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Economic analysis of a multicentre study of pharmacist-led person-centred medicines reviews in general practice

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BACKGROUND

- Potentially inappropriate prescribing (PIP) is associated with adverse events and hospitalisations (1). Total PIP expenditure in Ireland was estimated to be €46 million in those aged ≥70 years in 2007 (2). The EU-funded iSIMPATHY project provided an opportunity to integrate pharmacists into 10 general practice settings in border counties in Ireland, to deliver a structured medicines review service with patients with polypharmacy (≥10 regular medicines) and/or PIP.
- Little is known about the economic impact of pharmacists in general practice. This study aimed to assess the economic impact of this medicines review service.

METHODS

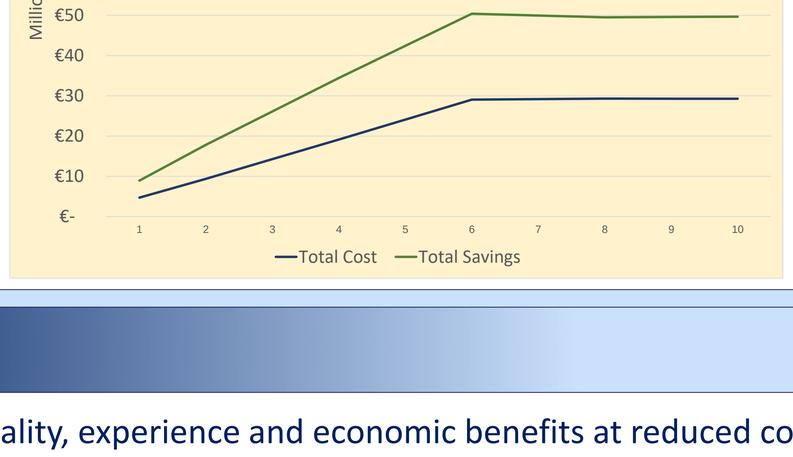
- Pharmacists carried out comprehensive person-centred medicines reviews with patients meeting the original project inclusion criteria. The 7 steps to medicines review (3) approach was followed and pharmacists liaised with the GP, other healthcare professionals and the patient to action recommendations.
- Pharmacist interventions were graded for potential clinical impact, with training, guidance, a quality assurance and peer review process ensuring consistency.
- Service delivery costs were based on the pharmacist's salary and related costs (4), recorded timings, and a GP fee (5). Direct cost savings were calculated from the cost change of medications post review, projected to one year (6). Indirect savings associated with avoidance of adverse drug reactions (ADRs) were calculated using a population-based ADR admission avoidance model (7,8) and an intervention-based ADR avoidance model (9,10, 11).
- Sensitivity analysis adjusted costs to account for a pharmacist spending 80% of their working time in medicines review-related activity. This informed modelling of the costs and savings of mainstreaming the service to cover the population prescribed 10 or more regular medicines (7), at 2023 salaries and leave allowances.

RESULTS

- Over 2,500 patients engaged in pharmacist-led medicines reviews.
- Polypharmacy reduced by a mean of 1.6 medicines and PIP by 17.6 points in modified Medicines Appropriateness Index. Patient reported outcomes and GP experience were positive.
- The cost of delivering the service and direct and indirect cost savings are presented below.
- A net saving of €288 to €722 per review is achieved, a return on investment of €1.88 to €4.72 per Euro invested.

		Per review (€)	Annual per pharmacist (€)
Review costs	Pharmacist costs plus GP fee	153	94,271
Direct cost savings	Medicines	376	232,368
Indirect cost savings	Population-level	65	40,170
	Intervention-related	499	308,382
Net cost savings	Population-level	288	177,776
	Intervention-related	722	445,604

- Sensitivity analysis determined annual net savings of €125,045 to €338,407 per pharmacist per annum spending 80% of working hours time on review-related activity.
- The economic impact of mainstreaming the service nationally, based on the lower estimate of net savings, is illustrated below. This models introduction of an adequate clinical pharmacist resource to each community healthcare network, working with all GP practices by year 6.



DISCUSSION

- This dedicated comprehensive medicines review service is economically dominant, providing significant quality, experience and economic benefits at reduced cost.
- This model demonstrates advantages over other models of medicines review reported in Irish research. Key to this is pharmacists providing additional capacity and capability through integration into GP practices, enhancing access to quality care close to the patient in line with Sláintecare principles. This facilitates access to the patient's history and information, prioritisation of patients and facilitated streamlined communication and follow-up with the GP. Reviews were person-centred, facilitating improved understanding and shared decision making and meaning an additional GP/patient consultation was not required.
- Modelling intentionally adopts a conservative approach to calculate potential net savings and demonstrates the economic viability of mainstreaming.
- Mainstreaming would significantly improve patient safety and experience, quality of prescribing and produce substantial savings to the health budget.

CONCLUSIONS

- Delivery of comprehensive person-centred medicines reviews by pharmacists integrated into general practice settings results in substantial benefits while generating a significant return on investment far exceeding expenditure on service delivery.
- Mainstreaming would deliver a minimum net saving of €125,045 per annum for each pharmacist introduced to deliver this service in general practice.

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