Supplementary Appendix S1

Characteristics of Target-D practices and GPs

Eligibility criteria for practices included: seeing more than 50 adults aged 18 – 65 per day; agreeing to research assistants recruiting in the waiting room; a private space available for Target-D use; majority of GPs willing to collaborate with the Target-D team.

The 14 general practices that participated in Target-D were located in a mix of socio-economic areas (indicated by scores ranging from 2 to 10 on the Index of Relative Socio-economic Advantage and Disadvantage[1]) and operated different billing models (six of the fourteen operated an entirely 'bulk billing' model, meaning they accepted the fee paid under Australia's national health insurance scheme as full payment and did not charge out of pocket costs to any patients). Nine practices provided information about their clinical workforce. Eight of these nine practices reported having more than 10 individual general practitioners (GPs), whereas less than one third of GPs in Australia work in practices of this size.[2] All nine practices reported having three or more individual nurses (compared to only half of GPs nationally), and six reported a co-located psychologist (compared to 60 percent of Australian GPs overall).[2]

Within the 14 participating practices, 80 GPs consented to take part in the trial and 56 returned a survey about their professional background, interests, and approaches. Tables S1 and S2 present demographic and professional characteristics of a subset of these (n = 56) who returned their Target-D survey. Where possible, these characteristics are compared to national statistics collected through the BEACH (Bettering the Evaluation and Care of Health) program.[2]

The average age of these GPs was 48.6 years (SD=11.3), 32 (57%) were female, and they reported on average 16.0 years (SD=11.5) spent in general practice in Australia. In comparison, national statistics indicate that Australian GPs are 52 years old on average and 45% are female.[2] Thirty-five percent of GPs estimated that more than 30% of adult patients seen in their practice in the past 12 months had depression and 36% reported that they spent 6 or more hours on mental health training in the past year.

A total of 1868 trial participants were recruited from the 14 general practices, ranging between 21 and 325 participants per practice. Table S3 shows that the number of participants from each practice was balanced between the two trial arms, overall and within prognostic groups.

Table S1. Characteristics of Target-D GPs compared to nationally representative sample

	Target-D (n = 56)		BEACH (n = 965)	
	n	**(%)**	**n**	**(%)**
Age in years[1]				
30-34	6	(11)	80	(8)
35-44	14	(25)	210	(22)
45-54	20	(36)	236	(25)
55-75	15	(27)	435	(45)
Gender				
Male	24	(43)	532	(55)
Female	32	(57)	433	(45)
Country of graduation				
Australia	32	(57)	584	(61)
Overseas	24	(43)	377	(39)
Fellow of RACGP or equivalent	43	(77)	599	(63)
Percentage of consultations in English				
61% - 70%	1	(2)	-	
71% - 80%	3	(5)	-	
81% - 90%	7	(13)	-	
91% - 100%	45	(80)	-	

n = Count; SD = Standard deviation; RACGP = Royal Australian College of General Practitioners.
[1] n=55 due to missing age

Table S2. GPs' mental health training and usual approach to care

	n	(%)[1]
Time spent on mental health skills training in past year (n=55)		
<1 hour	8	(15)
1-5 hours	28	(51)
6-10 hours	13	(24)
11-20 hours	4	(7)
>20 hours	2	(4)
Proportion of adult patients seen in the past 12 months with depression (n=52)		
0% - 10%	14	(27)
11% - 20%	10	(19)
21% - 30%	10	(19)
31% - 40%	7	(14)
41% - 50%	4	(8)
51% - 60%	2	(4)
61% - 70%	1	(2)
71% - 80%	2	(4)
81% - 90%	2	(4)
91% - 100%	0	(0)
First follow-up appointment for patients with mild to moderate depression (n=54)		
The next day	0	(0)
Within a week	14	(26)
Within a fortnight	33	(61)
Within a month	6	(11)
Longer than 1 month	1	(2)
At least one after care arrangement (n=56)[2]	52	(93)
Share with GPs in practice	21	(38)
Deputising locum service	37	(66)
Collaboration with local hospital	1	(2)
Provide own	6	(11)
Share with other practices	3	(5)
Other	4	(7)

n= count

[1] Total number of GPs = 56. Denominators vary owing to missing data

[2] After hours care arrangements are not mutually exclusive; GPs could respond to more than one category

Table S3. Number of participants according to trial arm, in total and stratified by prognostic group (N=1868)

