

# How Does Health Information Technology Impact on the Safety of Test Result Follow-Up? A Systematic Review

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## BACKGROUND

Health information technology (HIT) systems hold the potential to:

- reduce errors in the test result management process
- increase patient involvement in their care

However, implementation of such systems has been sporadic and evidence of its effectiveness remain elusive.

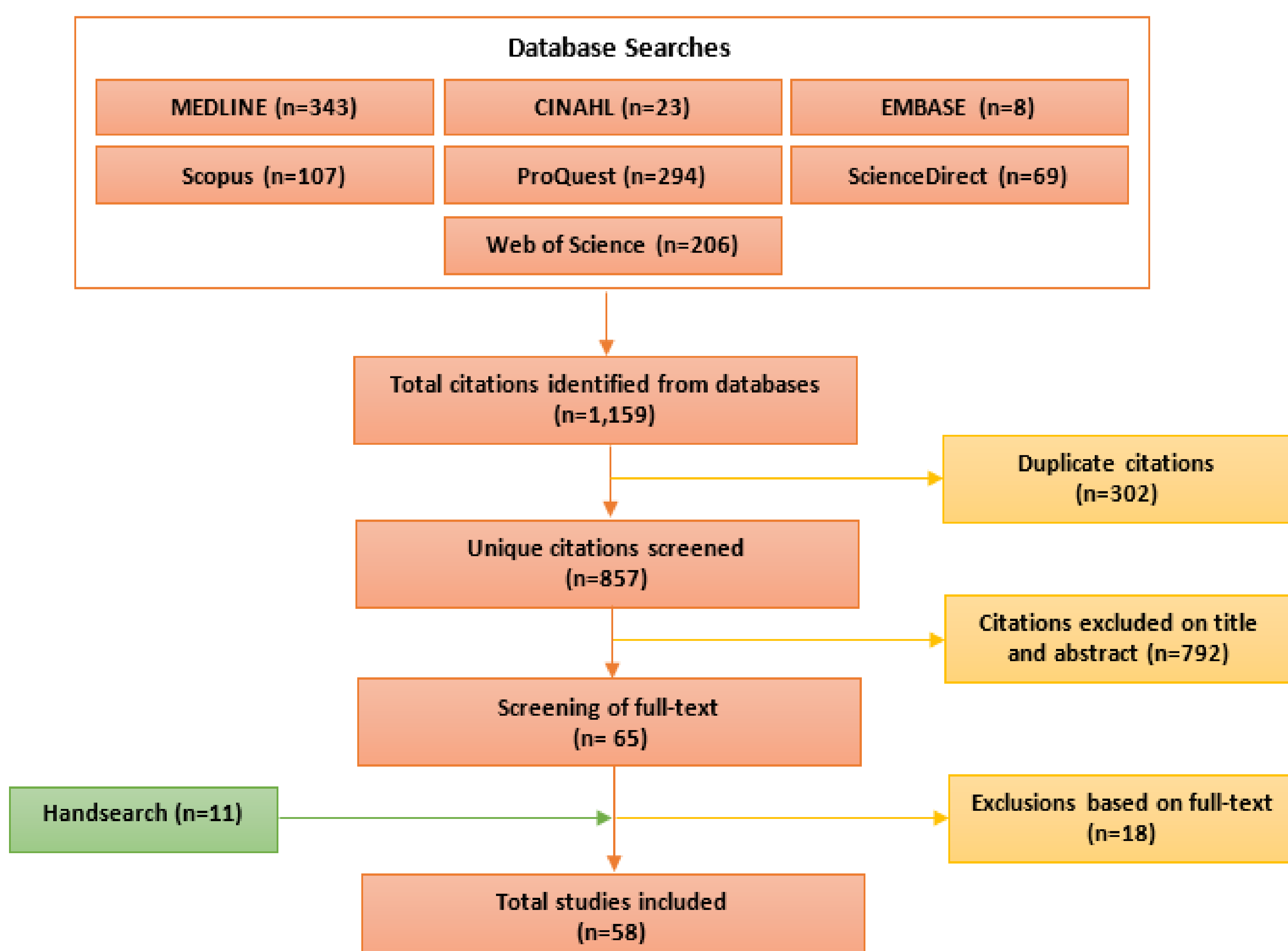


## OBJECTIVE

A systematic review was undertaken to explore the impact of computerised HIT interventions on the test result follow-up process for clinicians and patients.

