communication, empathy, self-efficacy).
- 4 **Limitations & Next Steps**
What we controlled for in this pilot and what we're evaluating next (larger cohorts, matched controls, and longitudinal follow-up).

Practicing Motivational Interviewing for Obesity Care: Results of an AI-Driven Virtual Patient Experience



Introduction

Obesity remains a pervasive U.S. health challenge, affecting about 42.4% of adults and contributing to diabetes, hypertension, and cardiovascular disease.⁶ People with obesity frequently encounter stigma in clinical settings; person-first, destigmatizing language is recommended to mitigate harm and build trust.⁷⁻⁸ Contemporary reviews show how stigma undermines engagement, adherence, and outcomes, making language choice and clinician attitude central to quality care.⁹

Motivational interviewing (MI)—a collaborative, person-centered counseling approach—aims to elicit patients' goals and motivation for change while avoiding judgment. Evidence associates MI-inclusive behavioral interventions with improvements in health behaviors such as physical activity.¹⁰ MI is a skills-based method and clinicians often lack chances to practice core techniques (eg, OARS—Open-ended questions, Affirmations, Reflective listening, and Summarizing), receive feedback, and translate MI into realistic, measurable plans.

Simulation and digital training can help. Studies show that reflective simulation-based e-training has increased MI knowledge, confidence, and competence; immersive/virtual environments have supported rehearsal of MI-consistent conversations; and digital simulators for weight-related communication have improved self-assessed communication skills in low-risk settings.¹¹⁻¹³

We developed and evaluated an online continuing medical education (CME) activity using an AI-driven virtual patient intended for primary care clinicians to practice MI for obesity care. This manuscript reports preliminary outcomes (data from June 30, 2025 through August 10, 2025) and situates them within current literature on MI, simulation, and AI.

1 Methods

Design and Participants

The self-paced, internet-based CME activity, "Practicing Motivational Interviewing for Obesity Care: An Interactive Virtual Patient Experience," launched June 30, 2025 (expiration June 30, 2026), and was supported by an independent medical educational grant. This report includes 18 completed sessions from 16 unique clinicians (physicians, NPs, PAs) who finished all required components by August 10, 2025.



Goals:

- Apply the motivational interviewing techniques you just learned
- Practice with Charlotte as if she were a **REAL** patient

Learning Journey and Simulation Scenario

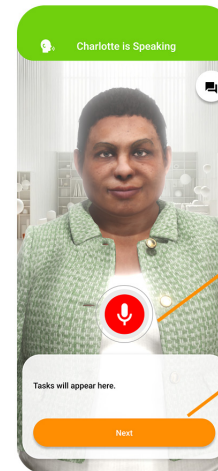
During this 0.50 CME Credit course, learners completed a concise micro-module on stages of behavior change and core MI principles for obesity. This was followed by an AI-driven virtual-patient encounter with Charlotte, a 40-year-old with class 2 obesity, type 2 diabetes, and hypertension, practiced across five tasks (rapport/history; lifestyle benefits; MI using OARS; creation of a SMART plan; summarizing and planning follow-up). An instant automated feedback report, summarizing task scores (1–5) with targeted strengths and areas of improvement, is presented to each learner after the simulation.

REPEATABLE DESIGN ARC:



Data Collection and Analysis

De-identified data captured pre/post multiple-choice responses, comfort ratings (5-point scale), task scores, perceived value (1–5), and free-text comments. Outcomes were summarized descriptively. Changes in knowledge and comfort were calculated as weighted relative differences (pre- to post-activity). Open-ended responses were first analyzed by an artificial-intelligence tool to detect recurrent themes and then double-checked by a human reviewer for accuracy and nuance. Given the small sample and single-arm design, no inferential statistics were performed.



How to Interact

Microphone Start/Stop

Tasks

Simulation Steps

Each learner engaged with Charlotte, the virtual patient, by progressing through five simulation steps through a natural language conversation.