	All participants (n=1868)		Prognostic group					
			Minimal / mild (n=1357)		Moderate (n=288)		Severe (n=223)	
General practice	Intervention (n=933) n (%)	Control (n=935) n (%)	Intervention (n=679) n (%)	Control (n=678) n (%)	Intervention (n=143) n (%)	Control (n=145) n (%)	Intervention (n=111) n (%)	Control (n=112) n (%)
Practice 1	12 (1.3)	9 (1.0)	6 (0.9)	6 (0.9)	2 (1.4)	2 (1.4)	4 (3.6)	1 (0.9)
Practice 2	61 (6.5)	60 (6.4)	41 (6.0)	41 (6.0)	7 (4.9)	8 (5.5)	13 (11.7)	11 (9.8)
Practice 3	14 (1.5)	16 (1.7)	11 (1.6)	11 (1.6)	2 (1.4)	3 (2.1)	1 (0.9)	2 (1.8)
Practice 4	37 (4.0)	39 (4.2)	26 (3.8)	29 (4.3)	8 (5.6)	6 (4.1)	3 (2.7)	4 (3.6)
Practice 5	119 (12.8)	120 (12.8)	85 (12.5)	84 (12.4)	17 (11.9)	18 (12.4)	17 (15.3)	18 (16.1)
Practice 6	22 (2.4)	17 (1.8)	12 (1.8)	9 (1.3)	4 (2.8)	4 (2.8)	6 (5.4)	4 (3.6)
Practice 7	78 (8.4)	79 (8.4)	49 (7.2)	49 (7.2)	15 (10.5)	15 (10.3)	14 (12.6)	15 (13.4)
Practice 8	17 (1.8)	19 (2.0)	16 (2.4)	16 (2.4)	1 (0.7)	3 (2.1)	0 (0)	0(0)
Practice 9	95 (10.2)	95 (10.2)	75 (11.0)	75 (11.1)	14 (9.8)	12 (8.3)	6 (5.4)	8 (7.1)
Practice 10	64 (6.9)	61 (6.5)	51 (7.5)	50 (7.4)	11 (7.7)	8 (5.5)	2 (1.8)	3 (2.7)
Practice 11	77 (8.3)	80 (8.6)	53 (7.8)	54 (8.0)	12 (8.4)	12 (8.3)	12 (10.8)	14 (12.5)
Practice 12	162 (17.4)	163 (17.4)	121 (17.8)	121 (17.8)	24 (16.8)	24 (16.6)	17 (15.3)	18 (16.1)
Practice 13	146 (15.6)	147 (15.7)	113 (16.6)	113 (16.7)	22 (15.4)	24 (16.6)	11 (9.9)	10 (8.9)
Practice 14	29 (3.1)	30 (3.2)	20 (2.9)	20 (2.9)	4 (2.8)	6 (4.1)	5 (4.5)	4 (3.6)

n = Count

References

1. Pink B. Socio-Economic Indexes for Areas (SEIFA), 2011. Canberra: Australian Bureau of Statistics 2013.
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Supplementary Appendix S2

Detailed description of Target-D interventions

All participants completed a brief eligibility screening survey on an iPad in their GP waiting room and were not required to disclose any information to the research assistant other than their willingness to complete this survey. The eligibility survey was integrated with the Target-D platform, consent form, randomisation schedule, and baseline and follow-up measures in a purpose-built website, accessible on any internet-enabled device. As part of the consent process, eligible patients were asked to enter an email address; if they were unable or unwilling to complete the baseline assessment and clinical prediction tool (CPT) using the iPad provided in the waiting room, they were emailed a link to do so on their own device at a time that was convenient to them. Research assistants followed up with non-responders via phone, text, and/or email.

Intervention arm

After completing the clinical prediction tool, participants randomly allocated to the intervention arm received:

- feedback on their responses;
- an opportunity to set mental health priorities and reflect on the importance of addressing these priorities and their confidence in doing so; and
- a management option matched to their predicted depressive symptom severity.

Together, these elements comprise the Target-D platform. The presentation of the platform was informed by the principles of motivational interviewing,[1] a psychologically-driven goal modelling approach,[2] and developed with input from end-users.[3] The CPT comprises the PHQ-9 plus eight additional items assessing sex, anxiety, general health, living situation, and financial security. These additional items, as well as providing some predictive power over and above that provided by the PHQ-9, are included in recognition of the broader determinants of poor mental health. By taking a holistic approach to mental health rather than considering depressive symptoms alone, the intervention aims allow people to set priorities and engage with care options that are relevant to their needs. Recommended management options were displayed on screen immediately after completing the CPT, and re-iterated in follow-up contact from the Target-D team (as described below). All participants also received an automated email encouraging them to speak with their GP regarding any concerns they may have about their mental health, and providing contact details for community-based services (e.g., crisis support lines). Selected management options had randomised controlled trial evidence of effectiveness for the appropriate level of depressive symptom severity, as described below; management and planned follow-up procedures for each prognostic group are described below (see also Figure S1).

Minimal/mild prognostic group

Participants in this group were recommended to use the myCompass program, an online, CBT-based, self-help resource comprising information, treatment modules, homework activities, and mood tracking functions.[4] At the time of this study, information and mood tracking functions could be accessed on any internet-enabled device, although the treatment modules were computer-based. Target-D participants were free to use myCompass as much

or as little as they liked. They received an initial welcome email from the Target-D team providing the link to myCompass with a brief outline of what to expect on first log in, and a follow-up telephone call from a research assistant to discuss their treatment recommendation and troubleshoot if needed. Up to four attempts at this call were made. Finally, participants in this group were sent an email one week after completing the CPT (or after all call attempts were exhausted) reminding them of the benefits of myCompass and encouraging them to register for the program if they had not already. Adherence was defined as completion of at least one module, as indicated by website analytics provided by the Black Dog Institute (who manage the myCompass program).

