Process evaluation of the Safer Prescribing and Care for the Elderly (SPACE) cluster randomised controlled trial in New Zealand general practice

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Handling Editor:
Felicity Goodyear-Smith

ABSTRACT

Introduction. The Safer Prescribing and Care for the Elderly (SPACE) cluster randomised controlled trial in 39 general practices found that a search of the practice database to identify and generate for each general practitioner (GP) a list of patients with high-risk prescribing, pharmacist-delivered one-on-one feedback to GPs, and electronic tick-box for GPs to select action for each patient (Patient letter; No letter but possible medication review when patient next in; No action), prompted safer prescribing at 6 months but not at 1 year. **Aim.** This process evaluation explores research participation, intervention uptake and effect on GPs. **Methods.** Mixed methods were used including quantitative data (log of practice recruitment, demographic data, intervention delivery and GP responses including tick-box selections) and qualitative data (trial pharmacist reflective journal). Data were analysed using descriptive statistics and general inductive analysis, respectively. **Results.** Recruitment of general practices was challenging, with only 39% of eligible practices agreeing to participate. Those who declined were often 'too busy'. Engagement was also challenging, especially in larger practices, with the trial pharmacist managing to meet with only 64% of GPs in the intervention group. The GPs who did engage were positive about the intervention, but elected to send letters to only 23% of patients with high-risk prescribing, either because the high-risk prescribing had already stopped, the GP did not agree the prescribing was 'high-risk' or the GP was concerned a letter would upset the patient. **Conclusions.** Effectiveness of the SPACE cluster randomised controlled trial could be improved by changes including ensuring searches are current and relevant, repeating cycles of search and feedback, and integrating pharmacists into general practices.

Keywords: aged care, prescription medicines, primary health care, quality and safety, randomised trials.

Introduction

Efforts are ongoing to identify interventions that support safer medication prescribing in general practice to minimise adverse drug events (ADEs) and related hospitalisations.[1,2] The Safer Prescribing and Care for the Elderly (SPACE) cluster randomised controlled trial was conducted in New Zealand general practice from 2018 to 2020 to investigate the effect of the SPACE intervention on high-risk prescribing of non-steroidal anti-inflammatory and/or antiplatelet medicines and related hospitalisations.[3] High-risk prescribing places patients at increased risk of ADEs. SPACE is a complex intervention involving: (i) an automated search of practice records to identify and generate for each general practitioner (GP) a list of patients with high-risk prescribing for the prescribing topic; outreach visit from pharmacist to deliver: (ii) group education to GPs (30–60 min) and (iii) one-on-one feedback with each GP (15–30 min); (iv) tick-box for GPs to indicate an intended action for each patient in their list (Letter; No letter but possible change and/or

WHAT GAP THIS FILLS

What is already known: The SPACE intervention comprising general practice electronic database searches to identify patients with high-risk prescribing, pharmacist-delivered education and feedback to GPs, and letters from a GP to invite patients to a medication review, had only a partial short-term effect on prescribing safety.

What this study adds: This process evaluation found that barriers to GP uptake of the SPACE intervention included time pressures, absence of existing relationship with pharmacists, and reluctance to send automated letter to patients. To improve uptake and effectiveness of the SPACE intervention, integrating pharmacists into practices, repeating the search, remunerating GPs for participation and repeated cycles may be necessary.

discussion with patient when next in; No action); and (v) letter from a GP to selected patients inviting them to discuss their medicines when they are next in (Supplementary Table S1).[3] All GPs who attended the one-on-one session with the study pharmacist received a NZ$100 gift voucher. The trial found that SPACE decreased high-risk prescribing for gastrointestinal ADEs at 6 months, primarily by increasing proton-pump inhibitor protection, but did not decrease high-risk prescribing for ardiovascular or renal ADEs. This partial effect was not sustained at 12 months and there was no difference in ADE-related hospitalisations. The detailed methods and results have been published previously.[3–5]

Process evaluations are recommended to understand how and why an intervention has or has not worked, and to help understand variation in responses and discrepancies between expected and observed effect.[6,7] Process evaluations can help to understand whether an intervention was implemented and delivered in the way that was intended and reasons for variation, and can outline contextual influences on effectiveness to inform future intervention development and implementation.[6,7] Reported here is the SPACE process evaluation describing recruitment of practices and GPs, intervention delivery and uptake, and GP responses to the intervention.