## METHODS

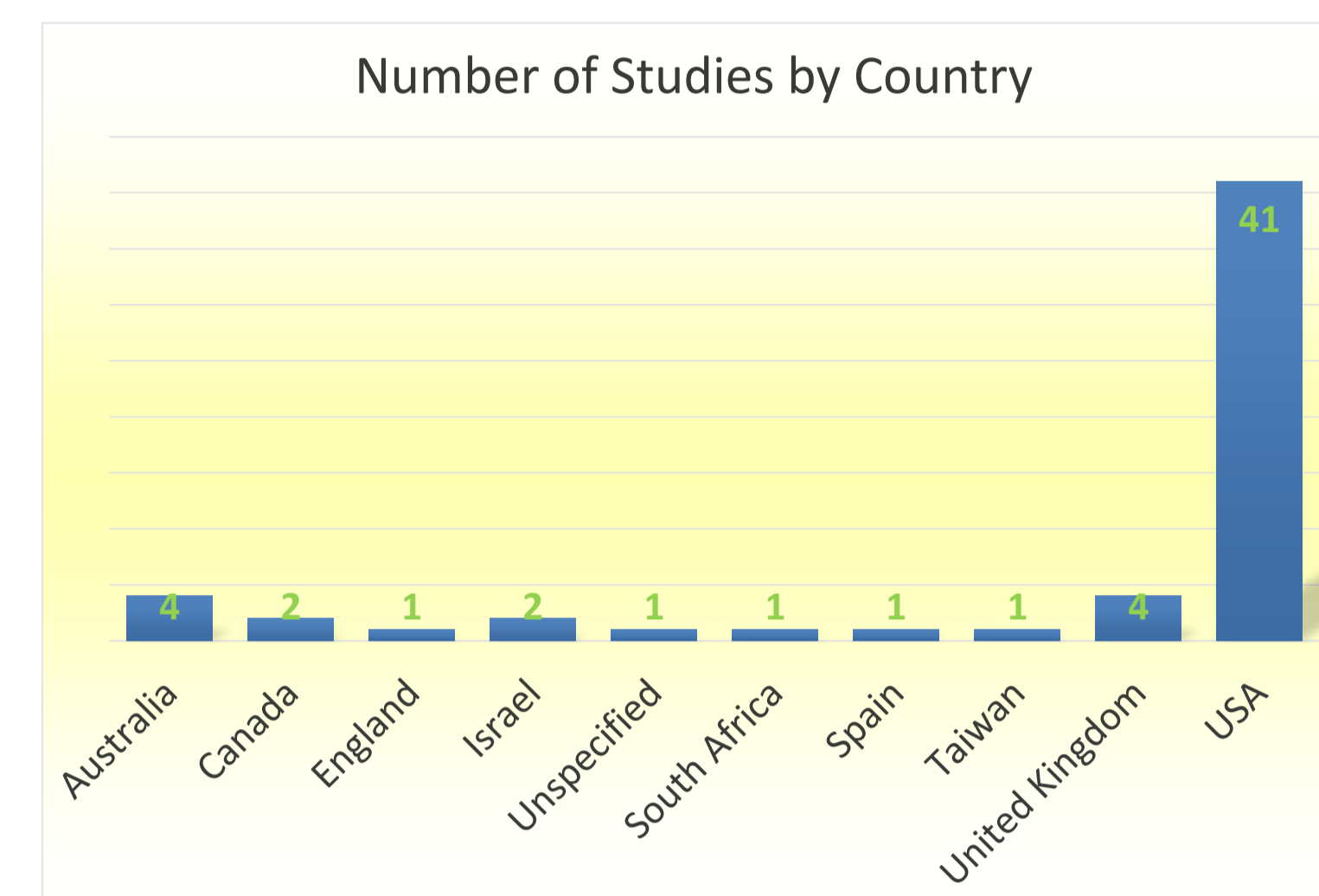
The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. A search combined terms related to HIT systems, clinician test result management, and patient access to results was performed from 1995-2016.



