

# AI-Assisted Automation in Rheumatology Case Management: Practical Experience in Smart Hospital Transformation

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## Background and Aim

Managing patients using biologic therapies in rheumatology requires complex assessment, monitoring, and patient education. Manual data handling is time-consuming and prone to error. This project aimed to integrate artificial intelligence (AI) tools into case management to enhance accuracy, efficiency, and patient care quality at Chiayi Christian Hospital.

## Methods / Intervention / Approach

An AI-assisted workflow was designed by combining ChatGPT with Excel cross-analysis table creation. Daily medical data and laboratory results automatically generated individualized assessment forms. A cross-analysis sheet tracked over 300 patients and 16 types of biologic therapies to identify those due for follow-up or testing. Case managers continuously reviewed AI outputs and refined templates as needed, evaluating efficiency and data accuracy, which in turn improved overall quality of patient services.

## Results / Outcomes / Observations

Manual entry time decreased by approximately 60%, and tracking accuracy for biologic therapies improved. Overdue follow-ups were identified. AI-generated laboratory data enabled case managers to more quickly evaluate changes in patients' pain conditions, monitor liver and kidney function, and assess medication adherence during follow-up. Case managers reported higher work efficiency and more time for direct patient interaction.

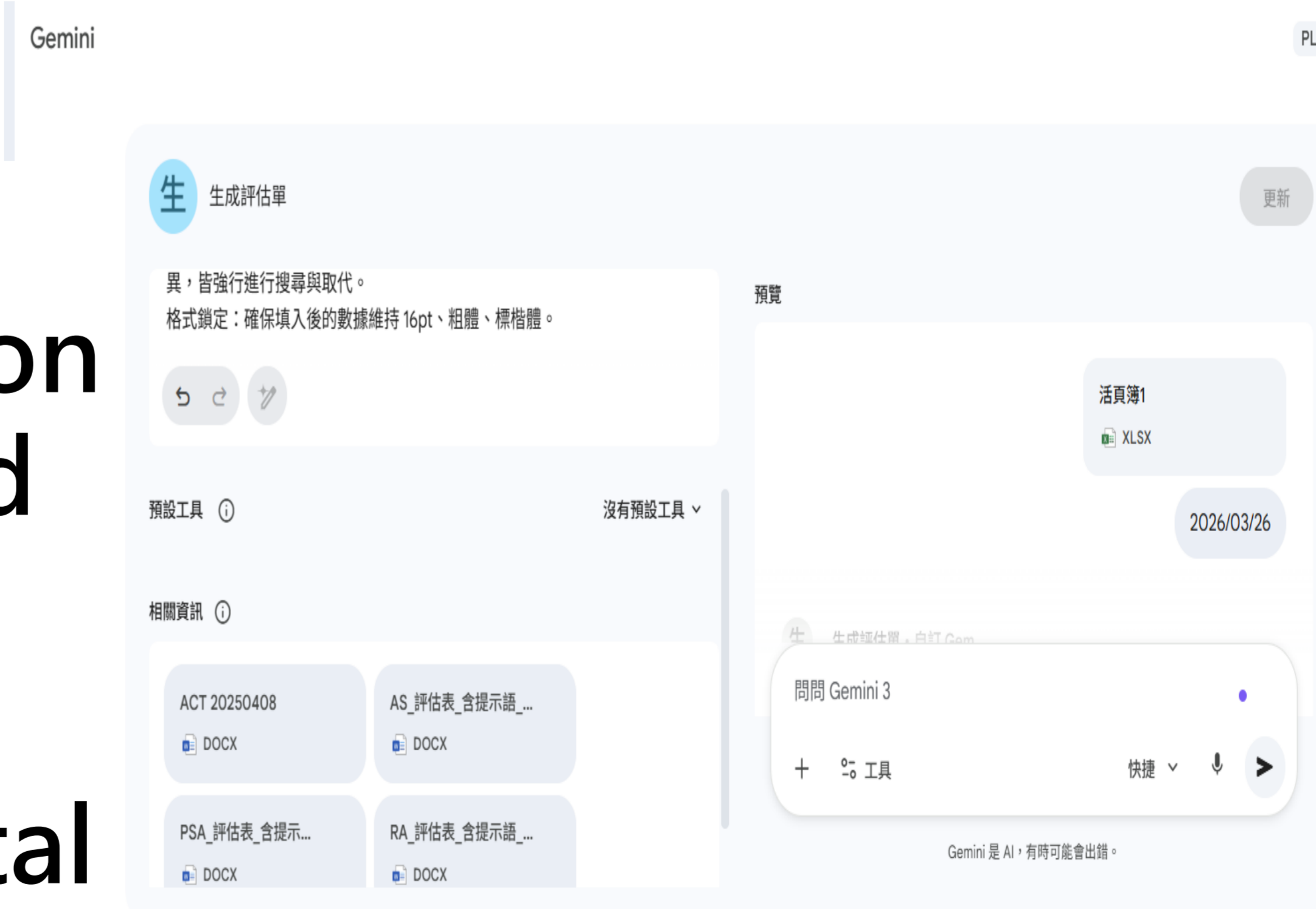
## Conclusion / Lessons Learned

AI tools effectively support rheumatology case management by reducing repetitive documentation and improving communication. Success depended on active human oversight and interdisciplinary collaboration. This approach demonstrates how responsible AI adoption can advance smart hospital transformation and clinical care quality.

## Relevance to HPH

Digital innovation and ethical use of technology—illustrating responsible AI application to strengthen healthcare efficiency, quality, and equity.

Keywords: Artificial Intelligence, Rheumatology, Biologic Therapy, Smart Hospital, Case Management



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