Methods

The process evaluation was planned prospectively using a mixed methods approach including quantitative and qualitative data. The evaluation is reported using the framework developed by Grant *et al.*[6] The SPACE cluster randomised controlled trial was registered with the Australasian Clinical Trials Register (ACTRN12618000034235, January 2018), and approved by the University of Auckland Human Participants Ethics Committee (Ref. UAHPEC 020092).

Study population

The SPACE trial was conducted in 39 general practices with 21 867 participants identified as at increased risk of experiencing gastrointestinal, renal or cardiac ADEs from non-steroidal anti-inflammatory or anti-platelet medications at baseline, of whom 1479 (6.8%) had received high-risk prescribing.[3] Of the 39 practices, 20 were allocated to the intervention group, including 100 GPs and 613 participants with high-risk prescribing at baseline. All practices had electronic medical records and used practice management systems compatible with the trial system for a remote electronic search of the practice database.

Data collection

Quantitative data were collected from a number of sources including: (i) publicly available data on the number of GPs working at practices; (ii) log of practice recruitment; (iii) practice demographic data on forms completed by recruited practices; and (iv) log of intervention delivery maintained by study pharmacist that included a number of GPs attending the group education, number of GPs attending the one-on-one sessions to review their list of patients with high-risk prescribing, and GP tick-box selection for each patient. Practice variables collected and included in the regression analyses were: practice list size, number of GPs, proportion of patients aged ≥65 years, proportion of patients of Māori or Pasifika ethnicity, whether the practice was a 'high needs' practice, practice accreditation status, whether the practice taught medical students, or whether the practice allowed online electronic ordering of repeat prescriptions, had a system of medications reconciliation or tagged a diagnosis to prescriptions. A 'high needs' practice was defined as having at least 50% of enrolled patients from the lowest socio-economic quintile or Māori or Pasifika ethnicity. 'High needs' practices are funded differently, requiring the practice to charge lower patient fees.[8] Qualitative data were collected by the trial pharmacist in an electronic reflective journal summarising GP comments and responses, and pharmacists' perceptions of interactions and descriptions of intervention delivery.

Analyses

Quantitative analyses used descriptive statistics to compare characteristics of recruited practices with those of eligible practices that declined, to ascertain generalisability of results. Univariate and multivariate logistic regression models, including variables listed above, were used to examine associations between practices and variation in intervention uptake and GP responses. To assess whether practice characteristics were associated with level of engagement and responses, a sensitivity analysis was conducted, excluding intervention practices that did not engage at all. General inductive analysis was used to categorise qualitative data.

Results

Recruitment of practices

A search of GP databases identified 220 general practices in the study region. Of these, less than half were eligible for the trial (101/220) due to earlier participation in the SPACE pilot, involvement in a contemporaneous non-trial safer prescribing initiative, or using practice management software not compatible with the study clinical outcomes data extraction process. Thirty-nine practices (39%) agreed to participate. Larger practices with more GPs tended to be more likely to participate (mean (s.d.) number of GPs 5.1 (3.4) vs 3.8 (3.1), $P = 0.08$). The most common reason for practices declining was 'too busy'.

