

Heart2Heart: An integrated approach to cardiac rehabilitation and CBT

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Anxiety and depression are up to three times higher in people with cardiac conditions (Lane et al, 2002). Major depression was identified in 19.8% of survivors of acute myocardial infarction (MI) (Thombs et al, 2006), while in a meta-analysis of patients with chronic heart failure, anxiety was identified in 11–45% of patients and depression in 10–60% of patients (Yohannes et al, 2010). Anxiety and depression are associated with lower levels of self-efficacy, impaired health status, and poor treatment compliance and outcomes. This can increase risk and repeated attendance to patients' GPs or accident and emergency departments (Grace et al, 2004; Thombs et al, 2006). Psychological difficulties have also been associated with reduced self-care and attendance at cardiac rehabilitation and increased use of medical services (Strik et al, 2003; Lane et al, 2001). Anxiety and depression have both been related to increased cardiovascular morbidity and mortality (Frasure-Smith et al, 2000).

The National Institute for Health and Care Excellence (NICE) (2011a) identified evidence that people with long-term physical health conditions, such as diabetes and cardiovascular disease, often have a comorbid mental health condition. However, studies have shown that these mental health needs are not always met. For example, Knapp et al (2011) reported that around 430 000 people who had depression as well as diabetes—a significant risk factor for cardiovascular disease—received sub-optimal care.

There is also evidence that psychological interventions have positive outcomes for cardiac patients. For example, in a Cochrane meta-analysis, Whalley et al (2011) found that psychological treatments produce small-to-moderate reductions in depression and anxiety and can reduce cardiac mortality in patients with coronary heart disease. However, they did not find any evidence that psychological interventions reduced rate of heart attack or need for cardiac surgery, or total mortality. Positive impact was also found by O'Neil et al (2011) in a meta-analysis of five randomised controlled

ABSTRACT

Background: Heart2Heart is a service that integrates cardiac rehabilitation and psychological therapy for patients following myocardial infarction, as well as for those with other cardiac diseases such as heart failure, cardiomyopathy and arrhythmias. Psychosocial support within cardiac rehabilitation programmes has typically been delivered by a specialist psychologist embedded within the cardiac rehabilitation team. Heart2Heart has provided an alternative to this model by developing a more extensive service, which includes primary and secondary care psychological therapists working in a stepped-care way using the Improving Access to Psychological Therapies (IAPT) stepped-care approach. Stepped care is the provision of the simplest care possible to achieve the intended aims. The service was one of 15 Department of Health long-term condition pathfinder sites evaluating the feasibility of such a service and was subject to a national evaluation. **Objectives:** To provide an acceptable and accessible psychological assessment and treatment service to patients as part of integrated cardiac care. **Methods:** This project was designed as a feasibility study to develop an innovative service across organisational boundaries. A selection of validated tools was used to measure anxiety, depression and quality of life outcomes. An economic analysis of primary and secondary care service use was also carried out. **Conclusions:** The project provided timely and cost-effective cognitive behavioural therapy with high levels of patient satisfaction. Preliminary evidence suggests clinically significant improvements in levels of anxiety, depression and quality of life. Further work is ongoing to explore the economic impact on reducing hospital use and GP attendance.

KEY WORDS

♦ Cardiac ♦ Anxiety ♦ Depression ♦ Cognitive behavioural therapy
♦ Stepped care ♦ Integration

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trials (RCTs). They found that depression treatment involving pharmaceuticals and/or psychotherapy in patients who had post-MI depression had a significant effect on mental health quality of life and a modest but significant effect on physical health quality of life. The above body of research has led to psychological interventions being advocated in key national guidelines. The NICE (2013) guidance for secondary prevention of MI recommends that guidelines related to depression and anxiety (NICE, 2009a; 2009b; 2011a) are also consulted for management of patients who also have clinical anxiety or depression.

Cardiac rehabilitation has increasingly incorporated these recommendations by including the screening of cardiac patients for anxiety and depression and the inclusion of psychological interventions. Research has shown that including psychological interventions in cardiac rehabilitation can improve cardiac patients' adherence to lifestyle and medication regimens, reduce medical risk, and help them return to pre-morbid levels of psychosocial functioning and quality of life, to a greater extent than cardiac rehabilitation without psychological care (Linden et al, 1996; Dusseldorp et al, 1999).

