

DAILY ENGLISH READING

2026-07-27 · C1 · 30 minutes

Why does clinical-programming AI need a tool layer?

Why selected: ClinAgent shows how a general coding agent can be augmented with clinical-programming skills, deterministic checks and controlled tools. This is directly relevant to SAS/CDISC workflows.

READING ORDER

0-3	Preview title, numbers and questions
3-15	Read main article sections
15-20	Read supporting source 1
20-25	Read supporting source 2
25-30	Complete speaking task

SOURCES

MAIN: ClinAgent - <https://academic.oup.com/biomed/article/11/1/bpag032/8706433>

SUPPORT: FDA M11 - <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/m11-clinical-electronic-structured-harmonised-protocol>

SUPPORT: CDISC ARS - <https://www.cdisc.org/standards/foundational/analysis-results-standard>

BRIEF BACKGROUND

ClinAgent is not a new LLM. It uses a Thin MCP, Thick Skills architecture. In a single-study proof of concept, nine skills passed functional validation. Deterministic checks found one error and seven warnings without false positives. Specification generation reached 72.1% overall accuracy, above 96% in simple domains and below 55% in complex domains, so expert review remains necessary.

KEY VOCABULARY

agent augmentation	智能体增强
domain-specific tooling	领域专用工具
Model Context Protocol	模型上下文协议
stateless operation	无状态操作
packaged expertise	封装的专业知识
deterministic rule engine	确定性规则引擎
specification parsing	规格说明解析
functional validation	功能验证
false positive	假阳性
derivation accuracy	衍生准确率
audit trail	审计追踪
context minimization	上下文最小化
machine-readable	机器可读的
provenance	来源与处理轨迹
production readiness	生产就绪性

USEFUL PHRASES

1. bridge the gap between reasoning and execution
2. use deterministic logic where correctness is critical
3. require expert review before operational use
4. preserve end-to-end traceability
5. be validated against a reference result

COMPREHENSION QUESTIONS

1. Why are general coding agents insufficient?
2. What does Thin MCP, Thick Skills mean?
3. Which components were deterministic?
4. Why did complex domains perform worse?
5. How could M11 and ARS improve traceability?

RETELLING PROMPTS

30 sec: problem -> architecture -> result

45 sec: protocol -> spec -> ADaM -> QC -> TFL

60 sec: explain generative + deterministic + human review

5-MINUTE SPEAKING TASK

Propose one bounded SP automation. State the input, LLM step, deterministic checks, programmer review and production-readiness criteria.

ONE SENTENCE TO KEEP

A trustworthy clinical-programming agent is a controlled system of tools, rules, metadata, validation evidence and accountable human review.