Intervention delivery

Twenty practices were randomised to receive the intervention, including 100 GPs and 613 patients identified as having high-risk prescribing at baseline (Table 1). Of the 100 GPs, only 64 (64%) attended the one-on-one session with the study pharmacist, reviewing only 416 of the 613 (68%) patients (Table 1). In two large practices, no GP engaged with the intervention, and in a third practice, only one GP engaged, resulting in 197 (32%) patients receiving no review. Larger practices with more patients and/or more GPs were less likely to engage than practices with fewer patients or fewer GPs ($P = 0.009$ and $P = 0.03$ respectively) (Table 2). Other practice factors did not significantly influence engagement, including ethnic make-up of the practices' patients, practice high-needs status, involvement in teaching, use of electronic repeat prescriptions or tagging diagnosis to prescriptions when adjusted for practice ($P = 0.13$, 0.60, 0.47, 0.63 and 0.95 respectively) (Table 2).

The study pharmacist's journal data confirm the difficulty securing a meeting with GPs, especially in larger practices, and sometimes GPs did not attend arranged meetings citing more pressing demands and being 'too busy' (Supplementary Table S2). In one practice, the trial pharmacist made multiple attempts over a 6-month period. The trial pharmacist was not known to practices, which presented a barrier to engagement.

Response to intervention

The 64 GPs who did engage indicated in the tick-box their intended action for 416 participants, including 'Letter' 97 (23%), 'No letter but possible change and/or discussion with patient when next in' 151 (36%), and 'No action' 168 (40%) (Table 1). The most common reason for GPs selecting 'No action' was because the high-risk prescribing had already ceased; for example, short-course non-steroidal anti-inflammatory, although sometimes the GP did not agree that the prescribing was high-risk or believed it was patient preference. The GPs from practices that were college (Royal

New Zealand College of General Practitioners) accredited were more likely to send letters, whereas GPs from practices with a greater proportion of older patients or Māori/Pasifika patients were less likely to send letters (Table 2), although the latter association was not significant when practices that did not engage were excluded (Table 3).

The qualitative data reveal that the SPACE intervention was positively viewed by GPs who did engage, and that GP tick-box selections were based on knowledge of their patients. GPs sometimes opted not to send a letter for fear of confusing or upsetting the patient; for example, if a patient had dementia or English was their second language (Table 1).

Discussion

The SPACE intervention prompted medication review and shared decision-making for some patients, but any effect on high-risk prescribing was short-lived. This process evaluation used mixed methods to help understand implementation of the SPACE intervention in general practice and the limited effect of the intervention, adding to the knowledge gained from the pilot study and qualitative interviews.[3–5]

Recruitment into the trial was challenging. Time pressures and poor remuneration remain major barriers to GPs participating in research, but it was also bad timing that a non-trial safer prescribing initiative targeting the same prescribing topic was introduced at the same time. Recruitment of patients through an automated search of practice records was successful, and facilitated by not needing patient consent for use of anonymised patient data.

It was challenging for the trial pharmacist to engage GPs in some of the enrolled larger practices where there was no pre-existing relationship and the practice manager had provided consent to participation rather than individual GPs. For such an intervention to work, the majority of GPs need to support the intervention. Time pressure and competing demands were the main reasons for GPs not engaging with the intervention. We found that GP engagement with the pharmacist-delivered intervention was higher in the pilot study where the study pharmacist had a pre-existing relationship with practices and GPs.[3] For pharmacist-supported safer prescribing intervention benefit to be sustained, ongoing relationships between pharmacists and practices may help.[9]

The opportunity for GPs to select an action for each patient is an important step in the behaviour change process. However, GP uptake of the patient letter was less than intended (23%). Some GPs were concerned that the letter might confuse or upset patients, despite earlier work showing that patients responded well to such a letter from their GP.[10] The GPs elected 'No letter but possible change and/or discussion with patient when next in' for another 36% patients. As a formal alert or reminder was not part of the

Table 1. SPACE intervention delivery and GP tick-box selection: practice size, number of GPs receiving SPACE intervention, number of participants with high-risk prescribing (HRP) at review, and GP tick-box selections indicating intended action.[3,11]