Moderate prognostic group

Participants in this group received a recommendation to use the This Way Up iCBT program (specifically, the Worry and Sadness course); a guided, linear program comprising six online lessons, homework activities, and symptom monitoring.[5] Participants were free to complete as many or as few lessons as they wished, and to access the course when, where, and using the device that was convenient to them. They received an initial email from the study team with information about the program and advising that they would receive a separate email from This Way Up with a unique link providing them with free access to the course for 90 days.

Research assistants then contacted participants weekly via phone or email either until they completed Lesson Two or until four weeks after they were emailed their unique link, whichever came first. One phone call attempt was made at each scheduled contact, with a personalised email sent to non-responders (tailored to their progress through the program). When participants reported a worsening of depressive symptoms within This Way Up (≥ 5 points on the PHQ-9 from their previous assessment), an automated email was generated to both the Target-D team and the participant encouraging the participant to access further support. Adherence was defined as completion of all 6 lessons in the Worry and Sadness course, as indicated by website analytics provided by the This Way Up team at the University of New South Wales.

Severe prognostic group

Participants in this group were offered collaborative care,[6-9] described on the Target-D platform as an opportunity to work together with a specially trained nurse and their GP to identify options to improve their emotional health and wellbeing. Participants were offered up to eight structured appointments with the nurse over 12 weeks. The intervention aimed to improve outcomes by supporting participants' engagement in and ownership over their own health care by applying the principles of motivational interviewing.[1]

A research assistant contacted participants allocated to this group via phone to discuss their treatment recommendation and schedule their first appointment with a Target-D nurse. Four call attempts were made, after which the participant was emailed a brief introduction to the collaborative care intervention and invited to get in touch with the study team to schedule an appointment. Participants were reminded of subsequent appointments via SMS from their Target-D nurse, and could contact their nurse directly via SMS or phone to reschedule as required.

The collaborative care intervention was delivered by five female registered nurses with between 13 and 21 years of experience in a range of fields including primary, emergency, and

intensive care nursing. All nurses completed a 2-day training course on the background to Target-D and trial protocol (day 1; delivered by project manager) and an introduction to motivational interviewing techniques (day 2; delivered by registered psychologist). Nurses were assisted to put these techniques into practice through detailed procedure manuals and structured appointment templates which stepped through the process of developing a plan to improve participants' mental health. The template for appointment 1 was pre-populated with the priority areas the participant identified in the Target-D platform. This provided structure to their first interaction with the Target-D nurse and established a focus for the collaborative care intervention across the eight appointments, as follows:

- Appointment 1: reflect on current situation, set goals relevant to each priority area and identify actions they could take to meet those goals.
- Appointments 2 – 7: review progress, identify barriers to taking action and how these may be overcome
- Appointment 8: review progress and identify additional supports required or actions to take after Target-D.

