

HEALTH  
PROFESSIONS  
COUNCIL \_\_\_\_\_

RECOMMENDATIONS  
ON THE DESIGNATION  
OF CARDIOLOGY  
TECHNOLOGY

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Application by the  
Cardiology Technologists Association of BC

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## FOREWORD

This report is in response to an application by the Cardiology Technologists Association of BC for designation under the *Health Professions Act*, RSBC 1996, c. 183. Under the *Health Professions Act*, the Health Professions Council is a six-person advisory body appointed by the Government of British Columbia to make recommendations to the Minister of Health Planning about the regulation of health professions. This report is the result of an investigation of the profession of cardiology technology by a three-member panel of the Health Professions Council.

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## EXECUTIVE SUMMARY

In its review of the application for designation of cardiology technology, the Health Professions Council (Council) applied the Public Interest Criteria as directed by the *Health Professions Act (HPA)*. The Council reviewed the information provided by the applicant and information gathered during the research, written consultation and public hearing phases of its investigation.

The Council first determined that the practice of cardiology technology meets the definition of "*health profession*" set out in the *HPA*.

The Council then reviewed the services provided by cardiology technologists in light of the risk of harm criteria in Section 5(1) of the *Health Professions Regulation (HPA Regulation)*. After reviewing the services performed, equipment used and the current system of regulation and supervision, the Council determined that there was a risk of harm associated with the practice of cardiology technology which warrants designation as a health profession under the *HPA*.

Next, the Council considered the criteria listed in section 5(2) of the *HPA Regulation*. The Council found that these criteria support the designation of the profession of cardiology technology under the *HPA*.

Therefore, the Council makes the following recommendation to the Minister of Health Planning:

1. that the practice of cardiology technology be designated under the *Health Professions Act*;
2. that the following scope of practice statement be granted to members of the College of Cardiology Technologists:

Cardiology technology is the provision of non-invasive cardiac and cardiovascular testing, preliminary data analysis and assessment to provide accurate reporting of test results for use by other health care practitioners in the diagnosis, treatment and prevention of cardiac disease;

3. that members of the College of Cardiology Technologists be granted the following reserved act to perform only if ordered by a health practitioner who is authorized by legislation to perform the act:

7(b) cardiac stress testing conducted for medical diagnosis and treatment planning;

4. that the title "Cardiology Technologist" be reserved for the exclusive use of registrants of the College of Cardiology Technologists; and
5. that the college established for cardiology technology be named the "College of Cardiology Technologists".

# RECOMMENDATIONS ON THE DESIGNATION OF CARDIOLOGY TECHNOLOGY

## I. GENERAL BACKGROUND

There are currently no provinces that recognize the practice of cardiology technology (CT) as a regulated health profession.

In specific conversations with representatives of various provincial ministries the Council learned that CT is not regulated in Ontario, Alberta or Manitoba. In Nova Scotia, the representative of Nova Scotia Health indicates that standards of practice for cardiology technologists are likely established by the institutional settings where they work.

The applicant, Cardiology Technologists Association of BC (CTABC or the applicant), is incorporated under the *Society Act*, RSBC 1996, c. 433, and has represented the profession for 25 years, 24 of those as an independent society. The applicant association has a code of ethics and a registrar. The registrar receives and investigates complaints and maintains records of continuing education credits.

The applicant estimated that there were 535 cardiology technologists (CTs) in BC. Of these, approximately 67 per cent work in institutional settings, 20 per cent work in clinical laboratories, and 9 per cent work in doctors' offices or private cardiac laboratories. There are currently 370 members of CTABC. Membership is voluntary and, under the *Society Act*, members have exclusive use of the titles registered cardiology technologist, registered cardiology technician, and RCT.

There are different levels of membership in CTABC. Criteria for registered membership is graduation from the BC Institute of Technology (BCIT) program or completion of 2 years of cardiology training, 1 year enrolment in the Canadian Society of Cardiology Technology (CSCT) home study course and successful completion of a registration exam. An advanced registered member has had 1 year of registered membership and has passed advanced exams. An associate member has not passed the CSCT exams. These three are the practising membership categories. Other classes of membership include charter member, life member, inactive member and business member.

## **II. APPLICATION AND PROCESS OF INVESTIGATION**

This investigation was undertaken because CTABC submitted an application for designation of CT as a self-regulating health profession under the *HPA*. The application was received on May 27, 1994. A revised application was submitted on April 20, 1999.

The Council conducted a written consultation process with various health professions, regulatory bodies, and other provinces. Responses to the consultation letter are summarized in Appendix A. A public hearing was held on February 9, 2000. A list of public hearing participants is included as Appendix B.

The Council met with representatives of the applicant association on April 13, 1999 and subsequently made a site visit to the cardiology laboratory at Vancouver General Hospital and a private cardiology laboratory on April 22, 1999.



