OPTIMISE: a pragmatic stepped wedge cluster randomised trial of an intervention to improve primary care for refugees in Australia

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The known: People from refugee backgrounds face significant barriers to high quality, coordinated primary health care, leading to increased physical and mental health morbidity. Health assessments are important components of quality primary care. Outreach practice facilitation is a promising approach to quality improvement in primary care.

The new: Outreach facilitation by facilitators working for three Australian local health authorities increased the proportion of patients from refugee backgrounds who received MBS-subsidised comprehensive health assessments during their first year in Australia from 19.1% to 27.3%.

The implications: A collaborative program of outreach facilitation can help health services and primary health networks optimise primary care for vulnerable groups in our community.

Abstract

Objectives: To examine whether primary care outreach facilitation improves the quality of care for general practice patients from refugee backgrounds.

Design: Pragmatic, cluster randomised controlled trial, with stepped wedge allocation to early or late intervention groups.

Setting, participants: 31 general practices in three metropolitan areas of Sydney and Melbourne with high levels of refugee resettlement, November 2017 – August 2019.

Intervention: Trained facilitators made three visits to practices over six months, using structured action plans to help practice teams optimise routines of refugee care.

Major outcome measure: Change in proportion of patients from refugee backgrounds with documented health assessments (Medicare billing). Secondary outcomes were refugee status recording, interpreter use, and clinician-perceived difficulty in referring patients to appropriate dental, social, settlement, and mental health services.

Results: Our sample comprised 14 633 patients. The intervention was associated with an increase in the proportion of patients with Medicare-billed health assessments during the preceding six months, from 19.1% (95% CI, 18.6–19.5%) to 27.3% (95% CI, 26.7–27.9%; odds ratio, 1.88; 95% CI, 1.42–2.50). The impact of the intervention was greater in smaller practices, practices with larger proportions of patients from refugee backgrounds, recent training in refugee health care, or higher baseline provision of health assessments for such patients. There was no impact on refugee status recording, interpreter use increased modestly, and reported difficulties in refugee-specific referrals to social, settlement and dental services were reduced.

Conclusions: Low intensity practice facilitation may improve some aspects of primary care for people from refugee backgrounds. Facilitators employed by local health services could support integrated approaches to enhancing the quality of primary care for this vulnerable population.

Trial registration: Australian New Zealand Clinical Trials Registry, ACTRN12618001970235 (retrospective).

Human displacement has reached unprecedented levels: about 26 million people were refugees or seeking asylum in 2017.[1] Australia accepted more than 180 000 refugees between January 2009 and December 2018.[2] After resettlement in Australia, many people with refugee backgrounds have problems with access to health and social care.[3,4] Coordination of care is difficult, waiting times are long, and the transition between specialist services and mainstream general practice is not always well managed. It has been difficult for the Australian primary care sector to provide consistently high quality care for this vulnerable group.[3,5,6]

The Medical Benefits Schedule (MBS) has subsidised comprehensive health assessments by general practitioners of people in certain risk groups since 1999. For people from refugee backgrounds, these assessments can promote quality clinical care, service integration, catch-up vaccination, and help in the management of chronic conditions.[7] Australian guidelines recommend that all refugees be offered health assessments by GPs soon after they arrive in Australia[8] (Box 1).

Primary care outreach facilitation improves the management of chronic disease and preventive care, and promotes system change.[10] The OPTIMISE study was a mixed methods evaluation of an outreach facilitation intervention to improve care for people from refugee backgrounds in general practices in three Australian areas with high levels of refugee settlement.[11] We assessed whether outreach facilitation increased the conduct and documentation of health assessments for people from refugee backgrounds. We also assessed the recording of refugee status, the use of credentialed interpreters in consultations, and the use of refugee-specific referral pathways by practice staff.