Step 1 Greet & Gather History

Greet Charlotte and elicit her chief complaint, relevant medical background, and social context using patient-centered, nonjudgmental language

Step 2 Discuss Lifestyle Benefits

Discuss with Charlotte how weight loss and lifestyle changes can improve her diabetes, blood pressure, and prevent disease

Step 3 Engage in Motivational Interviewing

- (A) Engage with Charlotte using OARS (Open-ended questions, Affirmations, Reflective statements, Summary statements)
- (B) Find a focus by identifying Charlotte's goals and a target behavior
- (C) Identify Charlotte's motivation for making a change
- (D) Elicit ideas from Charlotte about changes she wants to make
- (E) Reinforce her suggestions for change

Step 4 Create One or More SMART Plan(s)

- (A) Ensure the plan is Specific, Measurable, Achievable, Relevant, and Timed
- (B) The plan/s should include changes related to one or more of the following: dietary changes, physical activity, behaviors, pharmacotherapy or bariatric procedures

Step 5 Summarize & Confirm Next Steps

- (A) Summarize the agreed plan with Charlotte, and
- (B) Schedule a follow-up visit to review Charlotte's progress, reassess goals as needed

2 Results

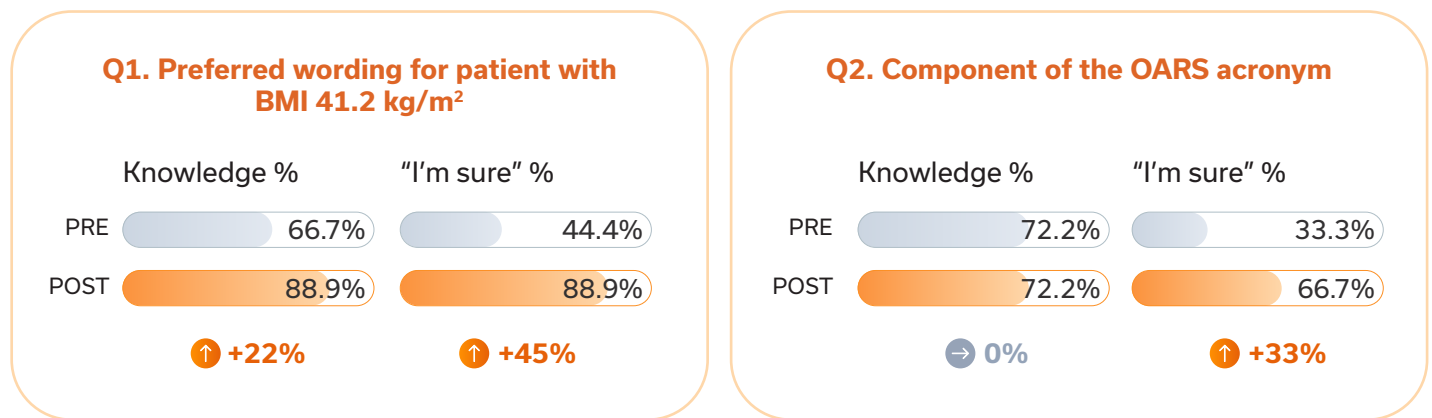
Participation and Demographics

Sixteen clinicians completed 18 sessions. Most were physicians in primary care disciplines; about half reported more than 20 years in practice.

Knowledge Performance

Pre-activity responses showed moderate familiarity with person-first language and core MI elements. Post-activity responses indicated higher correct selection of respectful terminology and greater answer certainty. In short, both knowledge (0-22%) and confidence (33-45%) improved.