### III. STATEMENT OF ISSUES

In accordance with the requirements of the *HPA*, the Council identified three issues involving the regulation of the practice of CT. In assessing the public interest in the regulation of this profession, the Council considered:

- (1) whether the practice of cardiology technology meets the definition of “*health profession*” in section 1 of the *HPA*;
- (2) the extent to which the practice of cardiology technology may involve a risk of physical, mental or emotional harm to the health, safety, or well-being of the public according to section 5(1) of the *HPA Regulation*; and
- (3) whether designation of a college of cardiology technology would be in the public interest having regard to the criteria of sections 5(1) and 5(2) of the *HPA Regulation*.

## IV. RECOMMENDATIONS

The Council makes the following recommendations to the Minister of Health Planning:

1. that the practice of cardiology technology be designated under the *Health Professions Act*;
2. that the following scope of practice statement be granted to members of the College of Cardiology Technologists:

Cardiology technology is the provision of non-invasive cardiac and cardiovascular testing, preliminary data analysis and assessment to provide accurate reporting of test results for use by other health care practitioners in the diagnosis, treatment and prevention of cardiac disease;

3. that members of the College of Cardiology Technologists be granted the following reserved act to perform only if ordered by a health practitioner who is authorized by legislation to perform the act:

7(b) cardiac stress testing conducted for medical diagnosis and treatment planning;

4. that the title "Cardiology Technologist" be reserved for the exclusive use of registrants of the College of Cardiology Technologists; and
5. that the college established for cardiology technology be named the "College of Cardiology Technologists".

## V. RATIONALE FOR RECOMMENDATIONS

### A. DESIGNATION, SCOPE OF PRACTICE AND RESERVED ACTS

In order to proceed under section 10 of the *HPA* to recommend the designation of CT, the Council must first determine that the applicant's profession comes within the definition of "*health profession*" as set out in section 1 of the *HPA*. If the Council concludes that the profession is a "*health profession*" as set out in the *HPA*, then the Council must consider whether designation is in the public interest pursuant to section 5 of the *HPA Regulation*.

#### 1. Definition of "Health Profession"

Section 1 of the *HPA* defines a "*health profession*" as:

*. . . a profession in which a person exercises skill or judgment or provides a service related to*

- (a) the preservation or improvement of the health of individuals, or*
- (b) the treatment or care of individuals who are injured, sick, disabled or infirm.*

Clearly, this is an extremely broad definition which encompasses many health-related services.

A review of the application and research conducted by the Council indicates that CTs perform electrocardiograms (ECG or EKG) and operate other electronic equipment to record cardiac activity of patients to aid in the diagnosis and treatment of heart disease. The applicant states that CTs perform some or all of the following duties:

- (a) operate electrocardiogram and other electronic equipment to record cardiac activity of patients;*
- (b) prepare patients for cardiology procedures and tests, such as electrocardiograph tests, ambulatory monitoring, exercise stress testing and pacemaker analysis;*
- (c) monitor cardiac activity and record results;*
- (d) prepare reports for interpretation by cardiologists;*

- (e) *reprogram pacemakers according to required standards; and*
- (f) *check cardiology equipment to ensure proper operation.*

In the Council's view, a high level of skill and judgment is required to perform these services provided to persons who are undergoing critical medical procedures. The Council is satisfied that the profession of CT meets the definition of "*health profession*" set out in the *HPA*.

## **2. Public Interest Criteria**

When examining an application for designation the Council considers the public interest criteria set out in section 5(1) and (2) of the *HPA Regulation*. The section 5(1) criteria relate to risk of harm and must be considered by the Council while the section 5(2) criteria are discretionary and may be considered by the Council.

### **a) Introduction to the Application Process**

Prior to analysis of the CT application and the Public Interest Criteria, the Council will discuss general concepts relevant to reviewing an application for designation, including scope of practice statements, "*exclusive scope of practice*", and reserved acts.

The Public Interest Criteria contained in s 5(1) of the *HPA Regulation* provide the context in which the Council will analyze the risk of harm in the applicants' practice. While the Council may also consider the s.5(2) criteria in making its designation decision, these criteria do not address risk of harm.

