Category: Training, Career Development, and Staff Retention – Work in Progress

A Structured, AI-Enabled Clinical Research Coordinator Certification Exam Preparation Program to Enhance Clinical Research Workforce Competency and Career Advancement: a Pilot in an Academic Cancer Center

N. Hernandez Ortega

Sylvester Comprehensive Cancer Center, University of Miami

1. Background

The increasing complexity of oncology clinical trials requires a highly competent clinical research workforce; however, variability in coordinator training/exposure to complex clinical trials and limited access to certification preparation remain challenges. Professional certifications, such as Association of Clinical Research Professionals (ACRP), Certified Clinical Research Coordinator (CCRC) and The Society of Clinical Research Associates (SOCRA), are associated with improved trial quality and regulatory compliance. Traditional training approaches are often standardized and do not address individual competency gaps. Artificial intelligence (AI) offers an opportunity to deliver personalized, scalable educational interventions tailored to individual learning and performance needs.

2. Goals

The goal of this pilot program is to develop and evaluate a structured, AI-enabled clinical research coordinator (CRC) certification exam preparation program that improves CRC competency and supports certification readiness. Key evaluation metrics include baseline performance, domain-specific knowledge gaps, progression across assessments, and readiness for certification defined by final examination performance thresholds. The program also aims to support professional development and career advancement.

3. Solutions and Methods

An AI-enhanced clinical research coordinator (CRC) certification exam preparation pilot program is being implemented at the University of Miami Sylvester Comprehensive Cancer Center, enrolling eight CRCs across three SCCC network sites. This pilot cohort represents the initial implementation and is designed to evaluate feasibility and inform refinement.

The program is delivered over twelve weeks and consists of six structured sessions, incorporating a baseline pre-test, midpoint assessment, and comprehensive final exam to evaluate progression and readiness for certification. Baseline knowledge was assessed using a pre-test aligned with ACRP competency domains, including protocol compliance, informed consent, safety reporting, and data integrity. Pre-test analysis evaluated cohort-level trends, individual performance gaps, and test-taking behaviors such as response pacing.

The curriculum combines didactic instruction, AI-generated ACRP- and SOCRA-style practice questions, and application-based learning. AI tools were used to develop individualized study plans for each participant, targeting knowledge gaps and performance inefficiencies. Longitudinal assessment tracking enables refinement of personalized learning strategies throughout the program.

4. Outcomes

Interim analysis of baseline assessment data demonstrated scores ranging from 50 percent to 80 percent, with most participants (six out of eight) scoring between 63 percent and 80 percent, indicating moderate baseline competency with identifiable gaps. Consistent deficiencies were observed in safety reporting, escalation sequencing, and protocol deviation management.

Early session-based assessments suggest progressive improvement in participant performance, particularly within previously identified areas of weakness. Assessment data also identified variability in test-taking performance, including pacing inefficiencies, prompting targeted interventions such as timed practice exercises.

Midpoint and final assessment outcomes are pending; however, the program incorporates a predefined readiness framework in which final examination scores ≥80 percent will indicate high competency across domains and classification into a high-confidence readiness band for certification preparedness.

5. Lessons Learned and Future Directions

An AI-enabled, personalized CRC certification preparation program presents a feasible and scalable approach to clinical research workforce development. Early findings from this pilot highlight the value of integrating baseline analytics, individualized learning pathways, and targeted training strategies to address knowledge gaps and test-taking behaviors.

Future efforts will focus on refining assessment thresholds, optimizing individualized study strategies, and expanding the program to additional cohorts. Broader adoption of AI-driven educational strategies may strengthen workforce sustainability and improve the quality of oncology clinical trial conduct across cancer centers.