Poster **48**

One Size Doesn't Fit All: Using Artificial Intelligence to Tailor Plain Language Summaries to Different Audiences

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Summary

Background & introduction

Plain language summaries (PLSs) of clinical trial data are crucial for supporting patients with low health literacy and enabling shared decision-making, particularly in light of the time constraints faced by healthcare professionals (HCPs).

Purpose

Our primary goal was to generate two distinct PLSs – one for patients and one for HCPs – from a single manuscript. Specifically, we aimed to determine whether AI and standardization principles could create:

1. Patient PLSs with more reading ease than those already published
2. HCP PLSs with shorter reading times than those already published

Methods

Guided by service design's human-centered approach, we developed an Artificial Intelligence with human-in-the-loop (AI + HiTL) workflow. This workflow utilized standardized templates informed by Regulation (EU) No 536/2014 on clinical trials and a related user study.[1]

Findings

The workflow provided a straightforward method for creating PLSs through term extraction and template population. Compared with published manuscripts and their corresponding plain language summaries of publications (PLSPs), the Ogilvy-prepared PLSs showed improved readability scores and shorter reading times.

Conclusions

This pilot study demonstrates that an AI + HiTL workflow can generate distinct PLSs for patients and HCPs from a single manuscript. Further research will explore scalability across therapeutic areas and develop AI systems to assist with generating accessible and informative figures to specifically address low graph literacy.

Reading time halved: **A game-changer for clinicians?**

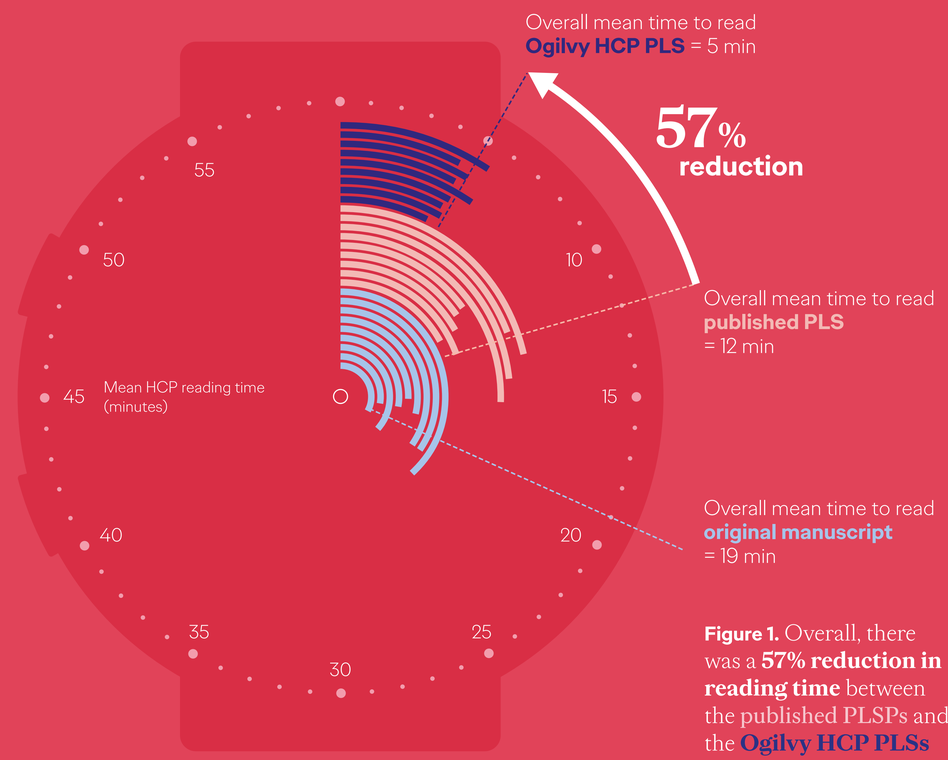


Figure 1. Overall, there was a **57% reduction in reading time** between the published PLSPs and the **Ogilvy HCP PLSs**

Methods

Regulation (EU) No 536/2014 was used as a starting point to create **two types of PLSs – one tailored to patients, one tailored to HCPs.**



1.
Regulatory & Research-Based Foundation

Based on Regulation (EU) No 536/2014 & Raynor et al.[1], our approach aimed to provide a simplified and standardized approach to writing PLSs.