Practice label	GPs N (FTE)	Practice size (n patients)	High-risk prescribing (n patients)	One-on-one with GP and pharmacist (n GPs)	GP tick-box selections: Intended action for patients with HRP (%)				Intervention delivery notes	Rationale for GP tick-box selection
					Letter n (%)	No letter	No action	No review		
A	4 (3)	7111	15	4 (1 via phone)	10 (67)	1	3	1	GPs set alerts, ordered bloods as went through list, some patients 'do what they want anyway' and so intervention won't change.	No letter was sent, blood form instead. No action as issue resolved or patient left practice.
C	15 (not known)	12 776	111	1	3 (3)	1	3	104	Only 1 of 15 GPs attended a one-on-one session, although 2 GPs attended group education session.	No letter due to patient dementia or worried about causing anxiety. No action as issue resolved or patient bought OTC PPI.
E	3 (2.5)	3076	22	3	10 (45)	1	11	0	GPs were engaged. Set alerts to review with note why. Liked letter to inform patients, liked letter for those patients who just kept phoning for repeats rather than coming in for review with GP. Nurses also involved as they often managed the phone for repeat and follow-up.	Didn't send letter to patients who were anxious frequent attenders or demented; No action due to topical NSAID/PPI already started/clopidogrel already stopped.
F	10 (5.8)	10 265	27	10	11 (41)	7	9	0	Engaged. Some GPs more engaged than others. Flagged computer to prevent re-starting NSAIDs if had already stopped. Used dashboard and messages. Liked the letter and thought patients would like it as a sign of being proactive.	No letter if don't speak English, or frequent attender. No action if issue already resolved.
K	4 (not known)	5187	71	4	17 (24)	31	23	0	Required 4 visits to get to all 4 GPs.	No letter care of prefer to phone or talk during consultation, or fear of upset and breakdown of relationship; No action if issue resolved.

Table 1. (*Continued*)

Practice label	GPs N (FTE)	Practice size (n patients)	High-risk prescribing (n patients)	One-on-one with GP and pharmacist (n GPs)	GP tick-box selections: Intended action for patients with HRP (%)				Intervention delivery notes	Rationale for GP tick-box selection
					Letter n (%)	No letter	No action	No review		
M	12 (9)	11 826	49	0	0 (0)	0	0	49	No response from practice.	
O	4 (3)	3854	34	4	8 (18)	14	12	0	Worked with nurse who passed on info to GPs. GP verified PPI recommendations with cardiologists and got varying opinions.	No letter as had sent blood test form already; No action if issue resolved.
Q	6 (2.5)	4722	13	6	0 (0)	0	0	13	All GPs reviewed lists together. Didn't send letters but phoned patients themselves or put notes on computer to review.	No letter care of phoned; No action care of flagged and HR accepted.
R	2 (1.8)	2341	17	2	4 (24)	2	7	4	One GP made notes for nurse to enter alerts into the computer system.	Patient due to come in, fear of anxiety. Issue resolved.
S	6 (?)	6105	40	6	4 (10)	19	17	0	Engaged. But practice had already participated in SiP.	No letter as phoned patients; No action as issues resolved.
T	1 (1)	805	3	1	2 (67)	0	1	0	GP enjoyed being involved and opportunity for refresher.	No action as issue resolved.
U	2 (1.5)	1542	7	2	4 (57)	2	1	0	Shared patients difficult to allocate to GP.	No letter as patient due in soon. No action as issue resolved.
V	8 (7)	9459	58	4	20 (34)	18	20	0	GPs pleased to be part of the audit, surprised at level of HRP, lots of patients with gout.	Seeing patient soon. Mild dementia. Issue resolved.
W	1 (1)	2476	18	1	0 (0)	1	17	0	Most HRP resolved as was short-term NSAID.	English second language. Preferred to phone patients. Issues resolved.
AC	4 (3.3)	6477	26	4	0 (0)	14	12	0	Met separately with each GP.	GPs made notes, didn't like letters. Issues resolved, or HRP chosen.