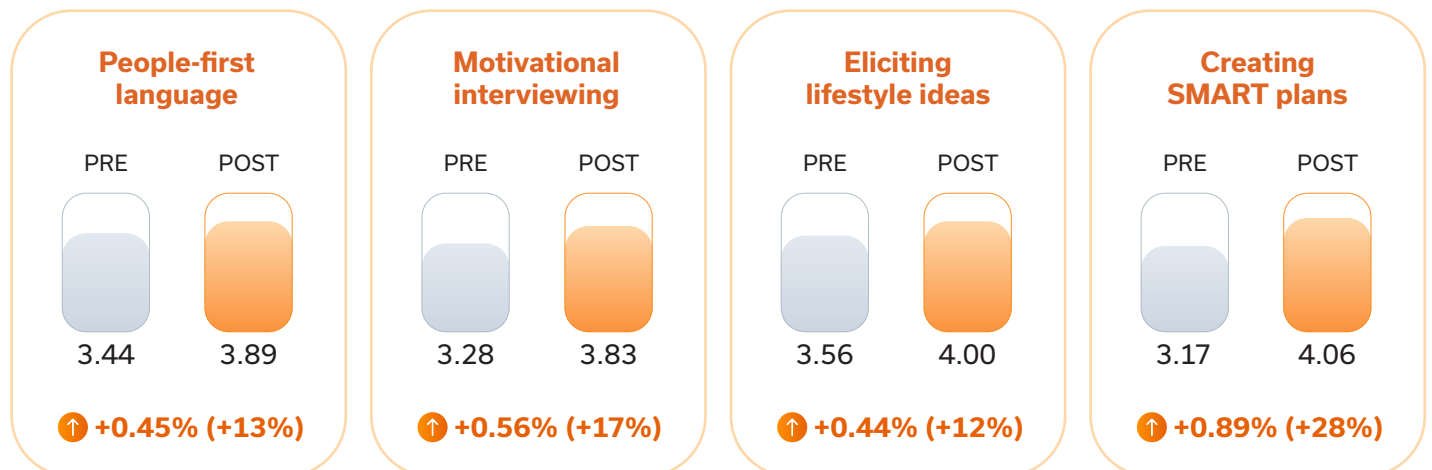
Knowledge Questions & Confidence Levels



Self-Reported Comfort

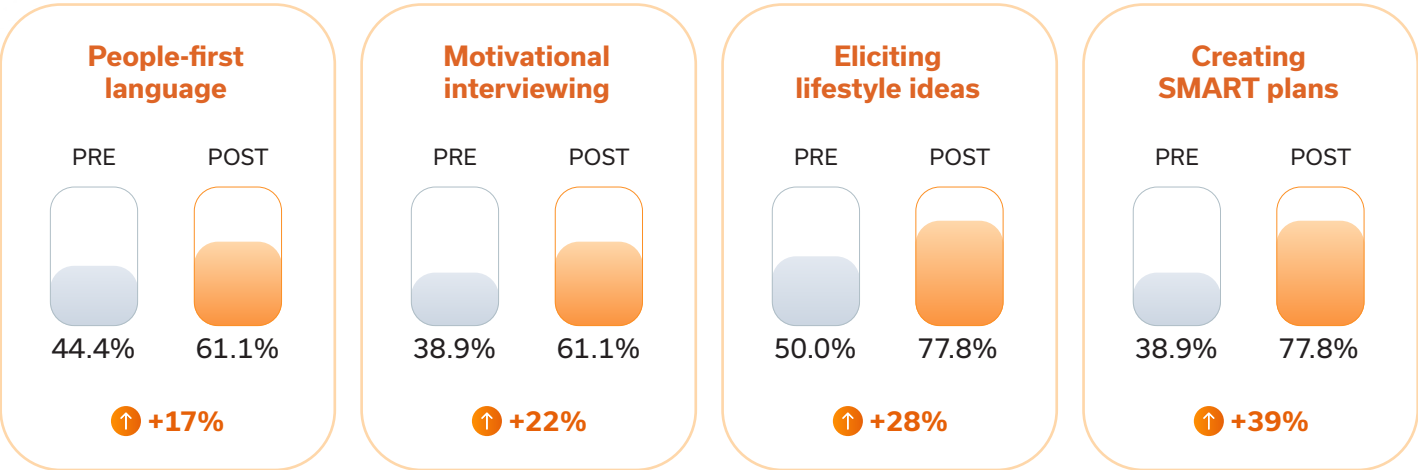
Mean comfort ratings increased an average of 12-28% across person-first language, conducting MI, eliciting lifestyle ideas, and creating SMART plans, with the largest gain for SMART planning.

Self-Reported Comfort (5-point scale)



Among respondents rating themselves Very/Extremely confident (4–5/5), overall comfort rose, with the largest gains in creating SMART plans and eliciting lifestyle ideas. These shifts reflect movement beyond factual knowledge toward self-efficacy for initiating respectful, MI-consistent conversations and co-creating actionable plans. Measuring the 4–5 band matters because confidence is a leading predictor of whether clinicians will actually use (and persist with) new communication behaviors in practice, especially for sensitive, stigma-prone topics like obesity.