Psychological interventions for cardiac patients are most commonly provided by a single psychologist attached to a cardiac rehabilitation team. For example, the cardiac rehabilitation team at Guy's and St Thomas' NHS Foundation Trust developed an integrated stepped-care service where a psychologist was embedded within the team to provide physical and psychological assessment and intervention (Child et al, 2010). Depending on symptom severity and needs, the service encompassed psychoeducational sessions, group workshops, brief individual therapy, or longer-term individual therapy using cognitive behavioural therapy (CBT) (Child et al, 2010). This model was found to increase acceptability and accessibility of psychological care by reducing stigma, bringing a significant increase in the number of patients accessing mental health care, with 50% of patients accepting psychology referrals compared with 20% accepting referrals to liaison psychiatry (Child et al, 2010). Before Heart2Heart, a similar service existed in Oxfordshire which embedded a single psychologist in the cardiac rehabilitation team, providing assessment, group psychoeducation and individual CBT interventions (Sanders et al, 2011).

The model of care in these services relies on referral to a single psychologist attached to the cardiac rehabilitation team. Although evaluations of such services show that psychological care is made more accessible and acceptable, the model accommodates a relatively small number of patients as only one member of staff can provide psychological input. Employing a highly skilled clinician, such as a clinical or counselling psychologist, to provide services to people with low-to-moderate levels of distress and complexity can also mean that services are paying a high cost for service provision to a small number of patients.

Heart2Heart provides an alternative to this model, by creating a more extensive service, following the Improving Access to Psychological Therapies (IAPT) model (Clark, 2011). IAPT is a national programme which was developed following a white paper commitment entitled *Our Health, Our Care, Our Say* (Department of Health (DH), 2006). IAPT aims to improve access to evidence-based psychological therapies for anxiety and depression and make them readily available to the larger public. IAPT is structured around a model of stepped care, whereby the least intensive intervention appropriate for an individual is provided in the first instance. If patients require more or less intensive input, they can then be stepped up or down the pathway according to changing needs and treatment response (*Figure 1*).

Heart2Heart service

The Heart2Heart service has encompassed the IAPT stepped-care model, creating a robust psychological service integrated with the cardiac specialist services. This service development encompassed a collaborative multi-agency approach, working across organisational boundaries between secondary care cardiac rehabilitation, secondary care clinical health psychology and primary mental healthcare through the local IAPT service. Collaborating with IAPT has enabled the service to spread out across various locations in Oxfordshire, as IAPT sees patients across multiple GP surgeries in the county. It has also enabled the service to operate by developing the skills of IAPT staff who have been trained in providing CBT to people with long-term physical conditions, thus increasing service capacity through a large number of available therapists.

The Heart2Heart service has been developed and received funding as one of the 15 Department of Health Long Term Conditions Pathfinder sites (Lusignan et al, 2013), enabling the service to be evaluated nationally as well as locally. It has been developed as a feasibility study to evaluate the effectiveness of an integrated stepped-care approach for cardiac patients. Working with colleagues from existing services, through a service level agreement (SLA), a collaborative multi-agency partnership has been developed to include representatives and clinicians from primary and secondary care and from physical and psychological health services.

Service design

Heart2Heart involves four steps of care, with step 1 being the least intensive and simplest intervention, and step 4 as the most intensive intervention for the most complex patients with severe presentations. The movement of people from a step 1 intervention through to a higher step intervention is based on increased need and on poor response to treatment at an earlier step. The aim is that the pathway of care is individualised and appropriate to the patient. The service design is shown in *Figure 2*.

The stepped-care model

The recommendations in this guideline are presented within a stepped-care framework that aims to match the needs of people with depression to the most appropriate services, depending on the characteristics of their illness and their personal and social circumstances. Each step represents increased complexity of intervention, with higher steps assuming interventions in previous steps

