



# Depression after cardiac hospitalisation



## *The Identifying Depression as a Comorbid Condition (IDACC) study*

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### BACKGROUND

The Identifying Depression as a Comorbid Condition (IDACC) study aimed to identify depressive symptoms in hospitalised cardiac patients and support management of depression in general practice.

### OBJECTIVE

This post hoc analysis of the IDACC trial examines the effectiveness and practicality of different forms of communication between hospital psychiatric services and general practitioners.

### METHODS

We randomised 669 cardiac inpatients with depressive symptoms, identified with the Center for Epidemiological Studies Depression Scale (CES-D), to an intervention or usual care control group. Individual depression scores and depression management guidelines were sent to GPs of all intervention patients. Where possible, psychiatric advice was provided to the GP either by multidisciplinary enhanced primary care case conference or one-to-one telephone advice.

### RESULTS

Multidisciplinary case conferences were implemented for only 24% of intervention patients. General practitioners received individual telephone advice in 40% of cases, and 36% received written information only. The psychiatrist telephone advice resulted in a significant reduction in the proportion of patients with moderate to severe depression 12 months after cardiac hospitalisation (19% vs. 35%).

### DISCUSSION

Screening, combined with psychiatrist telephone advice to GPs, was simple to organise and effective in reducing depression severity after cardiac admission.

**D**epression occurs concurrently with cardiac disease, and is an independent risk factor for adverse cardiac outcomes.<sup>1</sup> However most cardiac patients with depression remain inadequately treated.<sup>2</sup> Treatment of depression in primary care can be improved by patient centred consultations between general practitioners and psychiatrists.<sup>3,4</sup> The Identifying Depression as a Comorbid Condition (IDACC) study was a prospective cohort study with a nested randomised controlled trial<sup>5,6</sup> that monitored depression in patients admitted to hospital for cardiac conditions, followed them for 12 months, and tested a GP focussed intervention designed to improve the detection and management of depression.

This intervention included offering psychiatric advice to the GP through an enhanced primary care (EPC) multidisciplinary case conference, reimbursable under the Medicare Benefits Schedule. The other two components of the EPC package, health assessments and care planning, had a rapid uptake, but case conferencing has not. General practitioners feel the EPC items are 'more trouble than they are worth'.<sup>7</sup> Barriers to uptake identified by GPs include compliance, work practice, and cultural barriers between general

practice and hospitals.<sup>8</sup> Enhanced primary care has been a one-sided development, with many state funded services finding it difficult to participate because of time and staffing demands.<sup>9</sup>

Analysis of the IDACC trial on the basis of 'intention to treat' has demonstrated benefit from the intervention.<sup>10</sup> Despite substantial support to implement multidisciplinary case conferences in the IDACC trial, it became evident early that they were difficult to implement, and two other forms of the intervention evolved: a telephone call to the GP from the study psychiatrist (GS), or written information alone. This article reports a post hoc analysis of the three forms of intervention against usual care.

## Methods

In four major public hospitals in Adelaide (South Australia) during the period August 2000 to June 2002, patients were recruited

after the first day of an admission for myocardial infarction, unstable angina, arrhythmia, heart failure, coronary artery bypass graft surgery or angioplasty (Figure 1).<sup>5</sup> Those who consented were given a set of questionnaires including the Center for Epidemiological Studies Depression scale (CES-D).<sup>11</sup> Consistent with previous research, a cut-off score of CES-D  $\geq 16$  determined depression 'caseness' with CES-D 16–26 indicating mild depression, and CES-D  $\geq 27$  moderate to severe depression.<sup>12,13</sup> Of the 1541 participants, 669 (43%) scored CES-D  $\geq 16$  and were randomised to the control (usual care) or intervention group. Randomisation was linked to the GP to ensure that the impact of GP education was specific to intervention GPs. Depression status of patients at 12 months was assessed by a mailed questionnaire, with nonrespondents receiving a postcard reminder, then an additional copy of the questionnaire, and

finally a telephone call. This achieved a follow up rate of 78% (Table 1).