Methods

OPTIMISE was a pragmatic, stepped wedge cluster randomised controlled trial with blind allocation to early and late intervention groups.[12] A detailed protocol has been published;[11] variations to the published protocol are included in the online Supporting Information (part A). Our reporting of the study conforms with the Template for Intervention Description and Replication (TIDieR) checklist and guide[13] and the CONSORT checklist for stepped wedge cluster randomised trials.[14]

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1 Health assessments for refugees in Australia

A health assessment for refugees and other humanitarian entrants, subsidised under the Medical Benefits Schedule (MBS), is available for up to twelve months after the date of issue of an eligible visa.[9]

Australasian Society for Infectious Diseases and Refugee Health Network of Australia guidelines recommend that the assessment includes:[7]

- the migration history of the patient;
- their medical history, including current problems, exposure to communicable diseases, vaccination history (taking countries of origin and transit into account), and chronic disease and lifestyle risk factors;
- their psychosocial history, including settlement stressors and long term effects of torture and trauma;
- a physical examination;
- screening investigations; and
- the development of a management plan and documentation of referral options to assist management of the person's health and psychosocial needs.

People from refugee backgrounds are also eligible for health assessments for people in other risk groups, including people aged 75 years or more, those aged 45–49 years and at risk of developing a chronic disease, people with intellectual disability, and permanent residents of aged care facilities. These MBS health assessments should include taking a patient history, examination, relevant investigations, and documentation of recommendations. Health assessments may involve collaboration between patients' usual general practitioners and other health professionals, such as practice nurses.

The trial was retrospectively registered with the Australian New Zealand Clinical Trials Registry on 5 December 2018 (ACTRN12618001970235).

Setting and participants

The OPTIMISE trial was undertaken in general practices in areas of high refugee settlement in southeast and northwest Melbourne and southwest Sydney.[15,16] Local partnerships — comprising clinicians, academics, health service managers, and members of local refugee communities — oversaw implementation of the intervention. We recruited general practices that provided comprehensive primary care services, had been operating for at least 12 months, did not plan to close within two years, and used electronic medical record systems compatible with our data extraction tool. We excluded practices in which fewer than half the practice GPs consented to participation. Each recruited practice received a $2000 honorarium, and practice staff were offered continuing professional development credits.

Intervention

The OPTIMISE intervention was delivered during November 2017 – August 2019 by facilitators seconded from local health services. One facilitator was a medical practitioner and refugee health fellow, and three were nurses, including two with prior refugee health care experience. Each attended one-day pre-intervention training and participated in regular telephone meetings with facilitators from the other two areas.

The intervention had four priority activity areas: the conduct of comprehensive health assessments, identification of people from refugee backgrounds, use of interpreters in consultations, and identification of refugee health referral pathways. Facilitators provided three 60- to 90-minute visits and up to three follow-up telephone calls over six months, working with practice teams (comprising at least one GP and one practice nurse) to improve the organisation and delivery of health care for refugees. Facilitators helped teams develop action plans in the priority areas, aligned with the needs of the individual practices, and introduced practitioners to a resource manual and electronic summary sheet of relevant local resources. All practices received at least three visits by facilitators, but not all received three telephone contacts, some being replaced by *ad hoc* or planned practice visits.

Randomisation and masking

Clusters comprised participating general practices. After recruitment, practices were allocated to the early or late intervention groups using a procedure[17] that minimised differences by area and practice size (based on number of full-time equivalent [FTE] GP positions: < 4 or ≥ 4 FTE positions). Early intervention group practices received the intervention (T1) immediately after baseline data collection (T0). Late intervention group practices received the intervention (T2) six months after completing a second round of baseline data collection (T1) (Box 2). Our statistician (author JCE) was masked to practice details. Allocation codes were generated with Minim (https://www-users.york.ac.uk/~mb55/guide/minim.htm). When possible, two or more practices were randomised at the same time to avoid allocation being predictable for recruitment staff.

Data collection

Patient data were collected at three (early intervention practices) or four (late intervention practices) time points (Box 3). We added a text search tool to the CAT4 (PenCS) clinical audit software to identify patient records for people from refugee backgrounds. The tool identified electronic medical records that included the words "refugee" or "asylum seeker", a country of birth or ethnic background corresponding to a country from where more than 70% of people arriving in Australia enter via the humanitarian visa stream,[16] and arrival in Australia since 1 January 2012 (documented year of arrival or first visit to the practice) (Supporting Information, part B).

