Physical Therapy Management for Adult Patients Undergoing Cardiac Surgery: A Canadian Practice Survey

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ABSTRACT

Purpose: To determine current Canadian physical therapy practice for adult patients requiring routine care following cardiac surgery.

Methods: A telephone survey was conducted of a selected sample ($n = 18$) of Canadian hospitals performing cardiac surgery to determine cardiorespiratory care, mobility, exercises, and education provided to patients undergoing cardiac surgery.

Results: An average of 21 cardiac surgeries per week (range: 6–42) were performed, with an average length of stay of 6.4 days (range: 4.0–10.6). Patients were seen preoperatively at 7 of 18 sites and on postoperative day 1 (POD-1) at 16 of 18 sites. On POD-1, 16 sites performed deep breathing and coughing, 7 used incentive spirometers, 13 did upper-extremity exercises, and 12 did lower-extremity exercises. Nine sites provided cardiorespiratory treatment on POD-3. On POD-1, patients were dangled at 17 sites and mobilized out of bed at 13. By POD-3, patients ambulated 50–120 m per session 2–5 times per day. Sternal precautions were variable, but the lifting limit was reported as ranging between 5 lb and 10 lb.

Conclusions: Canadian physical therapists reported the provision of cardiorespiratory treatment after POD-1. According to current available evidence, this level of care may be unnecessary for uncomplicated patients following cardiac surgery. In addition, some sites provide cardiorespiratory treatment techniques that are not supported by evidence in the literature. Further research is required.

Key Words: cardiac surgery, cardiorespiratory, clinical practice, physical therapy, survey

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RÉSUMÉ

Objectif : Établir en quoi consiste la pratique actuelle en physiothérapie au Canada pour les patients adultes qui ont besoin de soins intermédiaires à la suite d'une chirurgie cardiaque.

Méthodes : Un sondage téléphonique a été réalisé auprès d'un échantillon choisi d'hôpitaux canadiens ($n = 18$) afin de répertorier les soins cardiorespiratoires et pour la mobilité, les exercices et la réadaptation offerts aux patients qui subissent une chirurgie cardiaque.

Résultats : En moyenne, 21 chirurgies cardiaques par semaine (entre 6 et 42 interventions) ont été pratiquées dans les établissements sondés et ces interventions ont occasionné des séjours à l'hôpital d'une moyenne de 6,4 jours (de 4,0 à 10,6 jours par établissement). Les patients étaient vus de façon proactive dans 7 des 18 hôpitaux sondés et au premier jour de la période postopératoire (JPP-1) dans 16 des 18 hôpitaux. Au JPP-1, 16 établissements ont demandé au patient de prendre de grandes respirations et de tousser, 7 ont utilisé des spiromètres incitatifs, 13 ont procédé à des exercices des membres supérieurs et 12 à des exercices des membres inférieurs. Neuf sites ont offert des soins cardiorespiratoires au jour 3. Au jour 1, les patients étaient aidés à s'asseoir et à se redresser dans 17 hôpitaux, et mobilisés hors de leur lit dans 13 établissements. Au jour 3 après l'intervention, les patients marchaient de 50 à 120 m, de 2 à 5 fois par jour. Les mesures de précautions sternales variaient selon les cas, mais la limite de charge décrite se chiffrait à entre 2,27 et 4,54 kg (entre 5 et 10 lb).

Conclusions : Les physiothérapeutes canadiens font état de prestation de soins cardiorespiratoires après le JPP-1. Selon les données probantes actuellement disponibles, ce niveau de soins pourrait ne pas être nécessaire pour les patients sans complications après une chirurgie cardiaque. De plus, certains hôpitaux ont recours à des techniques de soins cardiorespiratoires qui ne sont pas appuyés sur des faits scientifiques documentés. Des recherches plus poussées sont nécessaires.