All intervention GPs received individual patient depression scores and an education pack 'Depression and heart disease: guidelines for management in general practice'<sup>6</sup> posted out immediately after randomisation. Intervention patients were referred to the cardiac rehabilitation nurse and the psychiatry liaison registrar who saw the patient individually and recorded issues arising from consultations. Next, the trial coordinator attempted to arrange an EPC telephone case conference between the patient's GP, the cardiac nurse and the psychiatry registrar. The GP could claim a rebate of \$43.50 for participating in a case conference for 15–29 minutes. Psychiatry liaison registrars received an incentive payment of \$75 for every trial patient seen, and \$75 for every case conference completed. In two hospitals, these payments went directly to the registrar, and in the other two they were paid to the psychiatry department. During the case conference, the patient's depression screening score, and specific issues noted by the nurse and registrar were discussed. The intervention GPs were offered additional assistance in patient management, namely telephone advice from the psychiatrist on the project team, or fast-track referral for their patient to be seen either by the project psychiatrist, or the head of consultation-liaison psychiatry in the relevant hospital. Furthermore, intervention patients could be referred by their GP for 6–8 sessions of cognitive behaviour therapy (CBT), provided free of charge at one hospital location.

If an EPC case conference could not be arranged, the GP was offered 'telephone advice' from the study team consultant psychiatrist. This discussion generally lasted 5–10 minutes, covering the patient's screening scores, the GP's knowledge of the patient history, general advice, and the offer of additional assistance in patient management, described above. If neither a case conference nor phone advice took place, the default intervention, 'GP education only',

**Table 1. Follow up rate at 12 months**

	Control		Intervention	
	n (%)	Case conference n (%)	Telephone advice n (%)	GP education only n (%)
Baseline cases	338	79 (24)	132 (40)	120 (36)
Died	19 (6)	5 (6)	7 (5)	10 (8)
Withdrew	21 (6)	6 (8)	14 (11)	15 (13)
Cases available at 12 months	298 (88)	68 (86)	111 (84)	95 (79)
Nonresponse	61 (20)	11 (16)	27 (24)	23 (24)
Follow up rate	237 (80)	57 (84)	84 (76)	72 (76)

**Table 2. Baseline characteristics of trial participants**

	Control		Intervention	
	n (%)	Case conference n (%)	Telephone advice n (%)	GP education only n (%)
Total	338	79	132	120
<b>Depression</b>				
Mild	184 (54)	44 (56)	75 (57)	68 (57)
Moderate to severe	154 (46)	35 (44)	57 (43)	52 (43)
<b>Gender</b>				
Male	213 (63)	46 (58)	88 (67)	69 (58)
Female	125 (37)	33 (42)	44 (33)	51 (43)

comprised the education pack and patient's screening scores sent by post to the GP.

Only a small proportion of GPs had more than one patient in the trial, and cluster analysis by GP was found to be redundant in a mixed model analysis.<sup>14</sup> Depression severity at 12 months was analysed using chi-square tests, with  $p=0.017$  to correct for multiple post hoc comparisons. Results are presented as relative risk (RR) with 95% confidence interval (CI) and number needed to treat (NNT) to produce benefit in one patient.

The IDACC study protocol was approved by the Human Research Ethics Committee of each participating hospital.

## Results

There was no difference between patients in the control group and the three forms of intervention on 20 baseline variables assessed (including demographic, self reported past history of cardiac or emotional health problems or risk factors, and hospital admission details). Nor was there any difference in the proportion of depressed patients or gender of patients across the three forms of the intervention (*Table 2*).

Both psychiatry liaison and the cardiac rehabilitation nurses saw 102 patients during their hospital admission, of whom 79 had an EPC case conference (24% of the intervention group) (*Figure 1*). There was substantial variation in the frequency of psychiatry consultations between hospitals, but no increased uptake where psychiatry registrars were paid directly for their participation (*Table 3*). Reasons why case conferences did not occur when offered to the GP included: GP refusal to participate, patients died or withdrew consent before the case conference could take place, and scheduling difficulties. Telephone advice was offered to the GPs of the 252 patients; the 229 who were not reviewed by both psychiatry and rehabilitation staff, and 23 who were eligible for a case conference but did not receive one. This advice was implemented in 132 cases; 40% of the total intervention group. Reasons for telephone

**Table 3. Psychiatry liaison visits by hospital**

	Psychiatry liaison visit		Total
	Yes (%)	No (%)	
Hospital A*	23 (22)	83 (78)	106
Hospital B**	58 (55)	48 (38)	106
Hospital C*	18 (27)	49 (73)	67
Hospital D**	18 (35)	34 (65)	52
Total	117 (35)	214 (65)	331

\* Financial incentives paid to psychiatry registrars  
 \*\* Financial incentives paid to psychiatry department