Table 1.   (*Continued*)

Practice label	GPs *N* (FTE)	Practice size (*n* patients)	High-risk prescribing (*n* patients)	One-on-one with GP and pharmacist (*n* GPs)	GP tick-box selections: Intended action for patients with HRP (%)				Intervention delivery notes	Rationale for GP tick-box selection
					Letter *n* (%)	No letter	No action	No review		
AD	3 (3)	4061	31	3	5 (16)	7	19	0	Pleased to be involved and reminded. Pleased about MOPS.	No letter if coming in soon. No action if resolved.
AF	5 (2.2)	3501	17	5	1 (6)	13	3	0	Very happy to have pharmacist visit and education.	Didn't like the idea of sending letters.
AH	1 (1)	1471	9	1	0 (0)	5	4	0	GP liked being updated as felt things changed all the time and difficult to keep up.	Didn't like letters, knew patients well and preferred to talk.
AJ	6 (3.3)	3799	26	0	0 (0)	0	0	26	Impossible to pin down the doctors. Manager was going to pass on lists to GPs.	
AL	3 (1.5)	2007	19	3	8	5	6	0	Very engaged practice and GPs and keen to chat.	Happy for some to send letters.
Total	100 GPs	102 861 Patients	613 HRP	64 GPs	97 Letters	151 GP review	168 No action	197 No review	Overall: Difficulty getting time with GPs; Difficulty allocating patient to a list of one GP when registered to the practice as a group.	

Table reproduced with permission of the British Journal of General Practice.[3] FTE, full time equivalent; GP, general practitioner; HRP, number of at-risk patients identified with high-risk prescriptions of NSAIDs or antithrombotic medications during the previous 14 weeks; MOPS, maintenance of professional standards points towards re-accreditation; NSAID, non-steroidal anti-inflammatory drug; OTC, over the counter; PPI, proton pump inhibitor; Pts, patients; SiP, 'Safety in Practice' – an initiative targeting NSAID/anti-platelet prescribing in general practice.

Letter = automated letter from GP to patient inviting patient to discuss their medication at their next appointment.

No letter = possible change and/or discussion with patient when next in.

No action = no plan to change prescribing.

No review = no one-on-one session with pharmacist and GP reviewing patient list.

Table 2. Associations of practice characteristics with intervention uptake and response to intervention.

Practice characteristic	Proportion of GPs met one-on-one with pharmacist				Proportion of participants with HRP* sent letters			
	Univariate		Multivariate		Univariate		Multivariate	
	Odds ratio (95% CI)‡	P-value	Odds ratio (95% CI)	P-value	Odds ratio (95% CI)	P-value	Odds ratio (95% CI)	P-value
Number of enrolled patients†	0.82 (0.73, 0.92)	0.0006	13.84 (1.94, 98.61)	0.009	0.90 (0.85, 0.95)	0.0002	1.55 (1.00, 2.40)	0.05
Number of GPs	0.76 (0.67, 0.86)	<0.0001	0.06 (0.00, 0.80)	0.03	0.88 (0.83, 0.93)	<0.0001	0.67 (0.43, 1.03)	0.07
% patients ≥65 years	0.97 (0.92, 1.02)	0.3	1.18 (0.97, 1.44)	0.09	0.97 (0.94, 0.99)	0.004	0.92 (0.89, 0.96)	<0.0001
% patients Māori/Pasifika	0.96 (0.94, 0.98)	0.0002	0.94 (0.86, 1.02)	0.1	0.99 (0.98, 1.00)	0.03	0.98 (0.96, 1.00)	0.04
High-needs status (Y/N)	2.69 (1.11, 6.51)	0.03	2.23 (0.11, 45.46)	0.6	1.51 (0.98, 2.33)	0.06	1.04 (0.25, 4.24)	0.96
Accredited	1.61 (0.14, 18.44)	0.7	0.02 (0.00, 2.50)	0.1	3.61 (1.45, 8.94)	0.006	7.61 (1.52, 38.06)	0.01
Teaching	4.08 (1.56, 10.69)	0.004	2.51 (0.21, 30.73)	0.5	1.46 (0.94, 2.27)	0.09	1.52 (0.73, 3.18)	0.3
Electronic repeats	6.00 (1.24, 29.09)	0.03	3.61 (0.02, 711.97)	0.6	0.66 (0.36, 1.20)	0.2	0.36 (0.11, 1.21)	0.1
Medicines reconciliation	2.20 (0.69, 7.03)	0.2	67.55 (0.94, >999)	0.05	1.05 (0.53, 2.07)	0.9	0.78 (0.17, 3.49)	0.7
Tag prescription to diagnosis	3.05 (1.05, 8.86)	0.04	1.14 (0.01, 112.36)	0.95	0.80 (0.46, 1.38)	0.4	0.28 (0.08, 1.03)	0.06