Mots clés : cardiorespiratoire, chirurgie cardiaque, physiothérapie, pratique clinique, sondage

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INTRODUCTION

The optimal perioperative physical therapy care for patients undergoing cardiac surgery is not well established. Historically, patients have been assessed by physical therapists preoperatively, then assessed again in the immediate postoperative period while still on mechanical ventilation.^{1,2} Treatment was initiated at that time and continued on the ward after the patient was extubated and transferred from the intensive care unit (ICU). Patients remained on active treatment, and education was provided prior to discharge to prepare patients for returning home. Numerous studies have challenged the need for this traditional protocol, arguing that it is not necessary for all patients and thus may not be the best use of physical therapy resources.^{1–11} Additionally, the effectiveness of certain traditional treatments—for example, incentive spirometry (IS)^{6,12,13} and deep breathing and coughing (DB&C)⁶—has not been supported by systematic or narrative reviews. Several other studies have suggested that there is no benefit to adding traditional breathing exercises to a program of mobilization, with or without coughing or huffing, in terms of patient outcomes following uncomplicated coronary artery bypass graft (CABG) surgery.^{2,4,10} Thus, the level and type of care provided by physical therapists to patients undergoing cardiac surgery require clarification.

The stimulus for this study was the planned amalgamation of cardiac surgery services at two hospitals and the lack of guidelines for physical therapy treatment in this population. Because there are no current systematic reviews on the optimal physical therapy care of patients undergoing cardiac surgery, we chose to start our investigation in this area by conducting a survey of practice across Canada. In the absence of any such “best” evidence from the literature, experts have suggested using lower grades of evidence.^{14,15} While clinical practice surveys do not provide “evidence” in the standard sense of the term, they can be useful for accurate description of practice patterns when based upon a representative sample of care providers. In the absence of evidence, it may be important for therapists to know whether their practice accords with the most common or standard practice in their field. The purpose of this study, therefore, was to determine current Canadian physical therapy practice for adult patients requiring routine care after undergoing CABG surgery and/or cardiac valve surgery.

METHODS

We conducted a telephone survey of physical therapy practice at selected Canadian hospital sites ($n = 18$) where cardiac surgery was performed. Six physical therapists designed survey questions for PTs who provide care for adult patients undergoing cardiac surgery and requir-

ing routine care. *Cardiac surgery* was defined as CABG surgery and/or cardiac valve surgery, both of which require a median sternotomy; minimally invasive direct coronary artery bypass surgery and robotic surgeries were not included. *Routine care* was defined as that provided to patients who follow the expected course of recovery (or clinical pathway) following cardiac surgery. General questions elicited descriptive information on surgical types and volumes, length of stay, staffing, and care pathways. Specific questions extracted information on frequency of physiotherapy assessment and treatment, including chest physiotherapy, mobilization protocols, range of motion (ROM) and strength exercises, and sternal precautions. Additional questions addressed discharge criteria and education, as well as stair assessments. Care provided to patients with significant perioperative complications (e.g., postoperative bleeding, stroke, postoperative arrest, renal failure, left ventricular failure, post-pump syndrome) was not addressed in the survey. The survey was initiated in March 2005; final data checking was completed in May 2006.

The hospital sites surveyed were located in most regions of Canada—British Columbia (1), Alberta (1), Saskatchewan (1), Manitoba (1), Ontario (11), Quebec (1), Nova Scotia (1), and Newfoundland and Labrador (1)—and included both teaching and non-teaching hospitals of varying sizes. The survey was pilot-tested with physical therapists at one centre to determine clarity of questions and ease of completion. Following revisions, we contacted the physical therapy professional practice leader (or equivalent designation) at each site to identify a physical therapist providing care to patients undergoing cardiac surgery. If a therapist was not available, the practice leader was asked to complete the survey. A cover letter explaining the project and a copy of the questions that would be asked were sent to each site in advance of the telephone interview. One of two physical therapists from our research team, both familiar with treatment of patients undergoing cardiac surgery, then arranged and carried out the phone interview with the identified respondent(s). The respondents were asked to respond on behalf of their facility, not as individuals.

Data from the survey were tabulated. Descriptive statistics (means, modes, medians, and ranges) were calculated for numeric data where applicable, and counts were made for categorical data.

RESULTS

Eighteen hospitals were invited to participate in the survey. Seventeen hospitals completed a telephone survey; one site provided written responses. All hospitals conducted both CABG and valve surgeries. Thirteen hospitals were teaching institutions. Support personnel (physical therapy assistants/aides) were involved in care

Table 1 Survey Sample—Descriptive Data

Characteristic	Mean	Range
Cardiac surgery beds (<i>n</i>)	31	10–65
Cardiac surgeons (<i>n</i>)	5	2–12
Surgeries/week (<i>n</i>)	21.1	6–42
LOS (days)	6.36	4–10.6
PT FTEs:bed (<i>n</i>)	1:17	1:7–1:26