**Table 4. Intervention effect at 12 months (control vs. intervention subgroup)**

	Moderate to severe depression at 12 months		RR (95% CI)	NNT (95% CI)	p
	No n (%)	Yes n (%)			
Control (no intervention)	155 (65)	82 (35)			
Case conference	41 (72)	16 (28)	1.2 (0.8–2.0)		0.348
Telephone advice	<i>68 (81)</i>	<i>16 (19)</i>	<i>1.8 (1.2–3.0)</i>	<i>7 (4–24)</i>	<i>0.008</i>
GP education only	51 (71)	21 (29)	1.2 (0.8–1.8)		0.392

*Italics indicate significant differences at  $p<0.017$*

advice not being implemented included: GP unavailable when psychiatrist called, GP refusal to participate, patient died or withdrew before telephone advice could take place, no GP, or no reason recorded. 'GP education only' applied in 120 cases (36%) where no additional intervention could be delivered. Of the additional support offered to GPs, 10 patients were referred and received 'fast-track' psychiatry appointments, while four were referred to, and three completed, a course of CBT.

At 12 months, when the three forms of intervention were compared with the control group, only the psychiatrist telephone call led to a significant reduction in the proportion of patients with moderate to severe depression (CES-D  $\geq 27$ ), 19% vs. 35% (RR: 0.55, 0.34–0.86), NNT 7 (4–24) (*Figure 2*).

## Discussion

This study confirms the high prevalence of depression among hospitalised cardiac patients. A previous analysis of the IDACC

randomised control trial on the basis of 'intention to treat' has demonstrated a clinically meaningful effect of targeted psychiatry liaison with GPs.<sup>10</sup> However, this post hoc analysis indicates that a telephone call from a psychiatrist to the GP was easier to organise and more effective in reducing depression severity of the patients than an EPC case conference.

Major barriers to implementing EPC case conferences became apparent shortly after this study commenced. As well as GP barriers, there were problems within the hospitals; large differences in the numbers of patients reviewed by consultation liaison psychiatry across the four hospitals suggest that hospital culture, work practices, and psychiatry registrar workload were factors. In the public hospital system, as clinical units are organised in multidisciplinary teams, it has often been assumed that EPC case conferences with GPs would be easily implemented. However, multidisciplinary teamwork generally occurs within defined