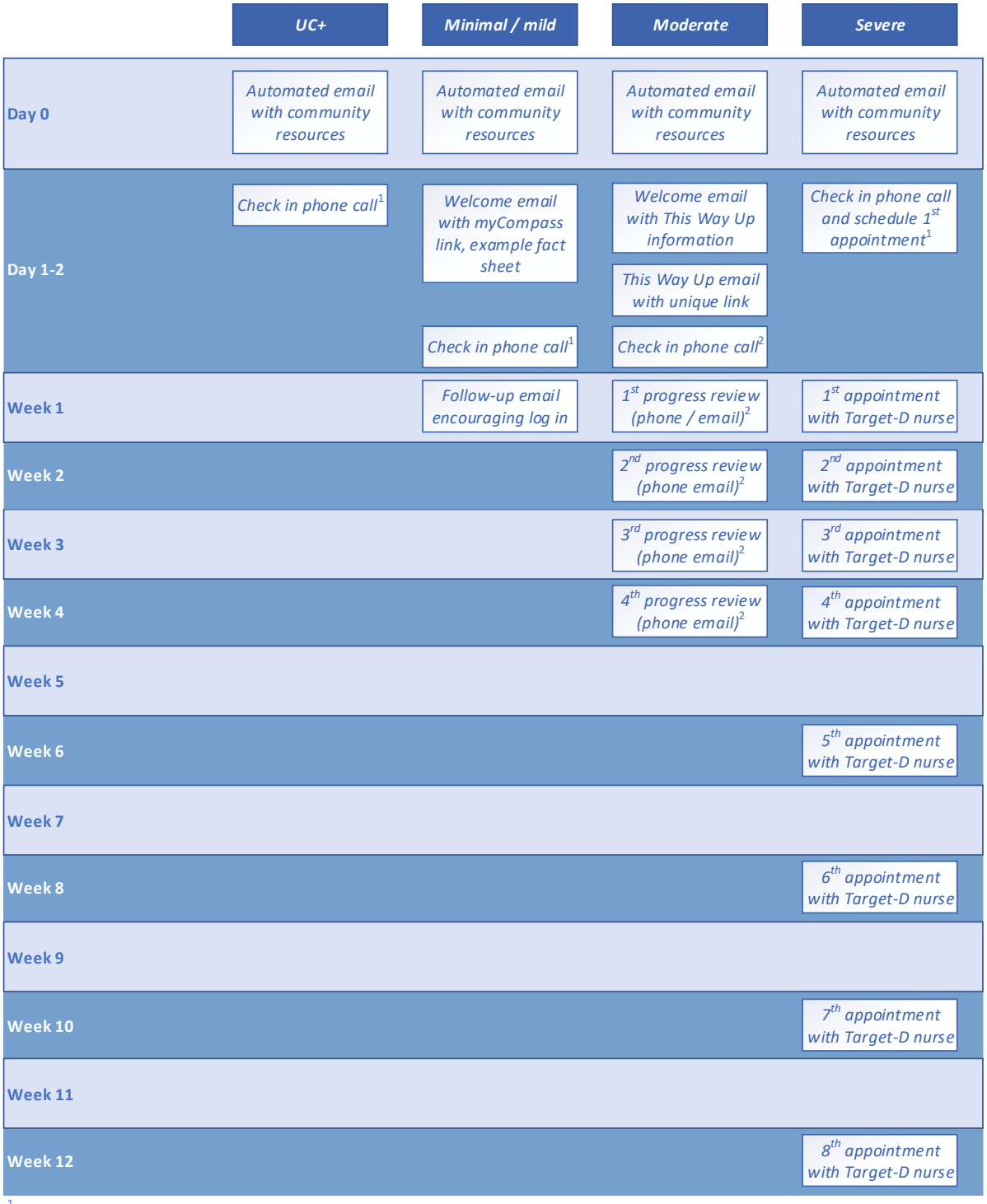
In order to facilitate rapport building, participants were encouraged to attend appointments in person at their general practice (particularly the first appointment) but this was not a requirement and they were free to meet with their nurse either over the phone or in person, according to individual preference. After each appointment, the Target-D nurse provided the participant with a copy of their plan (via email or in hard copy) to remind and support them with taking their intended actions that week. The nurse also provided a copy of the plan to the participant's GP and other professionals involved in the participant's mental health care. In supporting participants to develop their plan, Target-D nurses spent time outside the eight structured appointments to research appropriate services both within and external to the health system, discuss management options with GPs and other professionals, and draft referrals for GPs. Target-D nurses were also able to contact both the project manager and registered psychologist for support and guidance as required; no additional strategies were employed to encourage fidelity to intervention delivery.

Adherence was defined as completion of eight appointments, as indicated by appointment logs completed by the nurses delivering the intervention. Nurse fidelity to the collaborative care model was assessed through review of written plans and appointment logs, and of audio recordings conducted for a subset of appointments. These data are currently being analysed and will be reported separately

Control arm

After completing the CPT, participants randomly allocated to the control arm did not receive symptom feedback, priority setting, or prognosis-matched treatment recommendations. Instead, they received usual care plus Target-D attention control (UC+) in the form of a telephone call from a trained research assistant to reiterate the importance of involvement in the trial, address questions and concerns as required, and administer a brief structured interview about research participation. Up to four attempts at contacting participants via phone were made, after which an email was sent encouraging the participant to contact the study team. All participants in this arm also received the automated email sent to the

intervention arm providing information about community-based services and encouragement to speak to their GP about mental health concerns. They were free to continue accessing health services as usual throughout the duration of the trial.



[1] Up to four attempts at contacting participant via phone, followed by email
[2] One attempt at contacting participant via phone, followed by email. Where participant indicated preference for email contact, no phone call made.

Figure S1. Planned intervention and follow-up schedule

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Supplementary Appendix S3

Biased coined design with an imbalance intolerance of three

Randomisation was stratified by general practice and prognostic group, a total of 42 strata (14 practices and three prognostic groups). Random allocation occurred sequentially within each stratum using a biased-coin approach [1] described below.

Let D_k denote the difference in the total number of individuals assigned to the intervention and control arms for stratum *k*, where $k = 1, 2, 3, \ldots 42$. Given a new individual falls in stratum *k*, the probability that this new individual is assigned to intervention or control arm will depend on what treatments have already been assigned in the study, as shown in the table below:

	Probability of assignment to intervention arm	Probability of assignment to control arm
$D_k = 3$	0	1
$D_k = [2, 1, 0, -1, -2]$	0.5	0.5
$D_k = -3$	1	0

Thus, each new eligible individual will be randomly assigned to either intervention or control arm with equal probability when the difference in the number of individuals allocated to the two trial arms within stratum *k* is fewer than three. When the difference in the total number of participants between the two trial arms within stratum *k* is three, the new individual will then be assigned to the arm with the fewest participants. Within each stratum, imbalance between trial arms at any time in the trial will be no more than three.