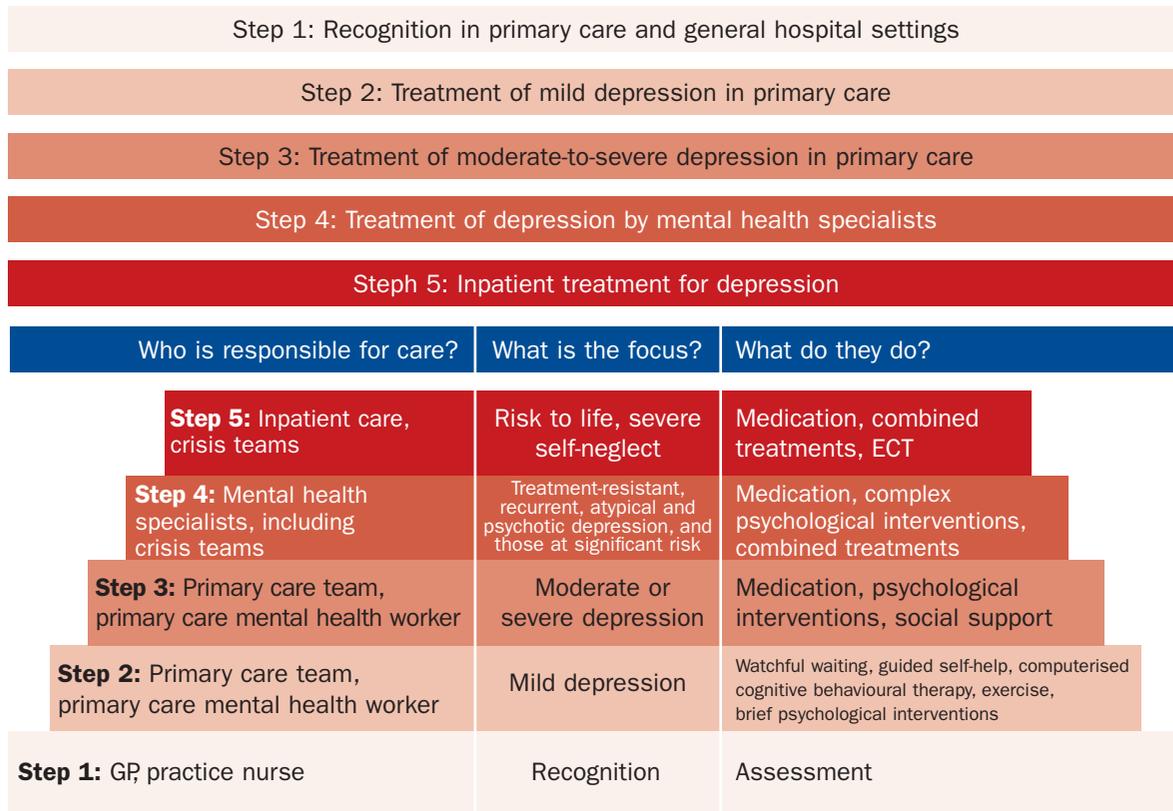


Figure 1. Stepped-care model for the treatment of depression (Care Services Improvement Partnership and National Institute for Mental Health in England, 2011)

The Heart2Heart pathway includes:

- ♦ Step 1: A 1-hour CBT psychoeducation session embedded within the cardiac rehabilitation programme. Routine screening for anxiety and depression by the cardiac nurses using the Hospital Anxiety and Depression Scale (HADS) questionnaire (Zigmond and Snaith, 1983)
- ♦ Steps 2, 3 and 4: Psychological therapy for patients and their carers. Step 2 therapy is provided by psychological wellbeing practitioners (PWPs), step 3 is provided by CBT therapists, and step 4 is provided by clinical health psychologists.

Participants

Patients referred to Heart2Heart have a variety of cardiac diagnoses including MI, arrhythmias, heart failure and people who have undergone cardiac surgery or have implantable devices.

Examples of psychological difficulties the cardiac patients referred to Heart2Heart face include: health anxiety; panic attacks; low mood due to loss of good health and previous identity/role; avoidance of activities/

places they have associated with the cardiac event; fear of going out on their own or driving in case they become ill; shock and denial about their cardiac diagnosis; trauma from implantable cardioverter defibrillator (ICD) shocks; sleeping problems due to fear of dying in their sleep; and the re-emergence of pre-morbid psychological issues.