LOS = length of stay; PT FTE = physiotherapy full-time equivalent

Table 2 Cardiorespiratory Assessment and Treatment on Postoperative Days 1–3

	POD-1 n (%)	POD-2 n (%)	POD-3 n (%)
CR assessment	16 (89)	14 (78) 3 (17) PRN	11 (61) 4 (22) PRN
CR treatment	16 (89)	14 (78) 3 (17) PRN	9 (50) 5 (28) PRN
DB&C	16 (89)	14 (78)	9 (50)
SMI	3 (17)	4 (22)	2 (11) PRN
IS	8 (44)	7 (39)	5 (28)
MT	2 (11)	4 (22)	1 (6)
	8 (44) PRN	4 (22) PRN	5 (28) PRN
Rx frequency*			
0	2 (11)	1 (6)	1 (6)
1	12 (67)	12 (67)	15 (83)
1–2	1 (6)	2 (11)	2 (11)
2	2 (11)	1 (6)	
PRN		2 (11)	

* Physical therapy treatment of any type, not only cardiorespiratory

CR = cardiorespiratory; DB&C = deep breathing and coughing; SMI = sustained maximal inspiration; IS = incentive spirometry; MT = manual techniques (manual pressures, expansion techniques, percussion); POD = postoperative day; PRN = as necessary; Rx = treatment

of this population at nine sites. Fourteen sites had a clinical pathway or care plan for patients undergoing cardiac surgery, and 12 sites had a specific physical therapy guideline or treatment protocol. An average of 21 cardiac surgeries per week (range: 6–42) were performed at the 18 sites. The mode value for length of stay was 6 days. Further descriptive information on the participating sites is found in Table 1.

Cardiorespiratory Physical Therapy*

Patients were seen preoperatively at 7 of the 18 sites. Patients were seen for assessment and treatment on the first postoperative day (POD-1) at 16 sites. Most sites (12/18) saw patients on one occasion on POD-1. The most common treatment (16/18 sites) was DB&C. Eight

Table 3 Mobilization on Postoperative Days 1–3

	POD-1 n (%)	POD-2 n (%)	POD-3 n (%)
Bed mobility only	1 (6)		
Dangle	17 (94)		
Sit to stand	2 (11)		
Up to chair	9 (50)		
Ambulate in room	4 (22)	3 (17)	
Ambulate in hall	1 (6)	9 (50)	7 (39)
Ambulate unknown distance		6 (33)	11 (61)
Ambulation frequency (range)	1–2×	2–5×	3–5×

POD = postoperative day

sites reported the use of incentive spirometers on POD-1, and 12 sites provided education around self-treatments (DB&C, bed exercises) and treatment progression. Nine sites continued to provide cardiorespiratory treatment on POD-3. Further information on cardiorespiratory assessment and treatment patterns over the first 3 postoperative days is provided in Table 2.

Mobility

There was wide variation in mobility treatment as a result of staffing constraints, surgeons' preferences (e.g., gait aids), usual care, and nursing practice. Table 3 provides information on mobilization programs on POD-1 through POD-3. Patients were seated on the edge of the bed ("dangled") at 17 sites and mobilized out of bed at 13 sites. Patients were ambulated in the hall in only a single hospital on POD-1 but in 15 on POD-2 and in 18 by POD-3. All sites reported that patients were ambulated 50–120 m per session, three to five times per day. Responsibility for mobilization was generally shared between physical therapists and nurses; at five sites, nurses took on the primary role if there were no mobility issues. Physical therapists reported being more involved with complex patients.

Stair assessments were inconsistent. Four sites reported assessing all patients on stairs before discharge; six sites assessed patients only if stairs were present in the patient's home, while seven sites assessed patients if there were mobility concerns (new or previous gait aid, balance deficit, etc.). Stair assessments were conducted by either physical therapists or nurses.

Upper- and Lower-Extremity Exercise

On POD-1, shoulder ROM was assessed at 13 sites. This number decreased to five on POD-2 and then to four on POD-3. Eight sites reported performing upper-extremity exercise (e.g., ROM) as a component of their treatment on POD-1. On POD-2 and POD-3, 10 sites included upper-extremity exercise in their treatment.

* We have presented the practice data in the sections in which it was collected in the survey. We acknowledge that "cardiorespiratory physical therapy" should be considered as a holistic approach, including breathing exercises, mobility, exercise, and education.

