



# Cardiac rehabilitation services in Ireland: the impact of a coordinated national development strategy

The national Cardiovascular Health Strategy including specific plans for cardiac rehabilitation was launched in Ireland in 1999. A survey of cardiac rehabilitation services was conducted in 2003 to evaluate progress on service provision.

To establish levels of service provision, service formats and geographic distribution of cardiac rehabilitation services in 2003 and compare them with the status pre-Strategy (1998).

All hospitals in Ireland (n=39) admitting cardiac patients to a coronary or intensive care unit were surveyed by postal questionnaire.

All hospitals provided information and all reported providing Phase I cardiac rehabilitation. Seventy-seven percent (30 of 39) provided Phase III rehabilitation in 2003 (i.e. outpatient cardiac rehabilitation services) compared with 29% (12 of 41) in 1998. Of those hospitals currently without programmes, 78% (seven of nine) had plans in place for programme establishment. All programmes had trained cardiac rehabilitation coordinators, multidisciplinary teams and multiple components as recommended in the Strategy. In 82% of hospitals, intervention was provided at Phase II (immediate post-discharge period) while 26% of hospitals provided intervention at Phase IV (long-term maintenance period).

There have been substantial achievements towards the Cardiovascular Health Strategy target of providing cardiac rehabilitation services for all relevant hospitals in Ireland over the past five years. Service provision of cardiac rehabilitation can benefit from collective efforts made across centres to encourage the prioritisation of cardiac rehabilitation in national health policy initiatives.

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Cardiovascular mortality rates in Ireland have been decreasing steadily in recent years. Although Ireland's rates remain among the highest in Europe, the gap between cardiovascular mortality rates for Irish men and women under the age of 65 and the European Union average is narrowing.<sup>1</sup> The Second Report on the Implementation of the Cardiovascular Health Strategy<sup>1</sup> states that in this context the number of people living with chronic cardiovascular disease is increasing, resulting in an increased need for ongoing disease management, secondary prevention and cardiac rehabilitation.

Cardiac rehabilitation has been defined by the World Health Organisation<sup>2</sup> as the 'sum of activities required to influence favourably the underlying cause of the disease, as well as to ensure the patient the

best possible physical, mental and social conditions so that they may through their own efforts preserve, or resume when lost, as normal a place as possible in the community. Rehabilitation cannot be regarded as an isolated form of therapy but must be integrated with the whole treatment, of which it only forms one facet'. Core components of cardiac rehabilitation programmes typically include a combination of exercise, psychological and educational interventions.<sup>3,4</sup> Cardiac rehabilitation programmes are typically organised in four phases.<sup>5</sup> Phase I refers to the acute treatment of patients admitted to the intensive care unit and the in-hospital stage in recovery. Phase II follows discharge from hospital and is a period of convalescence for the patient. Phase III typically involves a 4-12 week outpatient programme incorporating exercise and education classes and is usually commenced between the fourth and eight

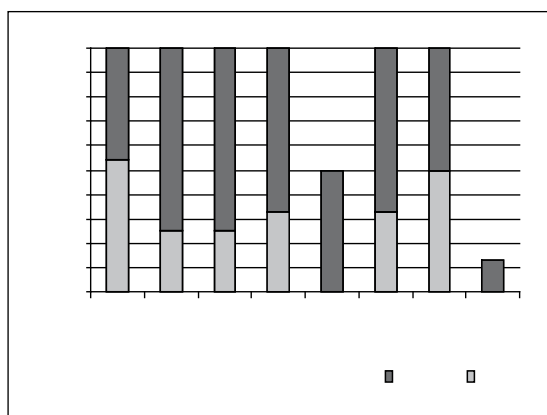


week post-discharge, depending upon the amount of cardiac damage.<sup>6</sup> Phase IV refers to the period of long-term maintenance and typically involves community-based exercise sessions.

In the past, service provision for cardiac rehabilitation in Ireland has been poor. A European Union survey of cardiac rehabilitation activity conducted in 1995 found that Ireland ranked among the lowest in relation to the number of cardiac rehabilitation programmes per head of population.<sup>7</sup> Following this, a first national survey of cardiac rehabilitation services in 1998 found that only twelve hospitals (29% of all hospitals admitting cardiac patients) provided outpatient programmes.<sup>8</sup> In 1999 the national Cardiovascular Health Strategy<sup>9</sup> was launched which aimed to coordinate and prioritise activities in relation to cardiovascular disease management. As a result additional resources were made available to cardiac rehabilitation services and ten recommendations were made specifically concerning cardiac rehabilitation. The first of these recommendations (R9.1) stated that 'every hospital that treats patients with heart disease should provide a cardiac rehabilitation service.'

The aim of the present study was to establish the level of service provision of cardiac rehabilitation in 2003. Geographic distribution of current programmes are outlined, staff profiles, programme formats and patient throughput are described and comparisons are made with service provision in 1998. This facilitates the assessment of the extent to which recommendation R9.1 has been achieved and evaluates the impact of the national Cardiovascular Health Strategy on cardiac rehabilitation service provision.