Section 5 of the *HPA Regulation* states:

*5.(1) For the purposes of s.10(1) of the Act, the Council must consider the extent to which the practice of a health profession may involve a risk of physical, mental or emotional harm to the health, safety or well being of the public, having regard to*

- (a) *the services performed by practitioners of the health profession,*
- (b) *the technology, including instruments and materials, used by practitioners,*
- (c) *the invasiveness of the procedure or mode of treatment used by practitioners, and*
- (d) *the degree to which the health profession is*

- (i) practised under the supervision of another person who is qualified to practise as a member of a different health profession, or*
- (ii) practised in a currently regulated environment.*

*(2) The council may also consider the following criteria:*

- (a) the extent to which the health profession has demonstrated that there is a public interest in ensuring the availability of regulated services provided by the health profession;*
- (b) the extent to which the services of the health profession provide a recognized and demonstrated benefit to the health, safety or well being of the public;*
- (c) the extent to which there exists a body of knowledge that forms the basis of the standards of practice of the health profession;*
- (d) whether members of the profession are awarded a certificate or degree from a recognized post-secondary educational institution;*
- (e) whether it is important that continuing competence of the practitioner be monitored;*
- (f) the extent to which there exists within the health profession recognized leadership which has expressed a commitment to regulate the profession in the public interest;*
- (g) the likelihood that a college established under the Act would be capable of carrying out the duties imposed by the Act, having regard to factors which in the view of the council may affect the viable operation of the college;*
- (h) whether designation of the health profession is likely to limit the availability of services contrary to the public interest.*

If the Council decides that the profession should be designated, the Council will determine an appropriate scope of practice statement for the profession. The Council's 1994 *Terms of Reference* for the review of scopes of practice of regulated health professions direct the Council to define scopes of practice and to encourage shared scopes of practice among qualified health practitioners. These same principles apply to the Council's mandate to define scopes of practice for health professions for which designation is recommended. The term "*exclusive scope of practice*" is no longer used.

The Council will next determine which aspects of the scope of practice have been shown to present a significant risk of harm. These will be defined as reserved acts, as directed in s.10(3)(b)(v) of the *HPA* and the Council's *Terms of Reference*, and they may be shared with other regulated health professions whose members are qualified to perform such acts. Any other aspects of the scope of practice of a health profession are considered to be capable of being shared with other health practitioners and the general public.

There is a distinction between analyzing risk of harm for the purposes of s.5(1) and for reserved acts. The s.5(1) analysis is broadly based and looks at the extent of the risk of physical, mental or emotional harm to the health, safety or well being of the public in the practice of the profession. This analysis looks generally at the services performed by practitioners, the technology used, the invasiveness of procedures or treatments and the degree of regulation or supervision of practitioners, as directed in s.5(1)(a), (b), (c) and (d). The Council will determine whether the profession should be designated on the basis of this analysis together with the analysis of the criteria contained in s.5(2) of the *HPA Regulation*.

After it is determined that the profession should be designated, a more narrowly focused risk of harm analysis is conducted to determine whether the health profession will be granted one or more reserved acts. The Council emphasizes that it is not necessary for a health profession to be granted any reserved acts in order to be designated. However, once the decision to designate is made, the Council will look at whether there are acts or activities within the profession's scope of practice which present such a significant risk of harm that they must be designated reserved acts, as directed in s.10(3)(b)(v) of the *HPA*. In *Safe Choices: A New Model for Regulating Health Professions in British Columbia* (the *Safe Choices Report*) issued by the Council in March 2001, reserved acts have been restricted primarily to physical acts which carry a significant risk of harm.

These distinctions between the two risk of harm analyses are valid and important; however, they are often misunderstood by applicants. Additionally, there is significant overlap between the two, particularly when discussing the services performed by practitioners, the technology utilized and invasiveness of procedures employed. In the following analysis of CT practice, the Council looks generally at the services performed by CTs in order to analyze the risk of harm for purposes of designation, using the s.5(1) criteria. When discussing the areas of services performed, technologies employed or invasive procedures, the Council will discuss the general risk of harm for purposes of the s.5(1) analysis. In the Reserved Acts section of this report, the Council will specifically address whether any acts or activities present the significant risk of harm required of a reserved act, as directed under s.10(3)(b)(v) of the *HPA* and the Council's *Terms of Reference*.

The Council's *Safe Choices Report* will form the basis of the reserved act analysis. Where an act or activity is currently listed as a reserved act, the Council will determine whether

members of the applicant profession are trained and qualified to perform such act. Where the applicant requests a reserved act not included on the current reserved act list incorporated in the *Safe Choices Report*, the Council will conduct a risk of harm analysis to determine if a new reserved act is warranted or a current reserved act should be expanded or adapted.

**b) Section 5(1) Risk of Harm Criteria**

In the following pages the Council analyzes and applies the 5.(1) risk of harm criteria with respect to the information provided by the applicant.

**(1) Section 5(1)(a): The services performed by practitioners of the health profession**

Cardiology technologists provide diagnostic cardiovascular testing, including electrocardiograms, exercise tolerance testing with or without the use of radio-nuclear isotopes, drug-assisted exercise tolerance testing for patients who cannot achieve a target heart rate through exercise, ambulatory cardiac monitoring, and cardiac pacemaker programming. In all of these tests or procedures, the cardiology technologist must be able to recognize abnormal cardiac rhythm and other signs and symptoms of cardiac inadequacy or distress in order to respond to a potentially life threatening situation. The cardiology technologist performs diagnostic testing for persons whose health is, or may be, compromised as this is the indication for which they are being tested. The type of exercise tolerance testing performed by the cardiology technologist is for medical diagnostic and treatment purposes, as opposed to fitness exercise tolerance testing.