Table 4 Sternal Precautions and Lifting Restrictions

<i>Precaution</i>	<i>Sites n (%)</i>
Unsupported coughing	16 (89)
Unilateral UE ROM	3 (17)
Bilateral UE ROM	8 (44)
Pushing up from sitting	14 (78)
WB through UE for bed mobility	8 (44) 3 (17) discouraged
Lifting restrictions: Weight	
5 lb	3 (17)
5–10 lb	4 (22)
10 lb	11 (61)
Lifting restrictions: Duration	
4–6 weeks	2 (11)
6–8 weeks	10 (56)
6–10 weeks	1 (6)

ROM = range of motion; UE = upper extremity; WB = weight bearing

On POD-1, lower-extremity exercises (e.g., foot and ankle exercises, ROM) were conducted at 12 hospitals. Twelve sites continued to do specific lower-extremity exercise on POD-2, but only four sites continued to do so by POD-3.

Sternal Precautions

Sternal precautions and restrictions varied across our survey sample. Eight sites reported a full restriction of bilateral shoulder exercises, while three sites reported restricted unilateral upper-extremity ROM exercises. Ten sites noted restricted pushing up from a sitting position, and restricted bed mobility was reported at eight sites. The maximal weight restriction for upper-extremity lifting varied from 5 lb (3 sites) to 10 lb (15 sites). Sixteen sites reported unsupported coughing as a sternal precaution. One site did not allow the use of any gait aid in the postoperative period, while three sites restricted the use of standard walkers but did allow wheeled walkers or rollators. Fourteen sites reported either having no gait-aid precautions or using clinical judgment in making such decisions. Table 4 presents further information on sternal precautions and restrictions following cardiac surgery.

Education/Discharge Teaching

All sites used audiovisual aids, including videotapes, printed materials, and Web sites, to inform patients, and information was also presented in a class format at 11 sites. Twelve sites provided education on POD-1. Topics included how to perform the various treatment techniques (primarily DB&C), pain control, post-surgical precautions, and treatment progression. On subsequent days, there was an increased educational focus on sternal precautions and mobilizing. Discharge teaching was initiated by POD-3 at 12 sites and by POD-4 at 1

site; other sites did not provide discharge information. Walking programs were the most frequently reported (11 sites) components of discharge teaching, which also included upper- and lower-extremity exercises and stretching, discussion of cardiac rehab, sternal precautions, activity guidelines, and energy conservation.

DISCUSSION

The clinical practice survey described above provided information on practice patterns of Canadian physical therapists working with routine patients undergoing cardiac surgery. Only 40% of hospitals surveyed reported seeing patients preoperatively, but 90% of hospitals assess and treat patients on the first postoperative day. These numbers diminish to 60% (assessment) and 50% (treatment) by the third postoperative day, suggesting that clinical judgments are being made with respect to the need for physical therapy intervention. Treatment on POD-1 consists primarily of DB&C (90%) and a bedside dangle (94%); education is also provided (67%). Incentive spirometry, a treatment technique not supported by current evidence,^{6,13} continues to be used at nearly half of Canadian sites surveyed.

Further along in the postoperative stay, assessment and treatment for pulmonary concerns diminish and mobilization and education become more prevalent. However, there is little consensus around postoperative sternal precautions. Stair assessments are carried out routinely by fewer than half of the hospitals surveyed.

Previous surveys on physical therapy practice in the cardiac surgery population have been carried out in Australia and New Zealand¹⁶ and in the United Kingdom.¹⁷ The surveys varied in methods, detail, and complexity, but did collect some common information on assessment and treatment. Using a mailed questionnaire, Tucker et al. surveyed senior physiotherapists working with coronary artery surgery patients in 23 public hospitals (22 responses) and 19 private hospitals (13 responses) in Australia and New Zealand; data were gathered in 1995.¹⁶ Similarly, Reeve and Ewan mailed a questionnaire to the senior physiotherapist in each of the 52 cardiothoracic units in the United Kingdom, receiving 40 responses in total; their data collection was completed by 2000.¹⁷ Our telephone survey involved 18 hospitals that conduct cardiac surgery; we asked a designated physical therapist in each hospital to reply on the basis of practice at that hospital. Our data were gathered in 2005–2006. Thus, the three surveys provide a snapshot of practice in this patient population across 3 regions over a period of 12 years.