Identified patient records were independently screened by two research assistants; disagreements were resolved by discussion. Electronic medical records from different time points were merged by patient and practice identification number to ensure that only one record per patient was included. We extracted data on age, sex, postcode, country of birth, ethnic background, language, year of arrival, first practice visit date, visit dates during the preceding 12 months, and evidence of a health assessment (MBS billing codes 701, 703, 705, 707[9]).

2 The OPTIMISE study: stepped wedge study design

	Time point			
Intervention group	T0 1 Mar – 30 Oct 2017	T1 1 Jan – 30 June 2018	T2 1 July – 31 Dec 2018	T3 1 Jan – 30 June 2019
Early (17 practices)	Baseline	**Intervention**	**Post-intervention**	No data collection
Late (14 practices)	Baseline (1)	Baseline (2)	**Intervention**	**Post-intervention**

3 The OPTIMISE study: data collection timeline*

	Baseline (1) (early/late groups)	Baseline (2) (late group only)	Intervention	Six months after intervention
Practice description survey	x	x	—	—
Refugee health survey	x	x	x	—
Practitioner survey	x	x	x	—
Patient record data extraction	x	x	x	x

* Data were collected at the end of each period. ◆

We also administered three surveys (Supporting Information, part C):

- a baseline practice description survey, completed by the practice lead or practice manager, documenting practice staffing, patient demographic characteristics, governance, and processes of care;
- a refugee health survey, administered by the study research officer to practice teams during the first facilitation visit, documenting whole-of-practice approaches to refugee care and also used to help facilitators tailor the intervention to the needs of the practice;
- a practitioner survey, completed by GPs and practice nurses, documented their background, experience, and interest in refugee health care, their use of and views on interpreters, and the perceived ease of accessing refugee-specific referral pathways.

Most questions in the refugee health and practitioner surveys were derived from primary care performance surveys undertaken in Australia,[18] Canada,[19] and the United States.[20]

Outcomes

The intervention was assessed at the practice level. The primary outcome was the change in the proportion of eligible patients from refugee backgrounds with medical records including evidence of billing for MBS health assessments. There were also three secondary outcomes:

- Refugee status recording: change in proportion of patients from refugee backgrounds who were new to the practice (first visit date during the past six months) for whom their refugee status was recorded in defined fields of their practice medical record: country of birth, ethnic background, year of arrival, or need for interpreter.
- Credentialed interpreter use: change in proportion of appointments for patients with refugee backgrounds at which interpreter services were provided by the national Translating and Interpreting Service (TIS National)[21] for languages typically spoken by recently arrived refugees.
- Referral pathways: changes in clinician difficulty in referring patients with refugee backgrounds for help with social and settlement matters, mental health problems, and oral or dental health care (as reported in the practitioner survey), and documentation of refugee-relevant specialist services that were bilingual or offered bulk-billing (as reported in the refugee health survey).

Statistical analysis

We needed to recruit 12 practices in each area to detect a medium-large effect (an increase of 25–30%) in the primary outcome (intra-class correlation coefficient, 0.05; power, 80%; $\alpha = 0.05$). We summarised the characteristics of participating general practices by intervention group, and of patients included in assessment of the primary outcome, as descriptive statistics. Intervention effects were assessed in multilevel, mixed effects models, with practice-level clustering as a random effect ($P < 0.5$).[12] Analyses were conducted in Stata 16.0.

Our exploratory analysis required separate models to account for multiple collinearity. In the main model, outputs were calculated from 50 bootstrapped mixed models, with categorical practice characteristics as fixed factors: intervention group (early, late), intervention status (pre-intervention, post-intervention), practice size (fewer than four, four or more FTE GPs), area (1, 2, 3), and time point (T0, T1, T2, T3). In secondary covariate analyses, we replaced the area variable with baseline proportion of patients from refugee backgrounds and experience of refugee health training (model 2.1) or with baseline numbers of health assessments (model 2.2).