Heart2Heart can also be offered to and attended by carers. The unmet psychological needs of carers were initially identified when carers were encouraged to be involved in the cardiac rehabilitation programme, particularly to attend patient appointments and the group education sessions. Carers often highlighted that they experienced high levels of anxiety relating to the patients' cardiac event and might have been traumatised by seeing their relative have an MI or cardiac arrest. Unmet carer need has been identified by several studies. Schulz et al (1995) reviewed a number of studies which found that over one-third of people who provide care for a relative with dementia suffer from high levels of depression, stress and general psychological morbidity. They also report poorer physical health and take more prescribed medication than

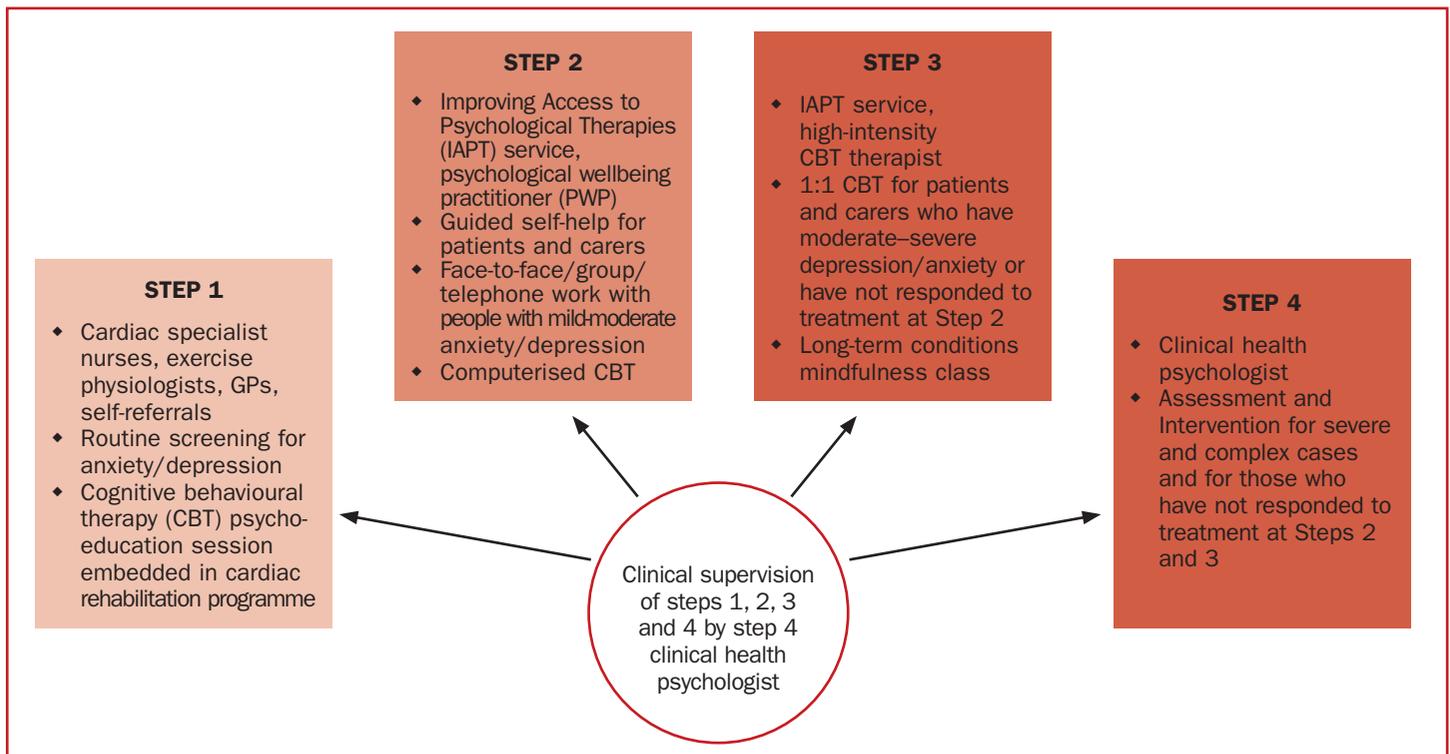


Figure 2. The Heart2Heart model: Stepped care for individuals with cardiac disease and their carers

age-matched samples. NICE (2013) identifies limited evidence (based on three studies of married couples) that involving spouses may have beneficial effects on family anxiety. As a result, carers are included and, where appropriate, are offered psychological interventions.