*HRP, high-risk prescribing; CI, confidence interval.
†Number of enrolled patients in thousands.
‡Odds ratios one more unit with continuous measures No vs Yes for dichotomous measures.

intervention, GPs often left themselves a written reminder to follow up. The SPACE intervention may be improved by including a GP-initiated alert in the tick-box to serve as a reminder for GPs. The most common reason for GPs selecting 'no action' was that the high-risk prescribing had already stopped. Refining the search to exclude short-course medications would be an improvement, similarly running the search in real-time to avoid the information being 'out of date' at the time of review by GP and pharmacist.

The trial was not powered to address whether inequities could be addressed by this intervention. However, the finding that in practices with higher proportion of Māori/Pasifika patients, GPs were less likely to select 'Letter', was discouraging. Conversely, the findings that GPs in accredited practices were more likely to send out letters, and GPs in teaching practices were more likely to engage with the intervention is encouraging (Table 2).

Strengths and limitations

A strength of this study is the analysis of the tick-box data providing insight into GPs' responses to the feedback. A limitation is that our data did not allow follow up and so we do not know whether any change in prescribing followed on from the 'Letter' and 'No letter' options. The qualitative data provide useful insights, despite the pharmacist's journal being potentially biased. Qualitative interviews with the GPs would have been preferable. Earlier qualitative work found that GPs thought the patient list and educational sessions were useful, but added to time pressures.[10] It also found that although GPs were concerned about sending out a letter to patients, patients were pleased to receive a letter and to be invited in to see their GP for medication review. Another limitation is the lack of data from GPs who did not engage with the intervention.

International comparisons

Findings are consistent with previous trials in general practice that have encountered difficulties in recruitment and/or poor uptake and engagement with interventions.[11–15] An intervention that included a performance-based payment to each GP per patient was more effective.[16] Remuneration for practice participation in research is important, but it is generally accepted that quality improvement initiatives form part of standard practice.

The SPACE intervention was originally based on aspects of the Australian Veterans' Medicines Advice and Therapeutics Education Services (MATES) programme.[17] Although MATES involved quarterly targeted patient-specific prescriber feedback to GPs, SPACE was administered only once over a 12-month period. A key aim of MATES was the closer cooperation of GP and pharmacist in patient care and to prompt more pharmacist home medication reviews (HMR), as well as assess the effect of HMRs on adverse events. MATES sent

Table 3. Associations of practice characteristics with intervention uptake and response to intervention, excluding practices that did not engage at all.