Secondary outcomes were assessed in χ^2, Wilcoxon matched pair signed rank, and McNemar tests; interpreter use was assessed in a χ^2 test. Covariate and cluster analyses of interpreter use and use of referral pathways were not conducted because of the small sample sizes.

Ethics approval

The Human Research Ethics Committees of Monash University (reference, 10086), Monash Health (17-487L), the South Western Sydney Local Hospital District (LNR/17/Lpool/391), and La Trobe University (S17-138) approved the study. Practice leads and clinic GPs respectively provided practice and individual consent at recruitment; clinicians consented when completing surveys or interviews.

Results

Seventy-eight practices were initially invited to participate; nineteen did not meet inclusion criteria, nine declined to participate, and fourteen were excluded for other reasons. Thirty-one of the recruited 36 practices completed the intervention (Box 4). Three practices from area 2 withdrew after randomisation; one practice from each of areas 1 and 3 withdrew after baseline data collection (one became ineligible for Medicare billing, one experienced delays in building new practice premises). The primary outcome analysis included patient records for 14 633 new patients from refugee backgrounds (Box 5; Supporting Information, part D).

Primary outcome: undertaking and documenting health assessments

The intervention was associated with an increase in the proportion of eligible new patients who had undergone health

4 Baseline characteristics of the 31 participating general practices

Characteristic	All practices	Early intervention group	Late intervention group
Number of general practices	31	17	14
Practice size (FTE GPs)			
Fewer than four	25 (81%)	13 (77%)	12 (86%)
Four or more	6 (19%)	4 (23%)	2 (14%)
Mean number (SD)	2.6 (2.1)	2.9 (2.3)	2.2 (1.7)
Number of GPs			
One (solo practice)	6 (19%)	3 (18%)	3 (21%)
2–5	16 (52%)	9 (53%)	7 (50%)
6–9	6 (19%)	3 (18%)	3 (21%)
10 or more	3 (10%)	2 (12%)	1 (7%)
Mean (SD)	4.5 (3%)	4.8 (3%)	4.1 (3%)
Refugee health training in 12 months preceding T0	8 (26%)	4 (24%)	4 (29%)
Proportion of practice patients from refugee backgrounds at T0, mean (SD)	6.2% (16%)	2.7% (5%)	10% (22%)
Proportion of practice patients from refugee backgrounds who received health assessments at T0, mean (SD)	8.6% (17%)	26% (31%)	17% (26%)
Practice software			
Medical Director	24 (77%)	13 (77%)	11 (79%)
Best Practice	7 (23%)	4 (24%)	3 (21%)
Proportion of GP sessions available in other languages*			
0–25%	13 (42%)	8 (47%)	5 (36%)
26–50%	4 (13%)	3 (18%)	1 (7%)
51–75%	0	0	0
76–100%	13 (42%)	6 (35%)	7 (50%)
Missing data	1	0	1
Mean proportion (SD)	49% (45%)	41% (43%)	59% (48%)
TIS National registrations per practice†			
0–25%	5 (16%)	3 (18%)	2 (14%)
26–50%	12 (39%)	5 (29%)	7 (50%)
51–75%	6 (19%)	3 (18%)	3 (21%)
76–100%	8 (26%)	6 (35%)	2 (14%)
Mean proportion (SD)	56% (29%)	60% (32%)	51% (26%)

FTE = full-time equivalent positions; SD = standard deviation; TIS National = Translating and Interpreting Service National. * Languages likely to be spoken by people from refugee backgrounds (Supporting Information, section B). † Denominator for proportion is number of GPs plus one (for practice-level registration). ◆