The main results of the three surveys are summarized in Table 5. The comparisons are interesting, both among the countries and across time, but it is acknowledged that these two factors may be confounding. Length of stay was quite consistent, ranging from 5 to 10 days in

Table 5 Comparison of Three Practice Surveys for Patients Undergoing Cardiac Surgery

<i>Study</i>	<i>Tucker et al.</i> ¹⁶	<i>Reeve & Ewan.</i> ¹⁷	<i>Overend et al.</i>
Location	Australia and New Zealand	United Kingdom	Canada
Year survey completed	1995	2000	2006
Sample size	35 hospitals (22 public, 13 private)	40 hospitals (1/3 private)	18 (all public)
Mean number of surgeries/week	14 (range: 1–38)	Not collected	21 (range: 6–42)
Length of stay (days)	5–10 (private, 8–10; public, 5–7)	4–7	4–10.6 (mean: 6.4)
Frequency of treatment (per day)	1–6 (median: 1.7)	1–3 (mode: 2)	0–3 (mode: 1)
Duration of PT treatment (days)	2–9.5 (median: 5.3)	2–7	Not collected
Assessed by PT preoperatively (%)	94—assessed non-emergent patients	58—saw all patients 35—saw only some 7—did not see	39
Assessed by PT postoperatively (%)	63—saw patients while intubated 89—saw patients post extubation	20—saw patients while intubated 95—saw patients post extubation	100 (not separated into intubation/extubation)
Rx by PT postoperatively (%)	89 (on surgical ward)	55	100
Deep breathing (%)	98*	65	100 (17/17)**
Incentive spirometry (%)	63*	33	50
Sustained maximal inspiration (%)	75*	55	22
Cough (%)	100*	83	100 (17/17)**
Huff (%)	60*	Not collected	44
Positioning (%)	98*	93	6***
UE exercises (%)	98*	83	89
LE exercises (%)	83*	70	89
Ambulation (%)	98*	93	100
Stair assessment (%)	86*	90	94* (routinely, or if patient had stairs at home, or if patient had mobility concern)
Discharge teaching (%)	100*	85	100

Rx = treatment; UE = upper extremity; LE = lower extremity

* Includes intervention also done by nursing staff.

** One site did not provide any specific information on deep breathing or coughing.

*** We did not ask specifically about positioning in our survey.

1995,¹⁶ from 4 to 7 days in 2005,¹⁷ and from 4 to 11 days in our study. In the study by Tucker et al., 94% of patients scheduled for CABG surgery in Australia and New Zealand were seen preoperatively;¹⁶ 58% were seen in the study by Reeve and Ewan (in the United Kingdom),¹⁷ and we report 39% from our survey. It is not clear whether this apparent decline reflects practice patterns in each country, the change of practice associated with the passage of time, or both. Post surgery, patients were seen a median of 1.7 times per day in Tucker et al.'s survey,¹⁶ a mode of twice per day in the survey by Reeve and Ewan,¹⁷ and a mode of once per day in our survey.

Despite a lack of evidence for the benefits of incentive spirometry in this patient population,^{6,13} Tucker et al. reported its use by 63% of hospitals in their survey,¹⁶ while Reeve and Ewan reported its use at 33% of sites¹⁷ and our survey found 50%. Surveys on the specific use of incentive spirometry in the United Kingdom indicated usage rates of 44% in 1986¹⁸ and 71% in 1998.¹⁹ Sus-

tained maximal inspirations are used more frequently in New Zealand and Australia (75%)¹⁶ than in the United Kingdom (55%)¹⁷ or in Canada (22%). Deep breathing and coughing were used in the vast majority of hospitals in all three studies, as were both upper- and lower-extremity exercises. Ambulation, stair assessments prior to discharge, and discharge teaching were each used by more than 85% of hospitals in all studies.

Tucker et al. made two interesting points in their discussion: first, that “in the majority of centres, treatment of patients following CAS [coronary artery surgery] may be more comprehensive than is justified by the findings of clinical research,”^{16(p.135)} and, second, that “physiotherapists are reluctant to change current practice based on research findings.”^{16(p.136)} Reeve and Ewan also concluded that many physiotherapists are reluctant to change practice based on the available evidence on treatment techniques in this patient population.¹⁷ While no systematic review has yet been conducted on all aspects of the routine physical therapy management