Outcome measures and assessments

Outcome measures are routinely collected and are an integral part of the service evaluation in order to identify whether this model of care is cost-effective and should be replicated to other service providers. Outcome measures include:

- ♦ Using HADS (Zigmond and Snaith, 1983) to measure levels of anxiety and depression. This is administered at the beginning and end of therapy
- ♦ The IAPT Minimum Dataset, which includes the Generalised Anxiety Questionnaire (GAD 7) (Spitzer et al, 2006) to measure anxiety, the Patient Health Questionnaire (PHQ9) (Kroenke et al, 2001) to measure depression, and the Work and Social Adjustment Scale (Mundt et al, 2002) to measure the impact of the patient's psychological difficulties on work and social relationships. These are administered at the beginning of every session
- ♦ Quality of life outcomes are measured only at the initial and last therapy session using the Dartmouth Co-op (Wasson et al, 1992), the Minnesota Living with Heart Failure Questionnaire (MLWHFQ) (Rector et al, 1993) and the EQ5D (EuroQuol Group, 1990)
- ♦ Measurement of patient experience (Steine et al, 2001) and the Clinical Global Impression Scale (Guy, 1976) collected at the end of therapy

- ♦ Primary and secondary healthcare use data on emergency department attendances, inpatient admissions, outpatient appointments and GP consultations. These data are analysed to see whether there is a reduction in health-care costs and are collected for the 6 months before the start of therapy and the 6 months after the end of therapy.

Referrals

Referrals can be made using a number of sources. The various nursing teams involved in cardiac care make the majority of referrals, as they provide the initial screening for anxiety or depression. Such nursing teams include the secondary care cardiac rehabilitation service, arrhythmia and ICD services, genetics and community heart failure specialist nurses. Referrals for psychological intervention can be made at any time during the patient's journey as they can express feelings of anxiety or depression at any time. Initial screening assessments used by the nursing teams are HADS, Dartmouth Co-op and the MLWHFQ. In line with the IAPT ethos, patients and carers can also self-refer or be referred by their GP. It would be important for anyone wanting to replicate this service to connect with their local IAPT and clinical health psychology services to establish how referrals can be made locally. Psychological therapists also need to link with their local cardiac specialist clinicians and the patient's GP as all patients seen in the service require medical monitoring.

The information that needs to be provided to the psychological therapist, for referrals made by cardiac nurses, includes cardiac diagnosis, medications, comorbidities, history of previous mental health problems, and questionnaire scores from the HADS, the Dartmouth Co-op and the

MLWHFQ. For patients who self-refer, the HADS, Dartmouth Co-op and MLWHFQ measures are obtained by the therapist and a report on the medical condition can be obtained from the cardiac nurse, consultant or GP.

All referrals are triaged by a step 4 clinical health psychologist and the patient is then assigned to the relevant step and therapist in their local area. The psychological therapist aims to contact the individual within a week of receiving the referral and assess them within a month from referral. Some patients who live out of area may prefer to be seen locally or opt for telephone work. Information from the initial assessment is shared, provided the patient consents, with their cardiac nurse, cardiologist, GP or other health professional as appropriate.

Cognitive behavioural therapy

The psychological treatment of choice at all steps of care is CBT, which is recommended by NICE for the treatment of many anxiety disorders and depression (NICE, 2009a; 2011b). CBT is a talking therapy which looks at the links between thoughts, feelings, behaviours and bodily sensations. Its premise is that the way we interpret or think about a situation makes us feel and behave in a certain way. In turn, the way we behave can have an effect on our thoughts and feelings, thus creating a vicious cycle (Greenberger et al, 1995). *Figure 3* shows the interaction between these areas, which is called the cognitive cycle. CBT aims to help people break 'vicious' cognitive cycles through a range of techniques that address unhelpful thinking patterns and unhelpful behaviours (Greenberger et al, 1995). Treatment goals are agreed collaboratively between the therapist and the patient and an individualised treatment plan is formulated at the first appointment.

Step 1 intervention

Step 1 involves the routine screening for anxiety and depression delivered by the cardiac nurses, as well as a CBT psychoeducation session facilitated by a PWP. The psychoeducation sessions take place every few weeks so that each patient can attend once and they are offered in hospital or community settings, such as leisure centres. The format of these sessions is relatively informal and covers the psychological and emotional impacts of a cardiac event. Each session includes information on: common psychological reactions to cardiac events; the normal adjustment process to changes in health; how to recognise problems adjusting; how to build confidence following a cardiac event; symptoms of anxiety and how to distinguish these from cardiac problems; techniques to overcome anxiety; symptoms and treatment of depression; how to recognise symptoms; and when and how to seek help, including self-referral. These sessions also provide an opportunity for patients and carers to discuss their concerns, learn about the service and discuss possibilities for a referral with their cardiac nurse.