5 Characteristics of 14 633 patients from refugee backgrounds eligible for health assessments

Characteristic	Time point T0	T1	T2	T3
Number of patients	4371	3886	3453	2923
Sex				
Male	2051 (46.9%)	1885 (48.5%)	1636 (47.4%)	1392 (47.6%)
Female	2317 (53.0%)	2000 (51.5%)	1805 (52.3%)	1518 (51.9%)
Other/missing data	3	1	12	13
Age (years)				
0–14	1184 (27.1%)	999 (25.7%)	876 (25.4%)	792 (27.1%)
15–24	645 (14.8%)	562 (14.5%)	575 (16.7%)	475 (16.3%)
25–34	813 (18.6%)	723 (18.6%)	670 (19.4%)	556 (19.0%)
35–44	668 (15.3%)	608 (15.6%)	519 (15.0%)	414 (14.2%)
45–54	508 (11.6%)	439 (11.3%)	371 (10.7%)	320 (10.9%)
55–64	312 (7.1%)	297 (7.6%)	263 (7.6%)	210 (7.2%)
65 or more	241 (5.5%)	258 (6.6%)	179 (5.2%)	156 (5.3%)
Intervention group				
Early intervention	1108 (25.3%)	1152 (29.6%)	1049 (30.4%)	0
Late intervention	3263 (74.7%)	2734 (70.4%)	2404 (69.6%)	2923 (100%)
Intervention status				
Not yet received	4371 (100%)	2734 (70.4%)	0	0
Received	0	1152 (29.6%)	3453 (100%)	2923 (100%)
Area				
1	1447 (33.1%)	1042 (26.8%)	957 (27.7%)	494 (16.9%)
2	737 (16.9%)	682 (17.6%)	509 (14.7%)	349 (11.9%)
3	2187 (50.0%)	2162 (55.6%)	1987 (57.5%)	2080 (71.2%)
Country of birth/ethnic background*				
Iraq/Iraqi	1862 (42.6%)	1634 (42.0%)	1439 (41.7%)	1582 (54.1%)
Syria/Syrian	694 (15.9%)	738 (19.0%)	513 (14.9%)	329 (11.3%)
Afghanistan/Afghani	323 (7.4%)	284 (7.3%)	302 (8.7%)	164 (5.6%)
Other	836 (19.1%)	722 (18.6%)	783 (22.7%)	569 (19.5%)
Missing	656 (15.0%)	508 (13.1%)	416 (12.0%)	279 (9.5%)

* Field name according to recording software used by the practice. ◆

assessments during their first year in Australia, from 19.1% (95% confidence interval [CI], 18.6–19.5%) to 27.3% (95% CI, 26.7–27.9%; odds ratio [OR], 1.88; 95% CI, 1.42–2.50). Smaller practices were about eight times as likely as larger practices to undertake health assessments (< 4 *v* ≥ 4 FTE GPs: OR, 0.12; 95% CI, 0.09–0.16), and late group practices almost five times as likely as early group practices (OR, 4.84; 95% CI, 2.95–7.93) (Box 6).

In covariate analyses, the odds of health assessments being undertaken during the study increased with each one percentage point increase in the practice proportion of patients from refugee backgrounds (OR, 1.03; 95% CI, 1.02–1.04) and were higher for practices with refugee health training during the preceding year (OR, 6.16; 95% CI, 4.30–8.83) (Box 7); they also increased with the proportion of practices that had undertaken health assessments at baseline (OR, 1.06; 95% CI, 1.05–1.06) (Box 8).

Secondary outcomes

The proportion of patients from refugee backgrounds for whom refugee status was recorded in a free text field but not in a defined data field was lower following the intervention (382 of 7101 [5.4%] *v* pre-intervention, 406 of 6505 [6.2%]); after adjusting for

6 Conduct of health assessments for 14 633 new patients from refugee backgrounds: multivariable analysis (model 1)

Characteristic	Estimated proportion of patients (95% CI)	Odds ratio (95% CI)
Intervention status		
Pre-intervention	19.1% (18.6–19.5%)	1
Post-intervention	27.3% (26.7–27.9%)	1.88 (1.42–2.50)
Time point		
T0	22.8% (22.1–23.5%)	1
T1	14.0% (13.4–14.5%)	0.59 (0.51–0.67)
T2	25.6% (24.8–26.4%)	1.32 (0.97–1.81)
T3	33.7% (32.7–34.7%)	2.31 (1.64–13.3)
Practice size (FTE GPs)		
< 4	30.2% (29.8–30.7%)	1
≥ 4	4.0% (3.9–4.2%)	0.12 (0.09–0.16)
Intervention group		
Early	18.5% (17.8–19.2%)	1
Late	24.7% (24.3–25.1%)	4.84 (2.95–7.93)
Area		
1	37.8% (36.9–38.7%)	1
2	7.5% (7.0–8.0%)	0.09 (0.04–0.19)
3	20.8% (20.4–21.2%)	0.20 (0.15–0.25)