The applicant submitted documentation which indicated that the cardiology technologist scans computer-generated ambulatory electrocardiograms (Holter monitor) over a 24 hour period and edits the printout to select pertinent parts for the physician to analyze and interpret. The cardiology technologist must be experienced in electrocardiogram interpretation and know the clinical significance of the common cardiac arrhythmias.

The applicant discussed the inherent risks in CT practice:

*RCTs perform a wide range of tests and procedures that involve the heart. In particular, hearts which are diseased or damaged are more likely to fail during these procedures, therefore, such work entails an inherent risk to the patient. The RCT must be able to identify a range of potential problems and, if necessary, take corrective action and/or bring the matter to the immediate attention of a physician or other health care practitioners.*

The applicant discussed other specific risks:

*A number of the procedures could result in considerable harm to the patient if they are performed in an incompetent, unethical or impaired manner. Examples are as follows:*

- *If the RCT conducting an exercise test is unable to recognize the significance of clinical signs and/or electrocardiographic changes in the patient's heart function, the patient could experience cardiac damage or death.*
- *If the RCT fails to identify an impending cardio-pulmonary emergency, or is not trained in the appropriate responses to such situation, the patient could die during the procedure.*
- *If a RCT analyzing an ambulatory ECG recording (Holter monitor), fails to recognize significant electrocardiographic changes and does not notify the physician promptly, the patient may be placed at risk.*
- *If a malfunction in equipment or a faulty electrode is not correctly identified, it may produce inaccurate test results which could hinder the correct diagnosis.*

Dr. Rupka, responding at the request of the Diagnostic Accreditation Program (DAP) of the College of Physicians and Surgeons of BC (CPSBC), submits that:

*there is indeed sufficient risk of harm to the public in all of the areas, i.e., pacemaker interrogation, implantation testing, exercise tolerance testing and exercise testing associated with nuclear scans.*

**(2) Section 5(1)(b): The technology, including instruments and materials, used by practitioners**

The cardiology technologist works with a range of highly technical equipment which must be correctly utilized to achieve accurate results. The cardiology technologist applies lead wires and electrodes (sensors) for electrocardiograms, monitors cardiac activity by use of computer assisted monitors and video display terminals, monitors blood pressure, calculates right and left heart pressures on a computerized hemodynamic monitor, and programs pacemakers according to individual patient requirements and manufacturer specifications. The cardiology technologist must be familiar with the function and capabilities of various types of pacemakers and other equipment to determine if equipment is operating to expected capabilities.

**(3) Section 5(1)(c): The invasiveness of the procedure or mode of treatment used by practitioners**



As part of exercise tolerance testing medications or substances such as oral nitroglycerine, oxygen by inhalation, dobutamine or persantine are frequently administered by a cardiology technologist. This may occur through delegation from a physician or under the supervision of a physician. Radionuclear isotopes are injected by others, usually Nuclear Medicine Technologists. The cardiology technologist may also assist a physician who places leads into the esophagus or the pericardial sac. The cardiology technologist also monitors placement of leads during pacemaker implantation by a physician.

- (4) Section 5(1)(d): The degree to which the health profession is**
- (i) practised under the supervision of another person who is qualified to practise as a member of a different health profession**

With regard to specific tests, the applicant indicated that supervision varies and stated:

*A qualified physician in that discipline usually provides supervision during any test, where immediate risk to the patient is involved. The Physicians are usually Cardiologists or Internists with a specialty in cardiology. Dependent on the facility, Stress testing is usually performed with a physician present within the room or available in a 5 minute response time.*

*Electrocardiograms and Holter (Ambulatory ECG) scanning are performed without supervision.*

*Dependent on the facility and specific RCTs, pacemaker programming, threshold testing and interrogation are performed with a qualified physician in the immediate area.*

Dr. Rupka indicated that the performance of services by CTs should always be under the direction of adequately qualified physicians.

The applicant provided information which indicates that the cardiology technologist may work as part of a team or may work independently, however CT practice generally is not directly supervised by any other health care practitioner. The physician refers the patient for diagnostic testing and orders specific tests, some of which, the cardiology technologist performs independently.

In the Council's view, while physicians are responsible for ordering diagnostic testing and for emergency response, and although most CTs practice in a hospital or clinic setting, they function as independent practitioners in a health care team environment. There are certain advanced specialty areas which may be performed under supervision or delegation

following health care facility procedures. These will be discussed in the Reserved Acts section of this report.