References

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Supplementary Appendix S4

Results supplement

Recruitment and baseline data collection occurred between 4 April 2016 and 22 December 2017. Follow-up data collection continued until 17 February 2019 and closed after completion of all outcome assessments/reminders.

Summary statistics of the primary and secondary outcomes across the three time points and prognostic group are shown in Table S4.

Table S4. Summary statistics of outcomes at each time point according to trial arm, in total and stratified by prognostic group

	All participants						Minimal / mild						Moderate						Severe					
	Intervention			Control			Intervention			Control			Intervention			Control			Intervention			Control		
	n	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**	**n**	**Mean**	**(SD)**
Depressive symptom severity (PHQ-9)																								
Baseline	933	9.21	(5.76)	935	9.26	(5.67)	679	6.43	(3.38)	678	6.57	(3.40)	143	14.23	(2.30)	145	13.86	(2.40)	111	19.70	(3.54)	112	19.58	(3.60)
3 months	594	8.26	(6.02)	668	9.16	(6.51)	439	6.59	(5.04)	483	7.29	(5.60)	80	11.64	(5.51)	112	12.69	(5.62)	75	14.40	(6.39)	73	16.10	(6.49)
12 months	563	7.77	(5.85)	602	8.44	(6.19)	421	6.33	(5.01)	441	6.82	(5.26)	74	10.53	(5.68)	103	12.10	(6.14)	68	13.69	(6.11)	58	14.28	(6.64)
Anxiety symptom severity (GAD-7)																								
Baseline	856	8.60	(5.25)	853	8.69	(5.13)	613	6.68	(4.21)	613	7.03	(4.18)	139	11.62	(4.09)	135	11.42	(4.54)	104	15.88	(3.69)	105	14.83	(4.73)
3 months	462	7.27	(5.12)	560	7.61	(5.27)	332	6.25	(4.70)	404	6.30	(4.64)	64	8.78	(4.90)	94	10.34	(5.25)	66	10.91	(5.43)	62	11.97	(5.33)
12 months	339	6.78	(5.19)	424	7.02	(4.89)	245	5.76	(4.69)	314	6.07	(4.54)	49	8.39	(5.10)	66	9.12	(4.72)	45	10.60	(5.75)	44	10.68	(4.91)
Mental health self-efficacy (MHSES)																								
Baseline	857	38.10	(12.23)	851	37.42	(12.10)	614	42.22	(10.48)	611	41.41	(10.54)	139	30.16	(9.30)	135	30.48	(8.98)	104	24.39	(9.81)	105	23.11	(8.81)
3 months	461	41.61	(11.09)	559	40.34	(11.62)	332	44.49	(9.64)	404	43.19	(10.85)	63	37.49	(9.75)	94	34.98	(9.27)	66	31.05	(11.58)	61	29.74	(10.87)
12 months	337	42.88	(10.91)	422	42.05	(11.34)	243	45.31	(9.52)	313	44.42	(10.23)	49	39.45	(10.69)	65	37.29	(10.90)	45	33.44	(12.20)	44	32.30	(12.25)
Quality of life (AQoL-8D)																								
Baseline	841	0.57	(0.20)	843	0.57	(0.20)	602	0.65	(0.17)	609	0.64	(0.17)	138	0.42	(0.10)	132	0.41	(0.11)	101	0.32	(0.10)	102	0.32	(0.10)
3 months	456	0.60	(0.20)	556	0.59	(0.20)	327	0.66	(0.18)	402	0.66	(0.18)	64	0.49	(0.16)	94	0.44	(0.15)	65	0.39	(0.16)	60	0.37	(0.13)
12 months	334	0.62	(0.20)	416	0.60	(0.21)	243	0.68	(0.18)	307	0.66	(0.19)	47	0.52	(0.17)	65	0.49	(0.16)	44	0.40	(0.17)	44	0.38	(0.17)

n = Total number of participants with observed outcome data (count); Mean = Sample mean; SD = Standard deviation

Sensitivity analysis to assess the robustness of the missing data assumption

The mixed effects model for depressive symptoms (measured using the PHQ-9) assumed that participants that had a missing response at three months were missing at random (MAR), conditional on the covariates included in the model. Two sensitivity analyses were conducted to assess the robustness of the missing data assumption for depressive symptoms.