All general hospitals admitting cardiac patients to a coronary or intensive care unit in Ireland (n=39) were surveyed by postal questionnaire to cardiac rehabilitation coordinators or clinical nurse managers of the coronary or intensive care unit as appropriate. Information was sought on the cardiac rehabilitation phases (phases I-IV) provided by the hospital; components of each phase and staffing levels. Where Phase III outpatient programmes were provided, programme formats (i.e. number of sessions and patients per group) and the number of new patients attending in the previous year were queried. Where outpatient programmes were not provided, information was sought on plans to develop programmes. Following telephone reminders the final response rate was 100%.



Seventy-one percent of hospitals admitting cardiac patients provided an outpatient (Phase III) cardiac rehabilitation programme in 2003 compared with 29% in 1998 (Figure 1). There was 100% provision in six of the health board areas. The Mid-Western Health Board provided services in 50% of hospitals while the Southern Health Board had the least developed cardiac rehabilitation services with only 13% (one of eight) of hospitals providing cardiac rehabilitation services. Of those hospitals currently without outpatient services, seven of nine had advanced plans to develop programmes and six of nine of these hospitals already had a cardiac rehabilitation coordinator in place. Hospitals without outpatient services cited lack of funding, lack of staff and lack of available space as the greatest barriers to programme development.

The number of new patients entering phase III programmes in 2002 was available from 71% of centres who provided programmes in the previous year (Table 1). The remaining hospitals were unable to provide throughput figures. Programmes in the Eastern Regional Health Authority enrolled most patients (1164 in total) while the smallest number was seen in the Midland Health Board area (50 in total). Across all centres providing information in 2002, a total of 2448 patients were enrolled compared with 696 in 1996. This demonstrates a substantial increase in patient throughput. Most centres (96%) placed no age restrictions on entry to the programme.

Phase III programmes lasted for a median of 8 weeks, including a median of 24 exercise sessions and a median of eight education sessions (Table 2). Typically six to eight patients were seen in exercise and education sessions. A wide range of components



was offered by phase III programmes and matched core components recommended by national and international guidelines.<sup>3,4,5</sup> Almost all centres (ranging from 96-100%) provided education on cardiac disease, exercise, smoking cessation, medications, nutrition and stress management. Eighty percent provided psychological advice; 77% provided sexual counselling and 53% provided support for vocational rehabilitation. Table 3 shows the mean amount of time spent on each component across centres. Most time was spent on cardiac education, relaxation training and nutrition education.

The multidisciplinary team comprised a variety of health professionals. There is evidence of a substantial increase in professional input to programmes since 1998 (Table 3). All centres had a designated cardiac rehabilitation coordinator who held at minimum a diploma level qualification or higher in cardiac rehabilitation training. Staff members who provided most time to the programme were cardiac rehabilitation coordinators, cardiac rehabilitation nurses, dieticians, physiotherapists and secretarial staff. Time designated to the programme by all professional categories has increased from a mean of 45.9 hours per week in 1998 to a mean of 113.1 hours per week in 2003. Despite these increases, centres have reported several concerns with staffing levels. Thirty percent of centres reported needing increased time from a psychologist; 30% needed increased dietician time; 23% reported concerns about lack of cover for annual leave and 6% reported the need to appoint a vocational counsellor.

Service provision levels of phases I, II and IV provided by each hospital were also established. Phase I cardiac rehabilitation was provided in 100% of hospitals. Clinical management issues (e.g. education on diagnosis, diagnostic testing, blood pressure, medications and family history) and risk factor management issues (e.g. education on smoking, weight reduction advice, lipid lowering advice and risk factor assessment) were addressed by almost all centres. Psychosocial management issues were addressed by a majority of hospitals: 85% provided psychological advice; 82% provided sexual counselling and 67% provided vocational counselling. Post-hospital management issues proved to be the weakest components of phase I intervention. While 100% of hospitals provided discharge advice, three-quarters (74%) issued an individual patient plan

for self-care and lifestyle change and 52% provided home needs assessment. The Heart Manual [10] (a six-week home-based post MI rehabilitation programme) was issued in phase I in 36% of hospitals.

Phase II cardiac rehabilitation was provided in 82% of hospitals. Risk factor education was the main intervention with 72% of all hospitals providing smoking cessation education and 66% providing nutrition education in Phase II. Psychosocial management was again less widely addressed: 49% provided psychological advice, 46% provided sexual counselling and 33% provided vocational counselling. In a majority of hospitals, care was delivered by telephone (64%) while individual outpatient (41%) and group outpatient (33%) appointments were offered in a number of centres. The Heart Manual was issued in phase II in 23% of centres. Home visits was the least frequent method of care delivery (13%).

Twenty-six percent of hospitals reported that they provided a formal phase IV programme while outpatient appointments post-phase III were offered in 33% of hospitals. Some hospitals referred patients to support groups (26%) and community exercise classes (21%). About half of hospitals had links with general practitioners (56%); 33% linked with health promotion teams and 18% had links with community leisure centres.