Psychological assessment at steps 2, 3 and 4

Whichever step a patient is assessed at includes an initial assessment and a thorough risk assessment by the assigned

therapist to assess suitability for the service and whether that step of care is the most appropriate for the patient's needs and level of severity. At step 2, the assessment is conducted face to face or on the phone, over a 45-minute session. At steps 3 and 4, it is conducted in a face-to-face 1-hour session. If the patient is appropriate for that step of care, a treatment plan is established. If the patient is not appropriate, they are stepped up or down or alternatively referred to another service. Alternative services where patients are referred are most commonly bereavement and counselling services.

Step 2 intervention

Step 2 is a low-intensity intervention provided by a PWP for individuals who have mild-to-moderate anxiety or depression. The majority of patients are seen at this step. After the initial assessment, subsequent sessions are conducted over the phone and last for 30 minutes. The total number of sessions available at this step is 6 and if patients have not recovered by the end of therapy, they may need to be stepped up or signposted to a different service. The main treatment mode at this step involves the provision of psychoeducation and behavioural activation through self-help material and telephone appointments. Other treatment modes available at step 2 which are less commonly followed are computerised CBT and group CBT for insomnia.

Step 3 intervention

Step 3 is a high-intensity intervention aimed at people with moderate-to-severe anxiety and depression. People may be referred directly to step 3 from triage, if they haven't responded to a step 2 intervention or if they have been stepped down from step 4. Step 3 interventions are provided by CBT therapists and are normally up to 20 face-to-face sessions which each last 1 hour. These are held at the cardiac rehabilitation department, local GP surgeries or the patient's home if required by housebound patients, therefore having no impact on hospital space. Mindfulness-based CBT classes are also offered.

Step 4 intervention

Step 4 is for those people who present with the most severe forms of anxiety, depression and other complex

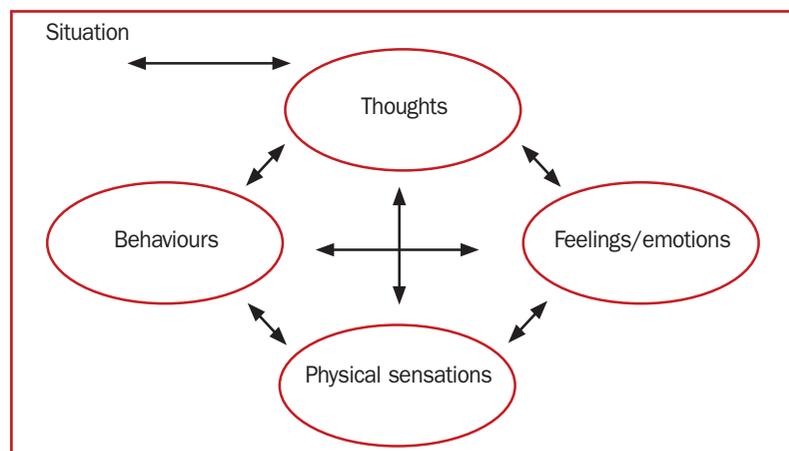


Figure 3. The five areas model (Greenberger et al, 1995)

psychological problems. Therapy is delivered by a clinical health psychologist who provides CBT as well as other evidence-based treatments, as appropriate to the patient. Sessions are also face-to-face 1 hour visits, usually for up to 30 appointments, over a period of a year or more.

Three-month review of treatment

All therapists offer a 3-month follow-up review and repeat measures of mood, anxiety and quality of life. The therapist writes a discharge letter to the individual with a copy to his or her GP, cardiac nurse, cardiologist and other professionals involved in their care to maintain good communication between parties.

Clinical supervision

Clinical supervision is an essential component in the practice of talking therapies, including CBT, as it helps develop the therapist's clinical skills and reflection, as well as providing a containing space to deal with the emotional impact of their work (Pretorius, 2006). In Heart2Heart, clinical supervision is provided by a step 4 clinical health psychologist, both to the various IAPT therapists, as well as to the cardiac nurses. For nurses, supervision takes place in small groups of 3–4 nurses and exercise physiologists in the hospitals where they work, thus providing an accessible space to learn basic CBT techniques that aim to help them recognise and manage anxiety and low mood in patients.