Sensitivity analysis 1: Adjusting for baseline variables associated with non-response

Using the same mixed effects model as for the main intention to treat (ITT) analysis we included additional variables measured at baseline associated with non-response at three- and 12-months follow-up to make the MAR assumption more plausible. These variables were identified in an ancillary analysis where the baseline participant characteristics were compared between responders (trial participants with outcome data at both follow-up periods) and non-responders using descriptive statistics by each trial arm. The factors included as fixed effects into the model were: age, sex, highest level of education, current employment status, holds a health care card, long term illness, self-rated health, live alone, manage on available income, seen a psychiatrist or counsellor in the past 12 months and current use of antidepressants. These results were reported in Table 2. Overall, the estimated mean differences for depressive symptoms at three and 12 months adjusted for variables correlated with non-response did not change the interpretation of the results.

Sensitivity analysis 2: Pattern-mixture model

We used pattern-mixture modelling to assess the robustness of the MAR assumption for the primary outcome under a range of missing not-at-random scenarios. The methods and results are described below.

Method

A sensitivity analysis using pattern-mixture model was undertaken to assess for departures from MAR for PHQ-9 score at three months. This was done by adding the quantity $\Delta = p_1\delta_1 + p_0\delta_0$ to the estimated difference in means between the trial arms, where $p_1 = 65\%$ and $p_0 = 72\%$ represent the proportion of participants who provided a response at three months in the intervention and control arms, respectively, and δ_1 and δ_0 represent the difference in mean depressive symptoms score for participants with missing responses (unobserved) and those that provided a response (observed). The values of δ_1 and δ_0 were varied between -5 and 5 (in increments of 1) in the same way for both arms, varied δ_1 in the intervention arm only and fixed δ_0 to zero, and varied δ_0 in the control arm only and fixed δ_1 to zero.

Results

Figure S2 shows how the estimated intervention effect for all participants varied for the different assumptions about the departures from the MAR assumption. The departures were slightly greater in the intervention arm because a higher proportion of participants had missing outcomes at three months compared to the control arm (35% vs 28%).

The findings for the primary outcome presented in Table 2 showed that under the MAR assumption there was evidence to support a small intervention effect for PHQ-9 depressive symptoms at three months, favouring the intervention arm. Figure S2 shows that for the conclusions to change there would need to be at a least two-point difference in the mean PHQ-9 depressive symptom scores between the participants who had missing responses and

those observed in both arms. Such a difference in means would be unlikely given that the standard deviation for depressive symptoms at baseline was 5.7.

Conclusions

The sensitivity analysis that investigated the impact of departures from the MAR assumption showed that the findings of the primary analysis were robust to different assumptions about the missing data mechanism.

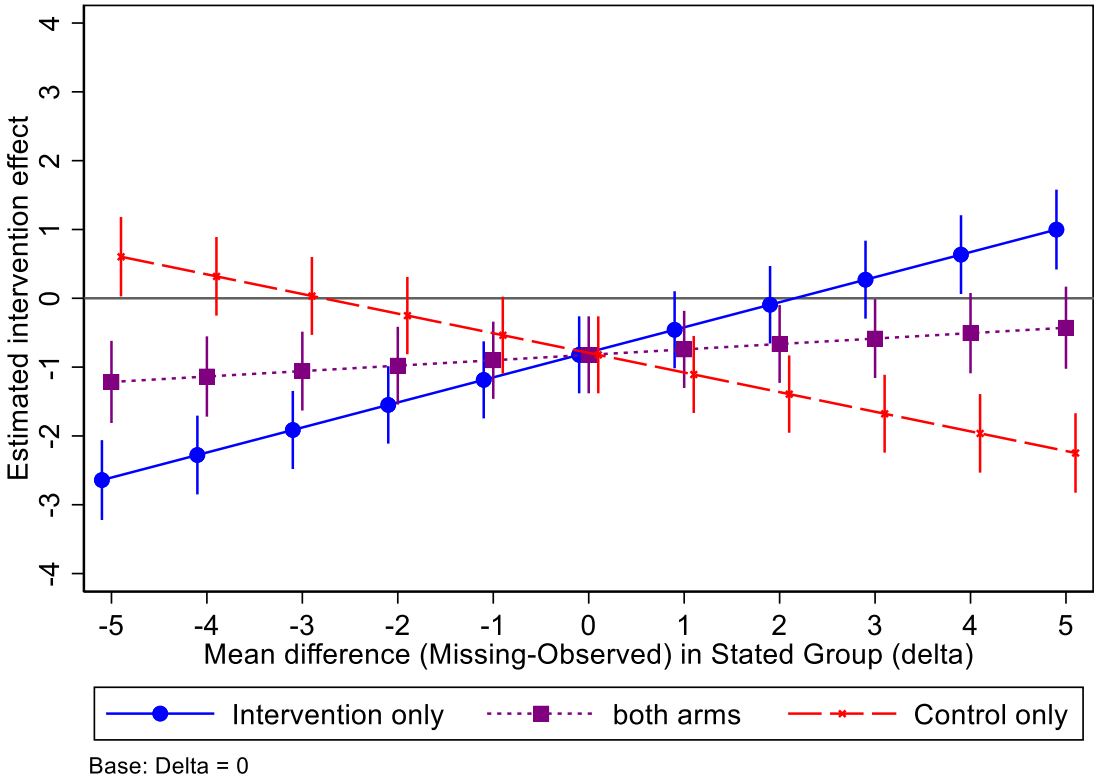

Figure S2. Sensitivity analysis for departures from MAR for PHQ-9 depressive symptoms at three months

