

Evaluating the capabilities of AI tools for extracting pricing and reimbursement insights



Authors Tokarska, J¹; Sloggett, R¹; Foxon, G²
¹Remap Consulting, Cheshire, United Kingdom; ²Remap Consulting, Zug, Switzerland

INTRODUCTION

- ▶ The advancement of artificial intelligence (AI) has unlocked new potential in health economics and outcomes research (HEOR). AI has been employed recently for tasks such as automation of Network Meta-Analyses and Health Economic Modelling with promising results^{1,2}
- ▶ Key aspects for utilising AI from a pricing and reimbursement (P&R) perspective include:
 - The ability to define the right research questions
 - Develop research methodology,
 - Access diverse information sources
 - Evaluate the relevance and reliability of the information collected.
- ▶ The potential for AI to support these tasks effectively is the focus of this investigation

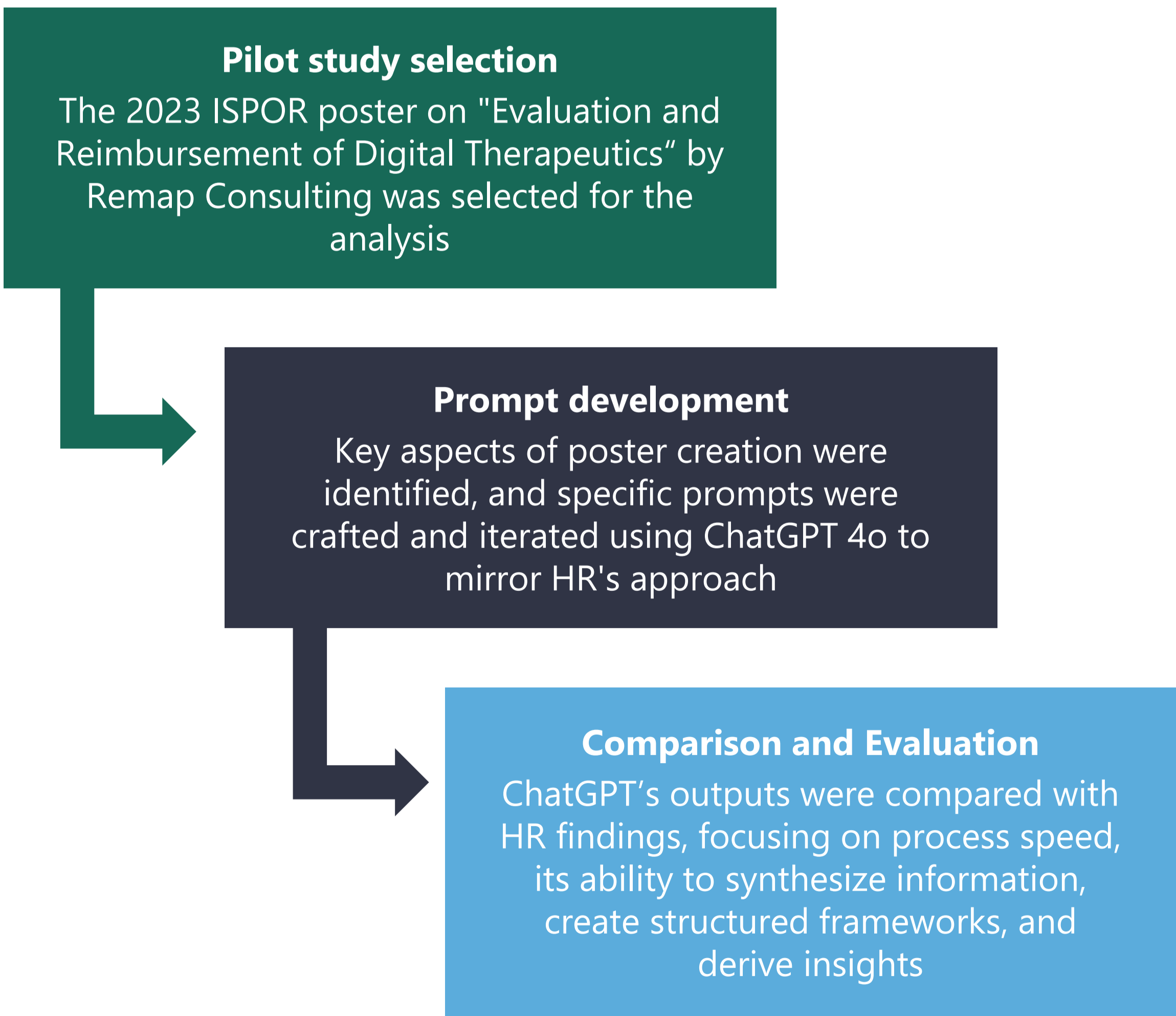
OBJECTIVES

This study compares the effectiveness and accuracy of ChatGPT to human researchers (HR) in analysing the evaluation and reimbursement of digital therapeutics. It evaluates ChatGPT's reliability as a tool for insight extraction in healthcare P&R research in terms of replicating the outcomes from a 2023 ISPOR research poster using targeted prompts.

METHODS

ChatGPT-4o was used to assess whether generative AI could replicate or enhance research findings and expedite the process compared to human researcher (HR) analysis.

Figure 1. Methodology used in this research



RESULTS

Figure 2. Performance evaluation of research and poster development using generative AI (chatGPT-4o) vs. Human researcher (HR)

Stage of poster development	Generative AI performance against Human Researcher (HR)	Comment on advantage of one option over the other
1. Design research framework		ChatGPT efficiently suggested a structured and thorough research methodology, comparable to that of HR, with the key advantage of speed
2. Identify relevant sources		<ul style="list-style-type: none">▶ HR identified some key primary sources that ChatGPT missed, as the AI occasionally generated false links and inaccurate information▶ While ChatGPT was effective in quickly finding data from established sources, it struggled with finding some recent developments
3. Extract accurate information	Web	<ul style="list-style-type: none">▶ HR input was needed to refine prompts, verify accuracy, and fill gaps, which reduced overall efficiency of using AI
	Documents	
4. Draw conclusions from data		<ul style="list-style-type: none">▶ ChatGPT accurately extracted information from uploaded documents, generated meaningful conclusions, and expedited the research process▶ However, HR validation was needed for complex or ambiguous data, with the quality of insights heavily dependent on the precision of the prompts
5. Present information in visual format		While ChatGPT can assist with wordsmithing and generating files in various formats (e.g., PowerPoint), it currently lacks the ability to create well-structured poster layouts or coherent visuals

Generative AI Human Researcher

CONCLUSIONS

1. ChatGPT shows significant potential for practical applications in P&R research. While its capabilities are not yet fully consistent, they are expected to improve over time
2. Its effectiveness relies heavily on the creation of precise prompts and thorough review by human researcher (HR); fact-checking and refining prompts are essential for achieving reliable results
3. For optimal use, it is key to select tasks where the time invested in developing prompts is justified by the value of the results obtained

REFERENCES

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Abbreviations: AI: Artificial Intelligence; ChatGPT: Chat Generative Pre-trained Transformer; GEN. AI: Generative Artificial Intelligence; HEOR: Health Economics and Outcomes Research; HR: Human Researcher; ISPOR: International Society for Pharmacoeconomics and Outcomes Research; P&R: Pricing and Reimbursement