Outcomes

The Heart2Heart project has identified and developed a collaborative stepped-care model of providing CBT-based interventions to the wider patient population in Oxfordshire. This project embraces an alliance between secondary and primary care health professionals working together in order to provide seamless care to patients and their carers, thus facilitating patient, family and community integration of care. By offering the opportunity for early intervention it may reduce the possibility of problems escalating.

The outcome measures are being evaluated and early evidence indicates that the stepped-care interventions are effective in reducing levels of anxiety and depression and improving quality of life for people post MI and for people

with other cardiac conditions such as heart failure. An economic evaluation of the service has also been initiated and is analysing data on the number of patient contacts with their GP, the emergency department, and hospital inpatient and outpatient visits. Preliminary data indicates a reduction in emergency department and inpatient visits.

Over a period of 29 months, between February 2012 and July 2014, 222 patients were referred to the service. Of the 189 who attended an initial assessment, 146 attended at least two therapy sessions. Sixty-six per cent of the people referred had experienced a recent MI, whereas the rest had heart failure or other heart disease. Detailed outcome measures will be reported in a later paper. As the service was developed as a DH pathfinder, the outcomes and the economic evaluation of the Heart2Heart project will also be reported to and analysed together with other pathfinders by the DH IAPT Long-Term Conditions and Medically Unexplained Symptoms Pathfinder projects team and will be published separately.

The main strengths of this project include timely and cost-efficient accessibility via local service provision, telephone or computer interventions, and promoting patient self-management. The benefits of this include access to effective evidence-based talking therapies in a manner that suits the individual. Time and effort is saved on travelling for all involved, reducing costs for both the individual and the service provider. The stigma sometimes associated with psychological service provision has been reduced by involving the therapist as an integral part of cardiac services, thus normalising this aspect of care and the onward referral process.

Through using a stepped-care workforce, the skills and grade of the therapist are matched to the severity of the problem, instead of using staff from higher grades to provide the initial care. Through the stepped-care approach, the progression of patients from step 1 interventions to higher step interventions is based on an assessment of severity of problems and responsiveness to the previous treatment received. Patients with mild/moderate depression and/or anxiety benefit from briefer psychological interventions, diminishing the burden and need for more intensive interventions, thus reducing pressure on the patient, service providers and commissioners, making care provision more cost-effective.

KEY POINTS

- ◆ Anxiety and depression are up to three times higher in people with cardiac disease
- ◆ Heart2Heart integrates psychological and physical health services for cardiac patients using a stepped-care model
- ◆ Stepped care provides the simplest care at first instance, providing a cost-effective use of services
- ◆ Using the Improving Access to Psychological Therapies (IAPT) workforce, the service provided cognitive behavioural therapy in a range of locations, allowing for a larger number of patients to be seen within a short period from referral

Conclusion

Clinical supervision has helped the cardiac specialist teams to reflect on and challenge their approach to providing health information to individuals. The cardiac team now encourages patients to identify their concerns and ask questions so that the information given on their condition meets the needs of each individual patient, therefore engaging and empowering them to take control and manage their own health. This project offers advantages in terms of affordability, flexibility and access for individuals, providing the 'right touch at the right time in the right place'.

It is possible that this model can be replicated by other teams of health professionals working with patients with

other long-term conditions and with their carers. Future work could include a RCT which would enable the authors to explore in greater detail which interventions are the most effective and for which patients. **BJCN**

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ANSWER TO ECG OF THE MONTH

The rhythm strip shows what appears to be a single junctional QRS complex with the atrial complex initiated by the AV node. During the T-wave, there develops a polymorphic broad complex tachycardia (*Torsade de pointes*) with a rate of 300 beats per minute.

The 12-lead electrocardiogram (ECG) shows a regular junctional rhythm (no preceding P wave, there appears to be retrograde P waves in the second half of the rhythm strip). There is also a prolonged QT interval throughout the ECG (QTc greater than 510 milliseconds).

Many antipsychotic drugs prolong QT interval and are pro-arrhythmic, especially in combination. All drugs were stopped, and reviewed by cardiology and the pharmacy to reduce the risk of recurrence of the arrhythmia.