CI = confidence interval; FTE = full-time equivalent positions. The steps in the building of model 1 are reported in the Supporting Information, part E; estimates of differences in proportions, by variable, and by variable and area in Supporting Information, part F. ◆

7 Conduct of health assessments for 14 633 new patients from refugee backgrounds: multivariable analysis (model 2.1)

Characteristic	Estimated proportion of patients (95% CI)	Odds ratio (95% CI)
Intervention status		
Pre-intervention	19.1% (18.6–19.5%)	1
Post-intervention	27.2% (26.6–27.8%)	1.82 (1.34–2.48)
Time point		
T0	22.8% (22.1–23.4%)	1
T1	13.9% (13.4–14.5%)	0.59 (0.52–0.67)
T2	25.5% (24.7–26.3%)	1.36 (0.99–1.88)
T3	33.7% (32.7–34.7%)	2.39 (1.73–3.31)
Practice size (FTE GPs)		
< 4	30.2% (29.7–30.6%)	1
≥ 4	4.07% (3.92–4.22%)	0.25 (0.16–0.39)
Intervention group		
Early	18.4% (17.7–19.1%)	1
Late	24.7% (24.2–25.1%)	3.34 (2.07–5.38)
Refugee health training*		
No	22.0% (21.6–22.4%)	1
Yes	26.7% (25.8–27.7%)	6.16 (4.30–8.83)
Proportion of patients from refugee backgrounds at T0†	—	1.03 (1.02–1.04)

CI = confidence interval; FTE = full time equivalent positions. Estimates of differences in proportions by variable are included in the Supporting Information, part F. * The practice offered or supported staff access to education or training about refugee health in the past 12 months. † Continuous variable, range 0 to 100%; for an increase in the proportion of one percentage point, the relative odds increase by 1.03. ◆

clustering, the difference was not statistically significant (OR, 0.91; 95% CI, 0.60–1.38). The use of credentialed interpreting services during consultations with patients from refugee backgrounds increased from 0.25% (188 of 74 204) to 0.48% of visits (478 of 100 004; $P < 0.001$) (Supporting Information, part G).

A total of 66 clinicians completed both the pre- and post-intervention surveys (42% of the 157 clinicians employed at baseline). After the intervention, the reported degree of difficulty was slightly lower for referrals to social and settlement services and to oral and dental services, but not for identifying appropriate mental health services (Supporting Information, part G). The proportion of practices with a list of bulk-billing specialists increased from 35% (10 of 28 practices) before to 75% (21 of 28) after the intervention ($P = 0.013$), and of bilingual specialists and services from 31% (9 of 29 practices) to 62% (18 of 29) ($P = 0.035$).

Discussion

Our pragmatic intervention was associated with increased numbers of health assessments for patients from refugee backgrounds during their first year of settlement in Australia. The use of credentialed interpreter services by general practices also increased, and clinicians reported fewer difficulties with context-appropriate referrals to health and welfare services. Our finding that practices were 1.88 times as likely to provide documented health assessments after our intervention is consistent with the positive impact of outreach facilitation following other quality improvement interventions.[10,22]

The smaller impact of facilitation in larger practices was probably related to their more complex organisational structures that made it difficult for the intervention to influence whole-of-practice activities. Familiarity with refugee health care seemed important; the impact of the intervention was greater in practices with larger baseline proportions of patients from refugee backgrounds, prior training in refugee health care or more experience in providing health assessments for such patients.