Practice characteristic	Proportion of GP-received intervention				Proportion of participants with HRP* sent letters			
	Univariate		Multivariate		Univariate		Multivariate	
	Odds ratio (95% CI)‡	*P*-value	Odds ratio (95% CI)	*P*-value	Odds ratio (95% CI)	*P*-value	Odds ratio (95% CI)	*P*-value
Number of enrolled patients†	0.83 (0.72, 0.94)	0.004	2.28 (0.34, 15.18)	0.4	0.91 (0.86, 0.97)	0.003	0.73 (0.39, 1.33)	0.30
Number of GPs	0.79 (0.70, 0.90)	0.0005	0.49 (0.04, 5.67)	0.6	0.91 (0.86, 0.96)	0.0009	1.59 (0.80, 3.15)	0.2
% patients ≥65 years	1.05 (0.97, 1.12)	0.2	1.16 (0.99, 1.34)	0.06	0.98 (0.96, 1.00)	0.09	0.94 (0.90, 0.98)	0.003
% patients Māori/Pasifika	0.98 (0.95, 1.00)	0.07	0.98 (0.90, 1.07)	0.7	1.01 (1.00, 1.02)	0.05	1.00 (0.98, 1.03)	0.8
High-needs status (Y/N)	2.60 (0.88, 7.68)	0.08	5.04 (0.27, 95.09)	0.3	1.22 (0.78, 1.90)	0.4	1.14 (0.28, 4.63)	0.9
Accredited	0.83 (0.07, 9.66)	0.9	0.21 (0.00, 13.62)	0.5	2.90 (1.17, 7.19)	0.02	13.54 (2.4, 76.42)	0.003
Teaching	1.63 (0.57, 4.70)	0.4	0.77 (0.06, 9.93)	0.8	1.05 (0.68, 1.64)	0.8	1.14 (0.53, 2.44)	0.7
Electronic repeats	3.00 (0.60, 15.04)	0.2	7.28 (0.06, 940.96)	0.4	0.48 (0.26, 0.88)	0.02	1.02 (0.24, 4.41)	0.98
Medicines reconciliation	1.00 (0.30, 3.39)	1.0	3.85 (0.06, 254.33)	0.5	0.80 (0.40, 1.59)	0.5	0.22 (0.04, 1.34)	0.1
Tag prescription to diagnosis	1.33 (0.43, 4.16)	0.6	3.03 (0.05, 175.45)	0.6	0.58 (0.33, 1.00)	0.05	0.36 (0.08, 1.64)	0.2

*HRP, high-risk prescribing; CI, confidence interval.
†Number of enrolled patients in thousands.
‡Odds ratios one more unit with continuous measures No vs Yes for dichotomous measures.

programme materials to 249 454 veterans, 34 527 GPs and around 8000 pharmacies and accredited pharmacists. Pharmacist HMR rates went from 0.6/1000 veterans in 2004 to around 2.2/1000 in 2010 after 21 MATES interventions.[17] Substantial reductions in hospitalisations from heart failure and haemorrhage in those at risk were seen in those who received HMR. It may be that repeated cycles of the SPACE intervention and more involvement of the pharmacist in funded practice- or home-based medication reviews at a patient level may have resulted in more substantial improvements in prescribing safety and patient outcomes. Furthermore, the letter to patients coming directly from the SPACE program rather than from the GP would have increased uptake of this aspect of the intervention.

Conclusions

This process evaluation found that the limited effect of the SPACE intervention could be due to factors including time pressures, lack of existing relationship between trial pharmacist and GPs, the patient list being out-of-date or inaccurate by the time of outreach feedback, and GP fear that a letter might upset a patient. More integration of pharmacists into general practices could support engagement and communication. We found engagement higher in the pilot study where the pharmacist was well-known to the GPs and a regular visitor to practices.[3,18] The practice database search could be run at the time of the pharmacist visit, ensuring the patient list is up-to-date and relevant.

GPs often elected 'No letter but possible change and/or discussion with patient when next in'. Including a formalised prompt or alert option for this selection might support GPs to follow through on this. Future studies may link GP tick-box selection with prescribing at the patient level, to determine whether selections resulted in change in prescribing.

Supplementary material

Supplementary material is available online.

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