**(ii) The degree to which the health profession is practised in a currently regulated environment**

Most CT practice occurs within a regulated institutional environment, either a hospital or clinical laboratory. However, the practice of the individual health professionals who work within those institutions may not be regulated. In the Council's view, institutional or administrative structure cannot generally be relied upon to regulate professional practice and standards. Although a cardiology technologist may be practising within an institution, the administrative structure of that institution does not exist to supervise the professional practice of independent health professional practitioners working within that structure. A health care professional can only be supervised in his or her practice by another qualified health care professional.

**(5) Section 5(1) Conclusion**

Having regard to the services performed and all the section 5(1) criteria, the Council has concluded that there is sufficient risk of harm in the practice of CT such that the profession should be designated under the *HPA*. The cardiology technologist performs cardiac diagnostic testing, preliminary analysis, and pacemaker programming. Some of these functions are performed independently. Often these services are provided for patients whose health is significantly compromised. CTs are responsible for exercising professional judgment based upon their education and training. If the services performed by CTs are not provided competently, there is risk of harm to the public.

**c) Section 5(2): Other Criteria**

**(1) s.5(2)(a): The extent to which the health profession has demonstrated that there is a public interest in ensuring the availability of regulated services provided by the health profession**

The applicant did not include materials specifically demonstrating a public interest in ensuring the availability of regulated services provided by CTs. CT services are well established and the public has access to cardiology testing services throughout the province.

**(2) s.5(2)(b): The extent to which the services of the health profession provide a recognized and demonstrated benefit to the health, safety or well being of the public**

In the Council's view, it is clear that diagnostic cardiac and cardiovascular testing services provide a recognized and demonstrated benefit to the health, safety and well-being of the public. In addition to diagnostic testing services, the applicant states that CTs help to preserve and improve the health of individuals by advancing public awareness of the importance of "*healthy hearts*" and quality cardiac care services through demonstrations, advertisements and other published information.

**(3) s.5(2)(c): The extent to which there exists a body of knowledge that forms the basis of the standards of practice of the health profession**

The BC Institute of Technology (BCIT) commenced a two-year credit course in CT in September 1992, the first such credit course to be established in Canada.

The BCIT program combines on site lecture, lab and class projects as well as clinical experience in designated hospitals. Studies in biomedical electronics, physical sciences, mathematics, human physiology, and cardiology ensure graduates have a strong background in non-invasive electrocardiography. In addition, the BCIT program states that courses specific to human behaviour and patient care ensure students develop the skills necessary to function in the health care environment.

During its investigation the Council learned that the BCIT program has been approved for inclusion in the Canadian Medical Association's Conjoint Accreditation Process. The accreditation process will be underway in 2001.

**(4) s.5(2)(d): Whether members of the profession are awarded a certificate or degree from a recognized post-secondary educational institution**

Graduates of the BCIT program are trained to perform non-invasive cardiology technology procedures and receive a diploma of cardiology technology. They are then eligible to write the Canadian Society of Cardiology Technologists registration examination to enter the job market as CTs.

**(5) s.5(2)(e): Whether it is important that continuing competence of the practitioner be monitored**

In the Council's view, monitoring continuing competence is important in the practice of any profession which involves a risk of harm to the health, safety or well-being of the public from incompetent, unethical or impaired practice.

**(6) s.5(2)(f): The extent to which there exists within the health profession recognized leadership which has expressed a commitment to regulate the profession in the public interest**

The applicant has represented CTs since 1974 and the association was incorporated under the *BC Society Act* in October 1975. The applicant maintains an elected Board and standing committees which meet monthly. The applicant has a code of ethics and requires continuing professional education. The applicant has a registrar who performs functions similar to the duties of a college registrar. The registrar maintains a registry of RCTs, receives and investigates public or employer complaints, and records continuing education programs taken by members. The association has provided educational funding for the members and sponsors a two-day seminar in conjunction with the annual general meeting.

The leadership of the applicant has demonstrated an understanding and commitment to regulate the profession in the public interest.

**(7) s.5(2)(g): The likelihood that a college established under the Act would be capable of carrying out the duties imposed by the Act, having regard to factors which in the view of the council may affect the viable operation of the college**

The applicant estimates that there are 535 practitioners performing cardiac tests in the province. The practitioners are working in the following settings: institutional (360), medical offices and private cardiac laboratories (48), private clinic laboratories (109), and students (12). The estimate did not include members of other health professions who perform some cardiac tests as a portion of their duties. For example, medical laboratory assistants may perform electrocardiograms and/or apply ambulatory ECG monitors (Holter monitors).

The association represents 370 members. With membership of this size, and based upon the existence of professional colleges with fewer members, it appears that the applicant has adequate membership to sustain a viable college.

**(8) s.5(2)(h): Whether designation of the health profession is likely to limit the availability of services contrary to the public interest**

Designation is not likely to limit availability of services as most persons who perform cardiology technology services are members of the applicant association. The practice of medical laboratory assistants who perform EKGs will not be limited because provision of any services which are not reserved acts, such as EKGs, will not be restricted. The Council wishes to make it clear that the only services affected by this review are those cardiac diagnostic and treatment services that are provided in a health care setting, such as a clinic or hospital. Services provided in health clubs are not considered to be provided in a health care setting or as part of a health care service.