of patients undergoing cardiac surgery, evidence has emerged to suggest that use of at least some traditional treatment techniques and practices should be reconsidered.^{1–4,6,7,10,13,20} Patman et al.'s study showed no difference in outcome between patients treated during the postoperative intubation period and those treated only after extubation. In another randomized trial, Brasher et al.² reported that removing breathing exercises from the routine treatment of patients undergoing cardiac surgery did not affect patient outcomes. In a study of patients following cardiac valve surgery, de Charmoy and Eales³ compared preoperative and postoperative prophylactic chest physiotherapy against instructions to cough post surgery and get out of bed on POD-2; no difference in outcome was detected. Jenkins et al.⁴ concluded that adding breathing exercises or IS to early mobilization and huffing/coughing conferred no benefit after uncomplicated CABG surgery. Pasquina et al.⁶ systematically reviewed 18 trials of prophylactic physiotherapy following cardiac surgery and concluded that the usefulness of such treatment remains unproven. Stiller et al.¹⁰ reported that patients receiving no preoperative or postoperative chest physiotherapy had no difference in postoperative pulmonary complications and suggested a review of the necessity for prophylactic chest physiotherapy after routine CABG surgery. Finally, in a small study ($n = 9$) of healthy subjects, Parker et al. suggested that the current post-surgery sternal precaution recommendation to “not lift anything weighing more than 5 lbs”^{20(p.193)} may be too restrictive, as lifting even 40 lb generates less force on the median sternotomy incision than is generated by a cough. Since our survey indicates that current Canadian practice is similar in key respects to that in countries where traditional practice has been questioned, we would conclude the same: we may be over-treating the routine patient following cardiac surgery, and reluctance to change may be a factor in perpetuating this practice.

Our study had the following limitations. First, two investigators carried out the interviews. We conducted phone interviews because we felt we would receive better-quality information if respondents were able to ask questions for clarification. Although our two survey administrators were involved in developing the survey and were trained together in asking the questions and conducting the pilot study, they may not have elicited exactly the same level or depth of information from their respective respondents. Second, we do not know how well the information provided represented the practice of all physiotherapists at each hospital; although the designated respondent was asked to reply on that basis, we acknowledge that it is difficult to know how all of one's colleagues practice, unless there is a firm practice guideline in place to which all therapists adhere. On this point, we note that 12 sites did have a specific physical therapy guideline or treatment protocol. Third, the sur-

vey results represent “reported practice” and hence may not accurately reflect actual practice. The designated respondent may have described interventions that were not in fact carried out and may have mistakenly omitted treatment routines or described them inaccurately. Fourth, we surveyed 18 hospitals; although distributed geographically across most of Canada (11 of 18 sites were in Ontario), our results may not reflect practice in all hospitals that perform cardiac surgery.

It is important to note that these survey data reflect a sample of current practice in Canada and may not represent the ideal care of this patient population. Research is required to provide evidence to clarify practice in the numerous areas where there is substantial variability in the care provided. In our study, these areas included treatment frequency, use of specific treatment techniques, mobilization on POD-1, and sternal precautions or lifting restrictions. A systematic review of the physical therapy management of patients undergoing cardiac surgery is required to address this variability. Such a systematic review would provide evidence for clinical practice guidelines, which would be particularly valuable in areas where our survey has revealed inconsistencies in practice. However, the effectiveness of these interventions in addition to standardization of the perioperative interventions needs to be determined in order to recommend optimal care. In summary, Canadian physical therapists reported providing cardiorespiratory treatment after POD-1 that may be unnecessary for uncomplicated patients following cardiac surgery, according to current available evidence. In addition, some sites provide cardiorespiratory treatment techniques whose effectiveness is not supported by evidence in the literature. Our study provides useful information against which Canadian physical therapists working with patients undergoing cardiac surgery can benchmark their own practice.

KEY MESSAGES

What Is Already Known on This Subject

The optimal perioperative physiotherapy treatment for patients following cardiac surgery is not well established. Recent studies have challenged traditional treatment protocols, suggesting that uncomplicated patients require less treatment than is currently provided. These challenges have implications for physiotherapy practice.

What This Study Adds

Canadian physical therapists provided information on current practice patterns for the postoperative care of patients following cardiac surgery. Cardiorespiratory physiotherapy was frequently provided after the first postoperative day. According to current available evidence, this level of care may be unnecessary for uncomplicated patients.

plicated patients following cardiac surgery. In addition, some sites provide cardiorespiratory treatment techniques that are not supported by evidence in the literature. Canadian physical therapists can benchmark their practice against the results of this survey.

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