Note: N=1868; 1262 observed and 606 unobserved outcomes. Estimated intervention effect (adjusted for baseline measure of PHQ-9, general practice and depressive symptom severity group) with respective 95% confidence interval plotted on the y-axis for selected parameter values of the difference between missing and observed mean score for PHQ-9 score at 3 months (x-axis) in both arms, intervention and control arms only. A grey horizontal line is plotted at zero on the y-axis.

Target-D intervention as delivered

Table S5. Time between randomisation and initiation of intervention

Group	Activity[1]	Planned time to intervention (days)[2]	n who completed activity	Actual time to intervention (days)[3]	
				Mean (SD)	Median (Range)
Minimal / mild (n = 679)	Welcome email	1-2	676	2.13 (3.84)	2 (0 – 82)
	Check in phone call	1-2	518	15.32 (17.84)	9 (1 – 166)
	Follow-up email	7	656	23.68 (12.71)	21 (0 – 96)
	myCompass registration	n/a	123	14.70 (18.58)	9 (0 – 92)
Moderate (n = 143)	Welcome email	0-1	128	3.34 (4.53)	2 (0 – 31)
	This Way Up email	0-1	143	2.69 (3.55)	2 (0 – 28)
	Check in phone call	2	140	9.94 (10.19)	7 (1 – 73)
	Week 1 progress review	7	136	18.11 (10.76)	15 (6 – 80)
	Week 2 progress review	14	133	27.61 (12.60)	23 (13 – 87)
	Week 3 progress review	21	124	36.54 (14.32)	32 (17 – 97)
	Week 4 progress review	28	116	45.79 (17.57)	39 (17 – 114)
	This Way Up registration	n/a	70	16.01 (16.05)	11 (0 – 59)
Severe (n = 111)	Check in phone call	1-2	75	10.47 (13.49)	6 (0 – 91)
	Attended first appointment[4]	7	64	19.44 (15.34)	16 (2 – 96)
UC+ (n = 935)	Check in phone call	1-2	759	14.78 (16.24)	10 (0 – 114)

n = Number of participants; SD = Standard deviation; Range = (minimum – maximum); n/a = Not applicable

[1] Check in phone calls and progress reviews were considered complete when either a) phone contact was made or b) an email was sent after all attempts at contacting the participant via phone were unsuccessful.

[2] 'Planned time to intervention' is the number of days after randomisation that the follow up activity was intended to occur.

[3] 'Actual time to intervention' shows the number of participants for whom each activity was completed, and the days after randomisation that this occurred.

[4] The 64 participants who took part in the collaborative care intervention were assigned to a Target-D nurse based on geographic location, preferred appointment times, and staff availability. The majority of participants worked with one nurse only, however due to staff turnover four participants were handed over to a second nurse to complete the intervention. The median number of participants seen by the six Target-D nurses during their involvement in the trial was 14 (range between 1 to 31).