**d) Section 5(2) Conclusion**

The Council has determined that the section 5(2) criteria support the designation of CT as a regulated health profession.

The majority of respondents to the consultation process who commented on whether or not designation was appropriate support designation of CT under the *HPA*. This includes the BC Society of Laboratory Science, the BC Association of Medical Radiation Therapists, the BC Society of Respiratory Therapists, and Dr. Rupka, for the DAP. BC Association of Medical Radiation Therapists (BCAMRT) submits that:

*...it is in the best interest of the public to have [cardiology technologists] designated as a separate college despite the fact that they are few in number. They have a unique role to play as outlined in the scope of Practice Statement and the Reserved Act sections.*

BC Government and Service Employees' Union (BCGEU) states that it does not oppose the application for designation by CTABC.

**The Health Professions Council recommends that the profession of cardiology technology be designated as a health profession under the *Health Professions Act*.**

## **B. SCOPE OF PRACTICE STATEMENT**

According to the Council's *Terms of Reference* for the scope of practice review and its *Policy Guidelines*, the purpose of the scope of practice statement is to describe what the profession does, the purpose for which it does it and the methods it uses. The statement itself does not grant the profession an exclusive scope of practice.

Nonetheless, the statement is important because it defines the area of practice in relation to which the governing body must establish registration requirements and standards of practice. It defines the parameters of the profession for members of the profession, employers, courts and educators and it informs consumers about the service practitioners are qualified to perform. The Council's *Safe Choices Report* indicates that "*a scope of practice statement will define an individual profession's activities in broad, non-exclusive terms.*"

In its application, CTABC proposes the following scope of practice statement:

*Cardiology technology is the provision of non-invasive cardiac and cardiovascular testing, analysis and reporting to provide accurate test results for use by other health care practitioners in the diagnosis, treatment and prevention of cardiac disease and for the education of the public to preserve*

*and improve the health of the heart.*

Some respondents to the consultation, including Dr. Rupka, expressed concern about other practitioners who perform EKGs. Performing EKGs is part of the scope of practice of CT but is not a reserved act.

The Council emphasizes that the scope of practice statement is non-exclusive and elements of a scope of practice may be shared among several qualified professions or even with members of the general public. Only reserved acts must be granted to specific professions who have shown evidence of proper training and qualifications to perform them. Thus, the provision of an EKG, which is not a reserved act, can be performed by anyone with appropriate training.

BC Society of Laboratory Science (BCSLs), formerly the BC Society of Medical Technologists, states that “*cardiology technologists have accurately represented their scope of practice.*” It also appreciates the recognition of medical laboratory technologists and medical laboratory assistants in their role of performing electrocardiograms and applying Holter monitors.

BC Association of Medical Radiation Technologists (BCAMRT) supports the CTs in their application for designation under the *HPA*. It is in agreement with the proposed scope of practice, proposed reserved acts, as well as the proposed reserved titles. It further states that CTs have a unique role to play as outlined in their scope of practice statement and reserved acts sections.

RNABC states that the use of the word "analysis" is unclear. It states that analysis is most commonly the responsibility of the cardiologist.

Dr. Rupka, speaking at the request of DAP, finds the application by CTABC an appropriate move, in principle. He points out that analysis and reporting actually are provided by other health care professionals, i.e., physicians/cardiologists, and that this involves the practice of medicine.

Information provided by the applicant indicates that “analysis” performed by CTs is not final, but rather, preliminary. The final analysis and diagnosis is provided by the physician. This is documented in *Guidelines for Establishing Standards for Special Services in Hospitals: Cardiovascular Services in Hospitals* published in 1979 by the Minister of National Health & Welfare, at page 23:

*The technologist, in this facility, would be responsible both for preparing the patient for an ambulatory ECG recording and for \*analysis of the monitor tapes.*

*\*The term “analysis”, used throughout the guidelines, refers to preliminary analysis carried out by the technologist, but does not include final interpretation of the test results, which is the responsibility of the physician.*

The analysis and interpretation of test results is clearly part of diagnosis. The Council considered the respondents’ concerns and the information provided by the applicant and believes the following statement most accurately describes the scope of practice of CT.

**The Health Professions Council recommends the following scope of practice statement be granted to members of the College of Cardiology Technologists:**

**Cardiology technology is the provision of non-invasive cardiac and cardiovascular testing, preliminary data analysis and assessment to provide accurate reporting of test results for use by other health care practitioners in the diagnosis, treatment and prevention of cardiac disease.**

### **C. RESERVED ACTS**

The rationale underlying the granting of reserved acts is to protect the public by limiting provision of those acts which present a significant risk of harm to members of specific professions who are qualified to perform them. The Council has developed a list of reserved acts first set out in its *Working Paper* issued in July 1998. The *Working Paper* was developed, in large part, as a result of the Council's review of information provided by the various professions during the scope of practice consultation process.