Learners Who Feel Very/Extremely Comfortable (scale 1-5)



Simulation Performance

Across sessions, the mean simulation score was 3.29/5, indicating moderate proficiency. By task, creating SMART plans scored highest (3.65), while explaining lifestyle benefits and linking changes to diabetes/ blood-pressure outcomes scored lowest (2.67).

Simulation Step Performance Scores	Mean scores (n=18)
Step 1 - Greet & Gather History	3.56
Step 2 - Discuss Lifestyle Benefits	2.67
Step 3 - Engage in Motivational Interviewing	3.53
Step 4 - Create One or More SMART Plan(s)	3.65
Step 5 - Sumamrize & Confirm Next Steps	3.06
Average Across All Steps & Learners	3.29

Simulation Takeaways

The following patterns in strengths and areas for improvement were identified through a detailed AI-enabled and human-confirmed analysis of simulation transcripts.



Strengths

Warm, empathetic openings

Most sessions began with friendly greetings that helped establish rapport early.

Consistent use of open-ended questions

Learners frequently asked broad questions that invited Charlotte to share details.

Regular affirmations

Clinicians often reinforced positive statements which supports self-efficacy.

Linking lifestyle change to medical benefits

Many encounters connected weight loss to improved A1c and blood pressure.

Attention to cultural/social context

Several learners acknowledged socioeconomic factors when suggesting interventions.

Encouragement of support systems

Repeated prompts to recruit friends or family as exercise partners.

Frequent goal-setting attempts

Most sessions moved toward defining concrete next steps.

Empathetic reflections on struggles

Learners often mirrored Charlottes frustrations effectively.

Dietary specificity

Provided tangible examples like quinoa, Mediterranean patterns, soda swaps.

Promotion of small incremental change

Many framed change as 'small baby-steps,' reducing overwhelm.



Areas for Improvement

Vagueness in SMART details

'Eat better' was common; specific frequency, duration were often missing

Directive or prescriptive tone

Several learners shifted from MI to telling Charlotte what to do.

Over-taking vs. listening

Long clinician monologues crowded out Charlotte's voice.

Inconsistent summary/closure

Many sessions ended without a concise recap of agreed actions.

Limited exploration of barriers

Logistical hurdles were acknowledged but rarely problem-solved collaboratively.

Sparse confidence troubleshooting

When Charlotte rated confidence 6/10, few clinicians probed further.

Occasional stigmatizing language

Words like 'obese' or moralizing phrases potentially undermined rapport.

Limited focus on sleep and stress

Despite Charlotte citing fatigue, few addressed sleep hygiene strategies.

Minimal reflective listening

True reflections were less frequent than restating information.

Simulation Value and Clinical Impact

Learners rated the simulation's educational value at nearly 4/5 and estimated an average of about 13 patients per clinician would benefit the following week.

Learner comments emphasized realism, usefulness of eliciting patient ideas before offering advice, and interest in scenarios with more resistant patients. Most described the experience as engaging and applicable to clinical practice.

→ **Perceived value (1-5)**
3.89 / 5

→ **Avg. patients expected to benefit next week**
≈13 per learner

PRINCIPLES OF MOTIVATIONAL INTERVIEWING

SUPPORT SELF-EFFICACY

Supporting an individual's belief that they can achieve their goals

UNDERSTAND

Identifying and understanding your patient's motivation and concerns about their lifestyle and health

RESIST THE RIGHTING REFLEX

Avoid fixing the patient's problems. Instead, work with the patient to help them come up with solutions

EMPATHY

Expressing recognition and sensitivity to a patient's situation

Lingvay I et al. Lancet. 2021. doi:10.1016/S0140-6736(21)01919-X

Knowledge slide from the course.

Learner Feedback

Medical Education Integration

“

This is a very realistic and effective learning tool that should be a part of formal medical education as well as CME programs. Thank you for utilizing the OARS method so effectively in your simulated patient office visit!

Patient-Centered Approach

“

This virtual patient simulation was very effective in helping me to make the shift to eliciting the patient's input to making changes more instead of just making my own suggestions which might be less realistic and less helpful.