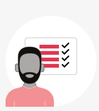
2.
AI-Powered Template Creation

Patient & HCP PLS templates weret built with AI+HiTL resulting in high readability template copy for bespoke study term population.



3.
AI-Driven Term Extraction

Medical writers prompted AI to extract bespoke terms from Phase 2/3 clinical trial manuscripts.



4.
HiTL Refinement

Medical writers prompted AI to populate HCP and Patient PLS templates with bespoke terms and verified output accuracy and readability.



5.
Data Analysis Metrics

FRE scores and reading time differences were assessed between the original manuscript, published PLSP, and Ogilvy-prepared AI + HiTL PLSs.



6.
Qualitative Feedback

Semi-structured interviews with medical writers gathered insights on workflow comprehension, usability, satisfaction, and to inform template refinement.

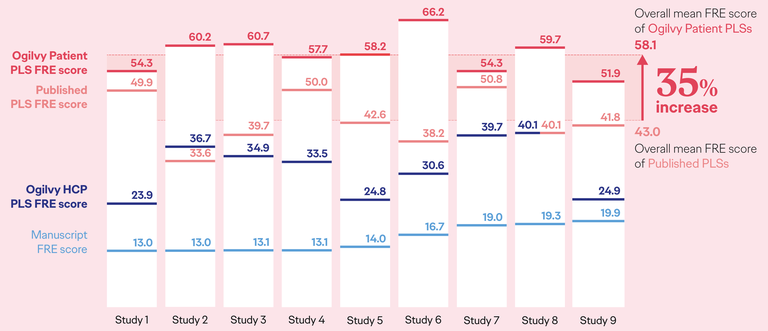
Results

246 terms were extracted from 9 manuscripts, creating 14 Patient PLSs and 13 HCP PLSs.

Ogilvy HCP PLSs take substantially less time to read compared with published PLSPs, demonstrating potentially improved efficiency for clinicians (Figure 1, left).

Figure 2. The mean FRE scores of the Ogilvy Patient PLSs were all higher compared with their published PLSPs.

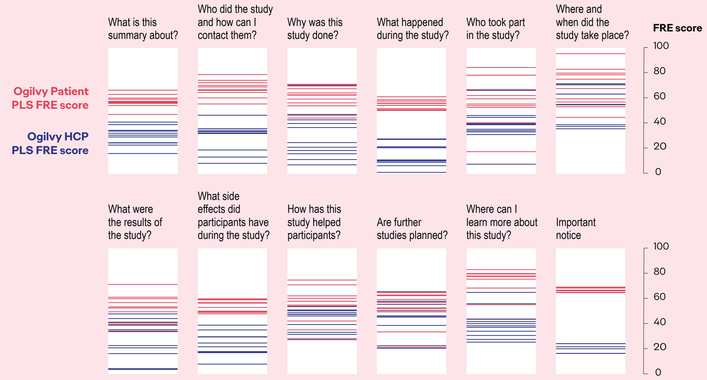
Mean FRE scores of original manuscripts, published PLSPs, and Ogilvy Patient and HCP PLSs



Ogilvy Patient PLSs consistently achieved higher FRE scores (mean 58.1, SD 4.0) than published PLSPs (mean 43.0, SD 5.7), indicating improved readability and comprehension for individuals with low health literacy.

Figure 3. FRE scores for each section were generally higher for the Ogilvy Patient PLSs compared with the Ogilvy HCP PLSs, but distribution of FRE scores varied by section of the PLS.

Distribution of FRE scores per section of the Ogilvy Patient and HCP PLSs



Ogilvy Patient PLSs generally had higher FRE scores than Ogilvy HCP PLSs, indicating better patient readability. FRE score distribution varied by section, reflecting differences in content complexity.

Qualitative reflections from medical writers on workflow

Medical writers found AI-assisted writing saved time, improved content clarity for patients, and offered scalability, but required human oversight to mitigate inaccuracies.

References: 1. Raynor DK et al. Clinical Trial Results Summary for Laypersons-A User Testing Study. Ther Innov Regul Sci. 2018; 52(5): 606–628.

Abbreviations: AI, artificial intelligence; FRE, Flesch Reading Ease; HCP, healthcare professional; HiTL, human in the loop; PLS, plain language summary; PLSP, plain language summary of publication.

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