From Framework to Function: Implementing AI-Driven Tools to Support Healthcare Value Analysis Practice

Kyle P. Atkins, Ed.S., NRP, PMP, CVAHP, eFACHDM
Veritas Technology Solutions, LLC

BACKGROUND & PROBLEM

Artificial intelligence is increasingly explored across healthcare operations, but most implementations remain broad, general-purpose, and highly dependent on the user's ability to construct effective prompts.

In healthcare value analysis, that creates a real limitation. General-purpose chatbots — Copilot, Claude, ChatGPT, Gemini — assist with brainstorming, summarization, and exploratory questions, but they do not inherently understand the **structure, terminology, evidence expectations, or decision pathways** of value analysis practice. Without that context, outputs stay surface level, inconsistent, or disconnected from the work being performed.

> **The question is not whether a large language model can generate useful information. It is whether the AI system is designed with enough context to support the professional task itself.**

MATERIALS & METHODS

A general GPT-based assistant was first used to support value analysis questions and exploratory tasks. Limitations in contextual depth, repeatability, and workflow alignment were then used to identify opportunities for more structured AI support. Development progressed through three stages:

01 **General GPT assistant** for broad VA support
02 **Purpose-built literature synthesis tool** for a defined evidence-review task
03 **VA-centered platform** with modular tools designed around recurring professional workflows

Tool design was informed by value analysis practice needs, responsible AI principles, and the *AHVAP Position Statement on Safe, Ethical, and Responsible Use of Artificial Intelligence in Healthcare Value Analysis* (2024). Each workflow was structured around defined inputs, expected outputs, human review, and purpose-bound use.

GOVERNANCE APPLIED AT EVERY STAGE

- Human oversight
- Transparency
- Purpose limitation
- Evidence-based practice
- Accountability

Stage 1: Custom GPT: Broad VA Support



The **Healthcare VA Assistant** chatbot was the first implementation of a value-analysis-based tool, built to give professionals more targeted guidance in accomplishing value analysis tasks.

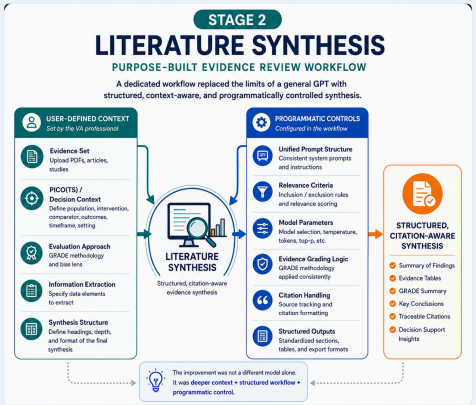
WHAT WE LEARNED

The custom GPT showed that AI could meaningfully support value analysis work, especially for broad questions, summarization, comparison, and exploratory analysis. Its familiar conversational interface also made it easy for professionals to begin using AI without changing how they approached the work.

However, the quality of the output still depended heavily on the prompt and the context supplied by the user. File handling, evidence interpretation, and occasional hallucinations limited its reliability for deeper, repeatable evidence-review tasks.

The key lesson was that broad AI capability was useful, but professional context still largely lived in the prompt rather than in the tool itself.

Stage 2: Literature Synthesis: Purpose-Built Evidence Review



The limits of the custom GPT were most apparent during literature review: evidence could be summarized or compared, but the interaction depended on prompt quality, file handling was constrained, and outputs lacked the depth of synthesis needed for decision support.

A dedicated **Literature Synthesis** workflow was built around the evidence-review task itself — structured PDF ingestion, OCR, PICO(TS) context, inclusion and exclusion criteria, bias lens, decision intent, structured evidence extraction, and citation-aware synthesis.

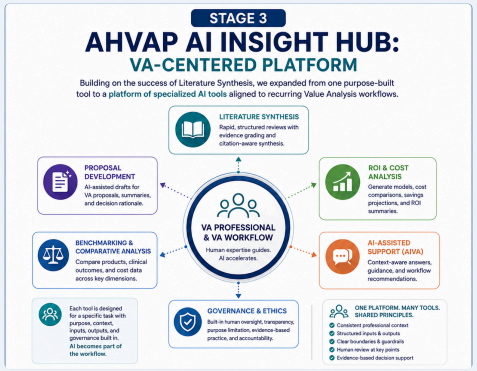
WHAT WE LEARNED

The purpose-built workflow gave both the user and the application greater control over how evidence was reviewed. Users could define the clinical and decision context, evaluation criteria, extraction needs, and how the final synthesis should be structured.

Programmatic controls standardized prompts, GRADE methodology, relevance criteria, model settings, structured outputs, and citation handling. This made the process more observable, repeatable, and better aligned to the needs of value analysis professionals.

The key gain was not simply a better model, but deeper context and greater control around the model.

Stage 3: AHVAP AI Insight Hub: VA-Centered Platform



The success of Literature Synthesis showed the same design approach could extend beyond evidence review. Rather than building one increasingly complex chatbot, the next step was a **collection of purpose-built tools aligned to recurring value analysis workflows**.

The **AHVAP AI Insight Hub** expanded the model into a VA-centered platform with dedicated tools for literature synthesis, proposal development, ROI analysis, benchmarking, and AI-assisted support. Each tool is designed around its own task, context, inputs, outputs, and governance requirements instead of forcing every activity through a single conversational interface.

WHAT WE LEARNED

The success of the literature synthesis workflow showed that the same approach could extend across other value analysis tasks. Instead of building one increasingly complex assistant, each workflow could be designed around its own purpose, context, inputs, outputs, and review requirements.

This shifted the platform from a chatbot-centered model to a workflow-centered one, allowing shared governance principles to be applied consistently across literature review, proposal development, ROI analysis, benchmarking, and other VA functions.

The goal shifted from building an AI assistant to building VA workflows that use AI where it adds value.

CONCLUSIONS

Across all three stages one pattern held: **AI became more useful as professional context, workflow structure, and programmatic control increased.**

General-purpose and custom GPT-style assistants remain valuable for broad support, but VA-specific tasks benefit from tools that define context, task logic, expected outputs, and human review points in advance.

Purpose-built workflows improve consistency, reduce dependence on prompt-engineering skill, and make AI use more observable and governable while preserving the VA professional's role in interpretation and decision-making.

> **For value analysis teams, the question may be less "Which AI model should we use?" and more "How should AI be designed around the work we already do?"**

LIMITATIONS & NEXT STEPS

Findings reflect iterative development and early implementation rather than a controlled comparative study.

Future work should evaluate, across broader VA workflows:

- Usability and output consistency
- Evidence quality and grading accuracy
- Governance performance
- User and decision outcomes

REFERENCES

Garrett, J. H., Jr., Roberts, S., Orlando, A. M., Maas, T., Robbins, K., Sullivan, J., Niven, K., McCauley, P. A., Wear, K., & Atkins, K. P. (2024). *AHVAP position statement: Safe, ethical, and responsible use of artificial intelligence in healthcare value analysis.* ahvap.org

Atkins, K. P. (2025). *Augmenting value analysis with artificial intelligence: Framework, tools, and ethical guidelines.* AHVAP poster presentation.

CONFLICT OF INTEREST DISCLOSURE: Kyle Atkins is an employee of Veritas Technology Solutions, LLC and holds stock/equity in the organization.

EXPLORE THE HUB
AHVAP AI Insight Hub
ahvap.veritastech.io
katkins@veritastech.io

The deeper the domain context, the deeper the utility.