AI Teaching Tool Potential

“

I was pleasantly surprised by how helpful this was. I think as AI gets more effective this can be a great teaching tool. I would be interested to have some experiences with patients who are more resistant to change, can't think of good goals, etc.

AI-driven training makes MI skills practical, measurable, and confidently actionable.



3 Discussion

This preliminary evaluation suggests that an AI-driven virtual-patient activity was associated with improved knowledge, confidence, and observed behaviors related to MI and respectful language in obesity care. Gains were most apparent in SMART planning, consistent with the premise that structured practice converts MI concepts into concrete, measurable action—something reading alone rarely achieves.¹¹ The difficulty many learners had linking lifestyle discussions to disease benefits, and the tendency to drift into directive advice, mirror well-described challenges in MI training; targeted prompts and feedback loops are needed to keep conversations patient-led, reinforce reflective listening, and ensure summaries lock in specific commitments.¹⁰⁻¹²

These findings align with emerging evidence that simulation-based e-training can strengthen MI knowledge, confidence, and competence; that immersive/virtual environments are acceptable rehearsal spaces for MI-consistent talk; and that digital simulators can improve self-assessed communication skills in a low-risk environment.¹¹⁻¹³ For obesity specifically, respectful, person-first language is essential—stigma is common, harmful, and correctable through intentional communication and training.⁷⁻⁹ Our learners' improved use of preferred terminology supports embedding stigma-reduction within skills training, not as a separate module but as a thread across history-taking, goal elicitation, and planning. Clinical guidance similarly emphasizes patient-centered communication and shared decision-making in obesity care, reinforcing the educational focus of this activity.¹⁶

As large language model technologies mature, digital simulations can provide more granular, moment-to-moment feedback on MI-consistent behaviors (eg, reflections vs questions, proportion of patient "change talk"), while still requiring human oversight to assure validity and minimize bias.

4 Limitations

Findings reflect a small, self-selected cohort (16 learners, 18 sessions) and a single-arm pre-post design; improvements cannot be attributed solely to the simulation. Measures relied on short knowledge items, self-reported comfort, and simulation scoring rather than independent, blinded coding of real encounters. The AI-based scoring approach, while efficient, requires continued validation. Outcomes are short-term and persistence of skills and translation to patient-level outcomes were not assessed. The case centered on a single adult phenotype (class 2 obesity with diabetes and hypertension) and generalizability to pediatrics, other comorbidities, and diverse cultural contexts requires additional cases.



Conclusion

An AI-driven virtual-patient CME activity was associated with improved knowledge, confidence, and application of MI and person-first language for obesity care in a small preliminary sample. Learners especially advanced in SMART planning while revealing common growth areas (eg, avoiding directive advice, deepening reflective listening, exploring barriers, and summarizing clearly). Embedding respectful language and anti-stigma practices within MI skills training appears feasible and well-received.

Next steps include larger and more diverse cohorts, objective behavioral assessment, longitudinal follow-up, and continued usability refinement. Overall, digital simulation—with careful human oversight—shows promise as a scalable method to help clinicians practice sensitive conversations that matter for outcomes in obesity care.^{11-13, 16}

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Boris has over 11 years of experience in medical education and currently serves as Chief Learning Officer at Xuron, specializing in AI-powered conversational simulations for teaching interpersonal, communication, and clinical reasoning skills.



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Medical Director at Pri-Med

Meg Oliverio has been a Medical Director at Pri-Med since 2019, where she develops evidence-based continuing medical education to support primary care clinicians with innovative, practical programs that help them deliver high-quality, up-to-date patient care.

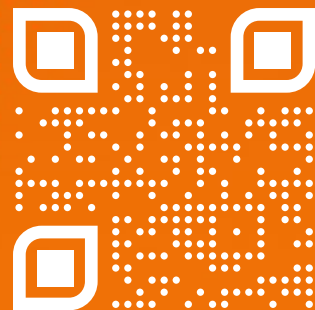


Ian Nott
CEO of Xuron

Ian has leveraged nearly a decade of experience in spatial computing and software development to lead innovations in AI-powered virtual human simulations for medical training.

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