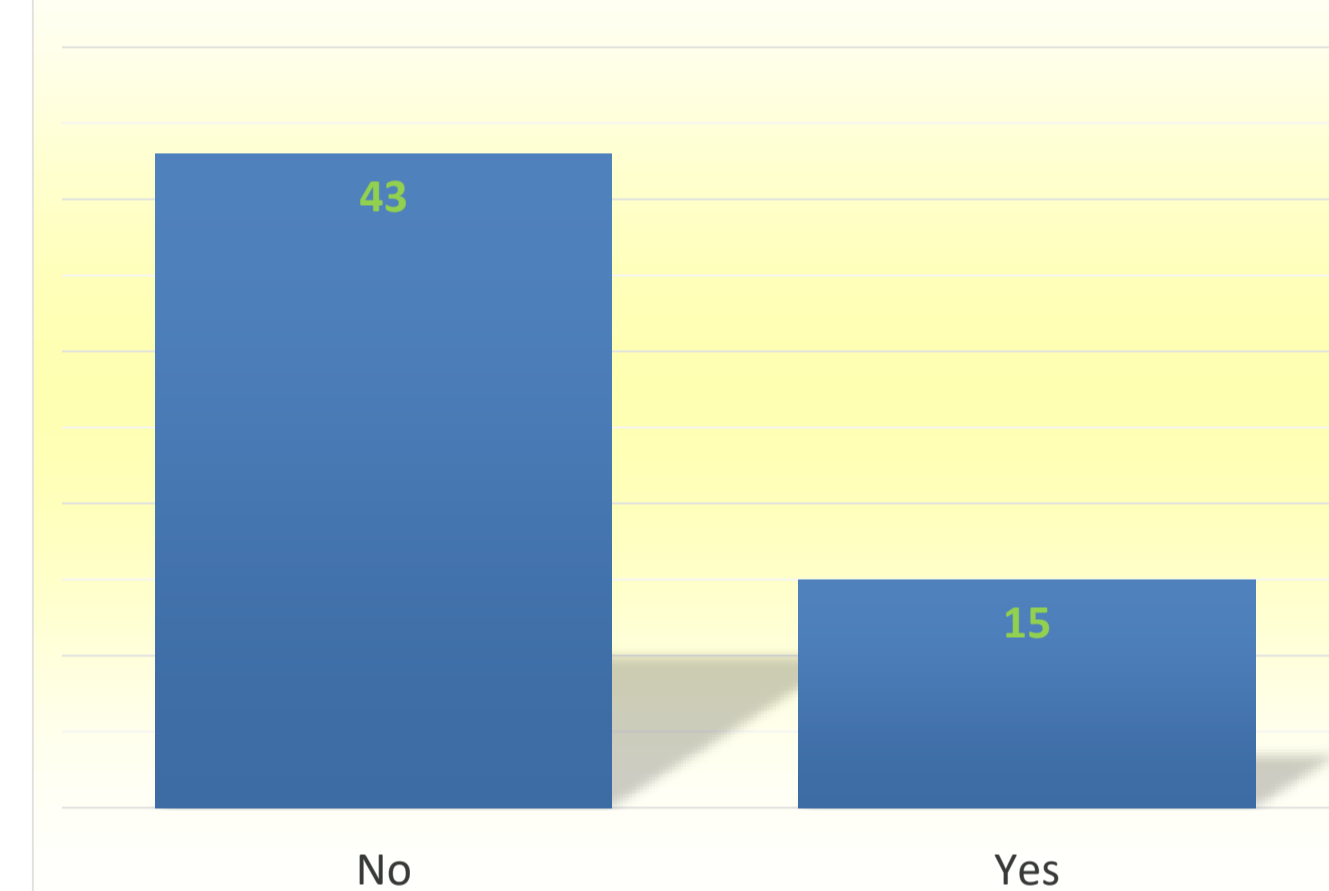
PRISMA Search Flow

## RESULTS

- Majority of studies (55/58) were published from 2006 onwards, and originated from the United States (41/58)



Do Studies Include a Form of Patient Portal?



- 43/58 studies focussed on the impact of HIT on clinician test result follow-up, whilst only 15 articles examined patient experiences with electronically accessing results

- Patient responses to accessing their results were mixed. Greater understanding of their condition and ownership of their healthcare were cited as benefits, whereas the ability to correctly interpret results, and technical issues were identified as potential challenges
- HIT interventions predominantly involved various alerts (system flags, and email, SMS, and pager notifications). 16/34 studies which quantitatively assessed the impact of electronic interventions on clinician test result follow-up reported improvements, however errors in this process remained despite a highly computerised healthcare environment
- Qualitative findings indicated that technical interventions must be implemented in parallel with organisational work process changes to ensure the correct use and integration of HIT into the clinical setting to achieve the intended outcomes.

## CONCLUSIONS

The past decade has seen a proliferation of evidence surrounding the impact of HIT on test result management, and an emerging focus on the potential role of patients in this process. The test result follow-up process is complex, requiring both technical and context-dependent measures and policy initiatives to foster a culture of safety and vigilance.