The list of reserved acts has evolved and expanded during the Council’s continuing scope of practice review. In March 2001 the Council issued *Safe Choices: A New Model for Regulating Health Professions in British Columbia* (the *Safe Choices Report*), its report to the Minister on the scopes of practice of the currently regulated health professions. Appendix C is the list of reserved acts contained in the *Safe Choices Report* and amended by the recommendations contained in this report.

The Council wishes to emphasize that its recommendations will provide for the sharing of many of the reserved acts. Thus, in conducting its review of any of the reserved acts of a profession, the Council is not deciding which acts would be reserved exclusively to that profession. It is possible and indeed likely that acts reserved to a profession will also be reserved to other professions. However, each profession may perform the reserved acts granted to it only within the context of its defined scope of practice.

CTABC proposes the following reserved acts and rationale for risk of harm associated with them:

*Only a RCT in good standing with the College and acting under the direction of a physician would be able to provide the following services:*

a) **Pacemaker implant threshold testing, programming and interrogation.** *The testing of implanted pacemakers involves the application of electromagnetic energy that can change the operation of the pacemaker and can place the patient at risk if the resulting application is inappropriate or the programmed changes are incompatible with the patient's requirements for normal activity.*

*The application of a magnet to an implanted pacemaker will temporarily change the pacemaker's performance and has the potential for initiating potentially lethal cardiac arrhythmias or decreased cardiac performance.*

*The application of an electrical energy charge to the lead wires of an internal pacemaker to determine the correct threshold of operation for the pacemaker is a direct and potentially lethal conduit of electrical charge to a patient's heart.*

b) **Exercise tolerance testing (stress testing).** *The process of stress testing implies a risk of harm to the patient from inside. Stress testing creates an environment of workload stress to the patient's heart by exercising them to specific end points. These endpoints may include higher than expected blood pressure response, chest pain, cardiac arrhythmias or precipitous decreased blood pressure response. Any of these, alone or in combination, if not recognized, can portend significant risk to the patient.*

c) **Exercise tolerance testing with radionuclear techniques (with Nuclear Technologists).** *Radionuclear stress testing (outlined in b) with the addition of radioactive substances. These tests are usually performed in conjunction with Nuclear Technologists.*

BCAMRT points out a minor correction in CTABC's proposed reserved acts. Letter c) should state nuclear *medicine* technologist.

BCSRT has no concern with the proposed reserved act regarding pacemaker implant threshold testing, programming and interrogation. With respect to the proposed reserved act of exercise tolerance testing, BCSRT states that respiratory therapists perform several diagnostic evaluations in the area of lung function and cardiopulmonary exercise stress



testing. BCSRT further states that cardiac exercise stress testing is currently in its scope of practice and tested on a national level in its course curriculum. BCSRT refers to the statement by the applicant that "*only a RCT in good standing with the College and acting under the direction of a physician would be able to provide the following services...*" and states that the statement can be interpreted to exert controls on the core practice and responsibilities of respiratory therapists. While BCSRT understands the general intent of the applicant and the concept that reserved acts are not meant to exclude other qualified health professionals from performing the proposed reserved acts, it does not accept the above quoted language of the applicant with respect to its proposal to reserve the act of exercise tolerance testing to CTs.

RNABC refers to the statement by CTABC that "*only a RCT in good standing with the College and acting under the direction of a physician would be able to provide the following services...*" and suggests that the word "*only*" be removed as it is inconsistent with the new professional regulatory model and the concept of non-exclusive reserved acts. Additionally, RNABC states that the statement "*under the direction of a physician*" must be clarified, because RNABC's understanding of reserved acts is that they are performed independently. If CTs perform the proposed activities under the direct or indirect supervision of a physician then they may not need to be granted independent reserved acts.

With respect to pacemaker implant threshold testing, programming and interrogation, RNABC suggests that this be considered as part of the Council's reserved act #4, "*applying or ordering the application of a hazardous form of energy*". It further states that if pacemaker implant threshold testing, programming and interrogation becomes a reserved act then RNABC will need to investigate the need for registered nurses to be granted the same.

With regard to the proposed reserved act of exercise tolerance testing, RNABC states that its understanding is that CTs do not take independent responsibility for exercise tolerance testing. Further, RNABC states that exercise tolerance testing is done in a wide range of situations; from high risk situations to situations where stress testing is used to establish a safe exercise baseline for people with no history of cardiac disease. RNABC has no comment on the necessity to develop exercise tolerance testing as a reserved act. In sum, RNABC states that if all three proposed reserved acts are performed under the direction of a physician then CTs may not need to be granted any reserved act, or if granted, then the limitations should be clearly stated.