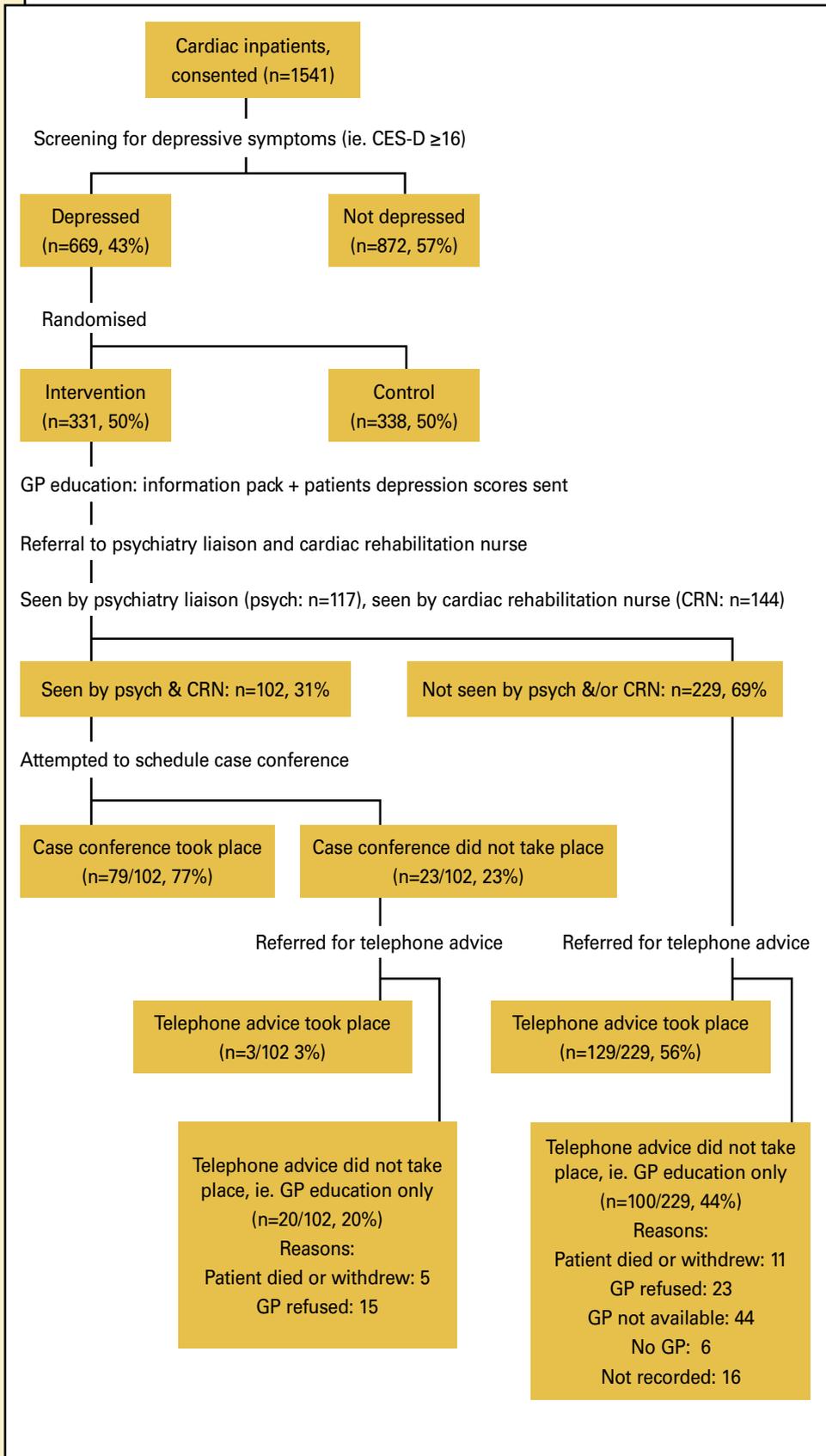


Figure 1. Flow of participants through the trial

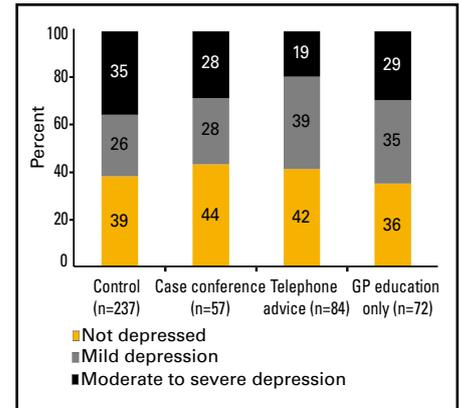


Figure 2. Depression severity at 12 months  
Depression category: not depressed (CES-D ≤15), mild depression (CES-D 16–26), moderate to severe depression (CES-D ≥27)

clinical areas, and scheduling joint consultations across disciplines, even as part of a research protocol, was difficult. A phone call from the consultant psychiatrist to the GP of the depressed patients was much easier to achieve.

Of note, there was a low uptake of the additional assistance offered to GPs, with very few patients being referred for either further psychiatric review or a course of CBT. This is consistent with findings of Buchan and Boldy,<sup>15</sup> that GPs rarely made referrals for mental health problems until their own resources were exhausted and the situation became urgent.

There are shortcomings of these findings: post hoc analyses are not hypothesis driven, we did not use a randomly allocated comparison of different methods of providing psychiatric advice, and those GPs who accepted the intervention may have differed from those who declined, even though the different patient groups were comparable in demographic characteristics.

As brief telephone contact between GPs and an experienced psychiatrist was the only form of intervention significantly better than usual care, this suggests that future efforts should be aimed at providing GP assistance in this direct manner. As the high prevalence of depression in cardiac patients is well documented and can be treated, we recommend that this simple intervention be

explored further as a way of providing better outcomes for patients.

### Implications of this study for general practice

- Nearly half of patients admitted to public hospitals with cardiac conditions were found to be depressed on screening and without intervention, a third remained moderately to severely depressed 12 months later.
- GPs should consider proactively screening all cardiac patients discharged from hospital for depression.
- GPs can intervene effectively to reduce depression in this group when prompted by a telephone call from a consultant psychiatrist.

Conflict of interest: none declared.

### Acknowledgments

Thanks to the participating patients, the IDACC Advisory Group for advice and assistance, the heads of cardiology departments for cooperation and support, heads of psychiatry and psychiatric consultation liaison services, psychiatric registrars, medical, and mental health and cardiac nursing staff for their role in implementing the trial, and to Graeme Tucker and Naomi Guiver for statistical advice.

Funding was provided by the South Australian Department of Health (formerly Department of Human Services) and grant funding from the Commonwealth Mental Health Strategy.

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