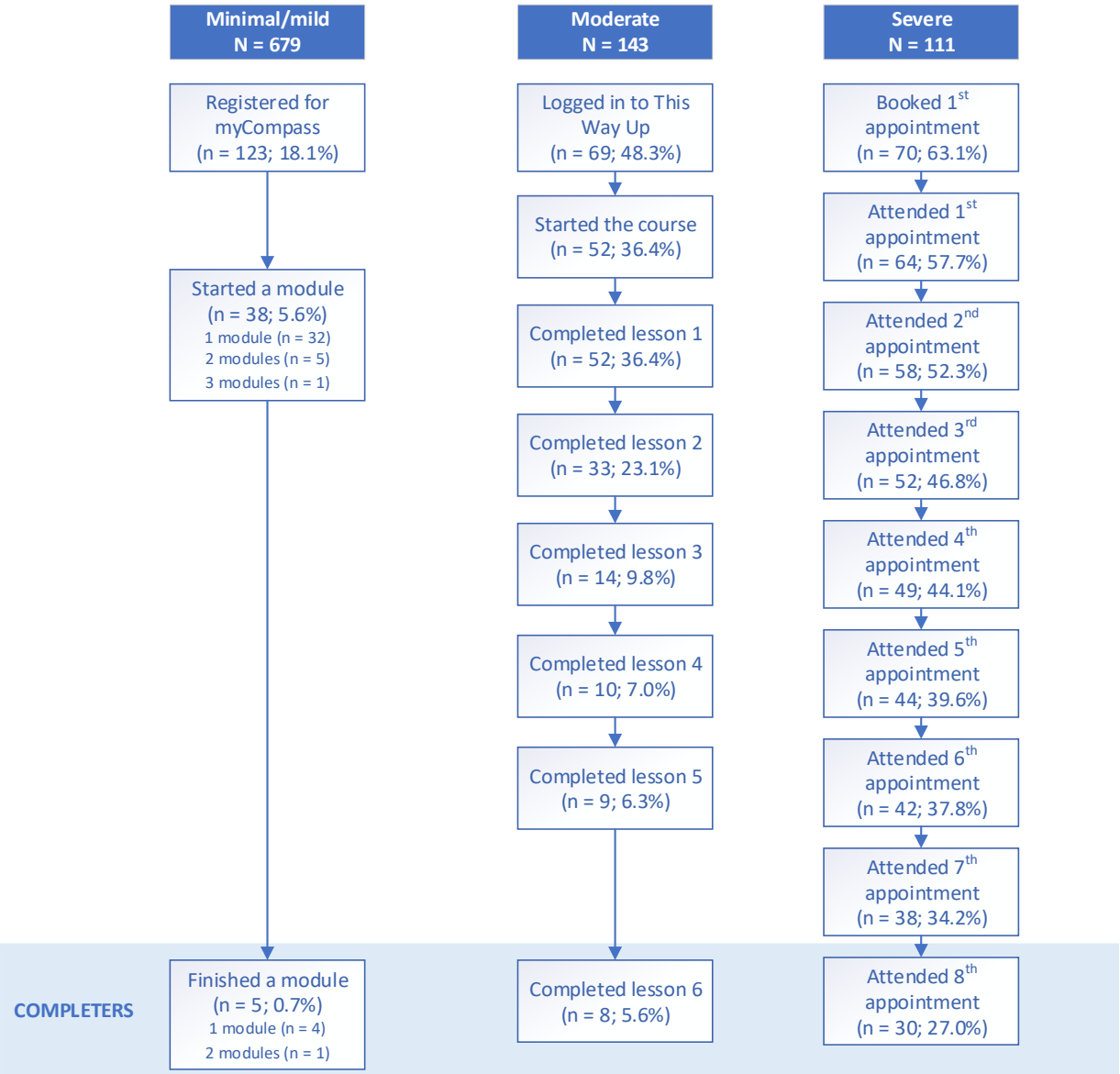

Figure S3. Details of intervention completion for each prognostic group

Note: All percentages are calculated as a proportion of the total number of participants allocated to each prognostic group.

Harms

Across all time-points, 96 participants reported 112 instances of suicidal ideation, none were identified as related to the trial nor resulted in trial withdrawal. Similar percentages of participants reported suicidal ideation between intervention and control arms (4.6% vs 5.7%).

Supplementary Appendix S5

Access to mental health care in Australia

Since 1984 Australians have had access to Medicare, a universal health care scheme which provides all of the cost of public hospital services and some of the costs of other health services, including those provided by general practitioners (GPs) and medical specialists.[1] It is also possible for people to access GPs and medical specialist care with no out of pocket costs, if the practitioner chooses to bill Medicare directly (bulkbill) and receive a lower fee for seeing that patient. Around 80% of services provided by GPs are bulkbilled.[2]

Since the early 2000s, people in Australia have been able to access fully or partially government-subsidised psychological therapy through GP referral. *Access To Allied Health Psychological Services* (ATAPS; 2001–2016) had a particular focus on reducing barriers to care for people from disadvantaged groups (including those on low incomes), and facilitated access to up to 18 treatment sessions per year.[3] In 2016, the ATAPS program was replaced by allocation of flexible funding to new meso-level mental health commissioning organisations known as Primary Health Networks (PHNs). These organisations are expected to plan and commission services to address service gaps, and in particular, to complement fee-for-service options for population groups who are unable to access them.[4]

Complementing ATAPS and its successor, the *Better Access to Psychiatrists, Psychologists and General Practitioners through the Medicare Benefits Schedule* (Better Access) initiative was introduced in 2006. It enables GPs to refer people they assess as having a mental disorder for a maximum of 10 sessions of psychological therapy per calendar year. These sessions are subject to a government-rebate but unlike ATAPS, there is no cap on the amount that mental health professionals can charge the consumer co-payments.

In this context, uptake of psychological services has been considerable and continues to increase; in 2018–19 alone, 2.7 million Australians accessed 12.1 million government-subsidised mental health services, the vast majority (80%) of which were delivered by GPs, psychologists, and other allied health professionals.[5] In contrast, in 2008–09, 1.2 million Australians accessed 7 million government-subsidised services, 30% of which were delivered by psychiatrists.

In addition to psychological therapy, Australians also have access to government-subsidised pharmacological treatment through the Pharmaceutical Benefits Scheme. In 2018-19, 17 percent of the population (4.3 million people) received a mental health-related prescription,[6] with an average of nine prescriptions per person. The vast majority (86%) of these prescriptions are written by GPs, and are most commonly for antidepressants (71%).

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