Implications

Practitioners in the participating practices were interested in improving the quality of care provided to refugees, and outreach facilitation proved suitable for achieving this aim. Facilitators employed by local health authorities could support the integration of local health services with primary care. With appropriate host organisation support, a structured, low intensity outreach practice facilitation intervention could be of value for regional health services and primary health networks seeking to improve primary care for people from refugee backgrounds.

It is unclear whether a more intense intervention would improve outcomes in practices less familiar with refugee health care or whether a degree of prior interest or involvement is required to benefit from this type of intervention. Cost-effectiveness analyses of interventions such as OPTIMISE would help clarify the value of investments by health authorities in similar primary care refugee health care improvement initiatives.

8 Conduct of health assessments for 14 633 new patients from refugee backgrounds: multivariable analysis (model 2.2)

Characteristic	Estimated proportion of patients (95% CI)	Odds ratio (95% CI)
Intervention status		
Pre-intervention	19.1% (18.6–19.5%)	––
Post-intervention	27.3% (26.7–27.9%)	1.86 (1.38–2.51)
Time point		
T0	22.8% (22.1–23.5%)	––
T1	14.0% (13.4–14.5%)	0.59 (0.50–0.68)
T2	25.6% (24.8–26.4%)	1.34 (0.98–1.84)
T3	33.7% (32.7–34.7%)	2.35 (1.66–3.33)
Practice size (FTE GPs)		
< 4	26.8% (26.4–27.3%)	––
≥ 4	5.4% (5.2–5.7%)	0.37 (0.30–0.46)
Intervention group		
Early	18.5% (17.8–19.2%)	––
Late	24.7% (24.2–25.1%)	1.31 (0.99–1.72)
Proportion of practices that undertook baseline health assessments at T0*	—	1.06 (1.05–1.06)

CI = confidence interval; FTE = full time equivalent positions. * Continuous variable, range 0 to 100%. ◆

Limitations

We relied on electronic medical record data extracts for our measures of intervention impact. We had no information about the visa status of patients, and, as many electronic medical records did not include year of arrival, we used the date of first general practice visit as a proxy measure of time in Australia; outcome rates are consequently conservative estimates of change in practice. The denominator for our estimates would have been smaller had we restricted our analysis to recent arrivals, but the significant effects we identified are nevertheless important.

We assessed appropriate health care for people from refugee backgrounds, but not patient outcomes. We could not assess the influence of secular trends with our study design, and our single group comparison over time for assessing ease of identifying appropriate referral services by GPs prevented our determining whether this change could be attributed to the intervention. Our intervention was developed iteratively to allow its adaptation to local context,[10,23] and this tailoring may have contributed to differences in outcomes between the three included areas.

Conclusions

Despite minor variations between the three areas in practice eligibility and facilitation delivery, our outreach facilitation intervention was associated with a positive impact on key components of quality primary care provided to people from refugee backgrounds. Our findings support the value of outreach facilitation strategies for linking local refugee health services and Australian general practices.

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Data sharing: De-identified versions of the data underlying the findings reported in this article, the statistical analysis plan, and the relevant statistical code will be available on request from six to 36 months after publication of this article (request procedure in the data management plan: https://bridges.monash.edu/articles/data_management_plan/OPTIMISE_Data_Management_Plan/13359068). The data are not publicly available, as they include potentially re-identifiable participant information.

Competing interests: Sue Casey was formerly general manager, Sector Development and Partnerships, Victorian Foundation for Survivors of Torture; Mitchell Smith is director of the New South Wales Refugee Health Service; Grant Russell and Jenny Advocat have worked on behalf of Monash University with the North Western Melbourne Primary Health Network; Virginia Lewis has worked on several contracts on behalf of La Trobe for North Western Melbourne Primary Health Network and cohealth in the past three years. Grant Russell is a board member of enliven; Virginia Lewis has a research chair at La Trobe University co-funded by cohealth; I-Hao Cheng was formerly a program manager for enliven and a policy advisor for the Victorian Department of Health and Human Services. ■

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Supporting Information

Additional Supporting Information is included with the online version of this article.