The second national survey of cardiac rehabilitation service provision in Ireland has shown that over three quarters of hospitals admitting cardiac patients now provide an outpatient cardiac rehabilitation programme. This is a marked increase since 1998 when only 29% of hospitals provided programmes. It demonstrates that substantial progress has been made in achieving Recommendation R9.1. of the national Cardiovascular Health Strategy. It is envisaged that 100% service provision will be reached in the near future since seven of nine hospitals without outpatient programmes have plans to develop them. However, hospitals have reported several obstacles in achieving their plans such as lack of funding, staffing and available space.

The increases in programme numbers has been paralleled by increases in patient throughput. There have also been marked increases in the time dedicated to programmes by health professionals since 1998. All categories of health professionals



	6 (8)	1164	4 (6)	526
	3 (4)	197	1 (1)	75
	2 (2)	192	1 (1)	22
	3 (4)	293	0 (1)	-
	2 (2)	135	-	-
	1 (3)	50	0 (1)	-
	3 (4)	417	1 (2)	73
	0 (1)	-	-	-
	20 (28)	2448	7 (12)	696

	8.6 (2.3)	8	(6-18)
	19.7 (8.0)	24	(2-30)
	9.4 (4.1)	8	(2-24)
	6.2 (1.4)	6	(4-10)

	71.3 (45.9)	60	(30-260)
	71.3 (58.4)	60	(15-280)
	67.8 (31.9)	60	(30-150)
	60.2 (36.0)	60	(0-180)
	45.4 (43.1))	45	(0-200)
	35.2 (23.8))	30	(0-90)
	26.3 (34.6)	45	(0-120)
	25.4 (24.5)	17.5	(0-90)
	18.0 (24.5))	0	(0-90)
	9.5 (16.5)	0	(0-60)



	28.2 (14.1)	37.2 (25.7)
	7.5 (12.7)	19.8 (24.6)
	3.1 (8.1)	13.0 (14.8)
	2.8 (5.1)	17.7 (16.8)
	1.7 (4.4)	2.9 (6.6)
	0.7 (2.3)	2.8 (7.7)
	0.5 (0.5)	2.3 (5.5)
	1.3 (4.7)	2.6 (7.6)
	<1 centre	0.8 (3.6)
	0.1 (0.2)	10.3 (12.5)
	-	1.7 (7.3)
	-	1.1 (6.7)
	-	0.1 (0.34)
	-	0.7 (0.4)
	45.9 (-)	113.1 (67.8)

are now giving more time to cardiac rehabilitation programmes. Furthermore, additional types of health professionals are involved in the multidisciplinary team, such as smoking cessation officers, cardiac liaison nurses, diabetic nurses and health promotion tutors. Despite these additions, concerns over staffing levels remain and in particular centres have highlighted need for increased hours from psychologists and dieticians.

In phase III, all centres addressed a majority of core components as recommended by national and international guidelines. A minority of centres did not offer psychological advice or education on sexual and vocational rehabilitation in phase III and these issues were also less well addressed in phase I and phase II. The diagnosis of coronary heart disease has major psychological consequences<sup>11</sup> and evidence shows that patients can benefit from psychological intervention. A recent meta-analysis of psychoeducational programmes for coronary heart disease patients found a 34% reduction in cardiovascular mortality and 29% reduction in the recurrence of myocardial infarction.<sup>12</sup> Post-discharge issues were also less widely addressed both after the phase I period (where issues such as home needs

assessment and use of the Heart Manual were not widely addressed) and after the phase III programme (where only 26% of centres provided Phase IV intervention). As the aim of cardiac rehabilitation is to facilitate long-term life-style changes,<sup>13</sup> interventions dealing with the issues of long-term maintenance would be desirable. Notwithstanding this, the fact that all hospitals provided Phase I cardiac rehabilitation and 82% provided Phase II means that those patients not attending a phase III outpatient programme can benefit from cardiac rehabilitation intervention at during these earlier stages.

The rapid expansion in cardiac rehabilitation services is evident following a focused health service strategy in which cardiac rehabilitation was prioritised. This suggests that service provision of cardiac rehabilitation can benefit from collective efforts made across centres to encourage the prioritisation of cardiac rehabilitation in national health policy initiatives. The next challenge is to ensure optimum levels of service uptake among cardiac patients. A recent study estimating the total number of patients referred to and completing cardiac rehabilitation programmes in the UK in 2000<sup>14</sup> found that only 45-67% of patients were referred while just 27-41%



attended. The adoption of a standardised audit system would allow centres to track patient uptake of services and assess patient outcomes. Inability to provide figures by almost one in three centres on patient throughput suggests that administrative aspects of the cardiac rehabilitation services are currently underdeveloped. This underscores the importance of introducing a standardised audit system to facilitate routine data collection. The development of a standardised cardiac rehabilitation audit tool in Ireland is now at an advanced stage. This will facilitate an evidence-based continuous improvement approach to the provision of cardiac rehabilitation services in Ireland.

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