Dr. Rupka agrees with the reserved acts portion of the application, and agrees that there is sufficient risk of harm to the public in all of the listed areas.

## 1. Analysis

The Council accepts the serious and significant risk of harm involved in these three proposed reserved acts. None of the respondents disputed the risk of harm. Rather there were suggestions that these potential reserved acts should be shared with other qualified professionals. The Council has been charged with the responsibility to devise a reserved acts model which reflects current practice. In March 2001 the Council completed the *Safe Choices Report*, its review of the scope of practice of all health professions currently regulated in BC. In the course of that review, the Council recommended granting certain reserved acts to be shared among various health professions.

The role of the health professionals who are granted a certain reserved act may vary from profession to profession. Certain health professions will be able to initiate and perform reserved acts independently. Others will perform the same reserved act independently, however, the decision to initiate the reserved act will reside with another health profession, and the reserved act will be performed on the "order" of a member of that other profession. This distribution of responsibility reflects current practice. The Council recognizes that any profession whose members are granted a reserved act possesses the knowledge, skill, and ability to perform that reserved act without delegation or supervision, and is responsible for the competent delivery of that reserved act, whether or not it is initiated "on the order of" another health profession. The shared scope of practice model is based upon a framework of competent health professions who practice independently, yet collaboratively.

The Council has carefully reviewed the applicant's proposal for reserved acts and the information provided by the applicant to determine the context in which CTs perform these acts. The applicant stated that the acts are performed under direction of a physician. After discussions with the applicant and after observing CT practice in various settings, it is the Council's view that physicians do not directly supervise CTs in their performance of all the requested reserved acts. The physician is available should an emergency situation arise. The cardiology technologist does not determine when to initiate the performance of these acts. Rather the cardiology technologist is ordered by a physician to initiate any one of the three proposed acts. This is accomplished by way of a referral or "order". The physician can rely on the education and training of the cardiology technologist to independently perform those reserved acts, once the order to initiate has been given.

Some of the reserved acts requested represent advanced cardiology technology practice. All considerations relevant to advanced practice will be discussed below.

**a) Pacemaker Implant Threshold Testing, Programming and Interrogation**

The Council agrees that the first proposed reserved act, "*Pacemaker Implant Threshold Testing, Programming and Interrogation*" falls properly within the Council's reserved act #4: "*Applying or ordering the application of a hazardous form of energy*".

In communications with BCIT regarding CT education, this particular reserved act was described as an advanced practice, not part of basic CT competency. BCIT submitted a document, *Cardiology Technology: An Occupational Analysis* (the Occupational Analysis document), which states:

*... the Canadian Medical Association Committee on Conjoint Accreditation accepted the application of cardiology technology in the conjoint accreditation process subject to submission by the CSCT of a validated entry-level competency profile. It was the committee's belief, based upon feedback that they had received, that the original occupational analysis contained both basic and advanced level competencies. ...*

*... During this process they have updated the document and have differentiated between basic, or entry level, knowledge and skills and those that are most appropriate for an advanced level of practice. ...*

In addition to the Occupational Analysis document, BCIT submitted supporting documentation indicating the following activities as “non-invasive advanced practice” areas which would be performed as transfer of function, or in the Council’s view, as either supervised or delegated reserved acts:

*assess pacemaker function ...  
program pacemaker according to findings ...  
select final parameters ...*

The Council discussed the issue of advanced practice in its report *Post-Hearing Update of Preliminary Report: Pharmacists*:

*The College of Pharmacists of British Columbia (the College) had requested a number of reserved acts including administration of drugs by parenteral, intradermal and subcutaneous routes. ...*

*... The College also requested “selecting, recommending and initiating drug therapy” be a reserved act. ...*

*... While the College has used the term “in accordance with preapproved protocols and procedures”, it appears that the College is requesting a type of independent practice, unsupervised by other health practitioners.*

*... These are all advanced competencies involving reserved acts and should only be performed by practitioners who have clearly documented advanced training and for whom the College has established credentialing and monitoring procedures. ... [U]ntil such time as the College has satisfied its duties under its current legislation to protect the public by adopting*

*credentialling and monitoring procedures, the advanced practices these practitioners employ, which include reserved acts, should be covered by the delegation protocols recommended by the Council...*

As the Council has not received information about any certification program for pacemaker implant threshold testing, programming and interrogation, the Council recommends that this advanced CT practice continue to be performed under the delegation protocols recommended by the Council in its *Safe Choices Report*, outlined below:

*The Health Professions Council recommends that a provision be enacted by the Minister of Health and Minister Responsible for Seniors which sets out the duties of a health professional and his or her regulatory college when delegating a reserved act. The provision should require the following:*

- *The assigning health professional's governing body must provide assent to the proposed reserved act being performed by someone else;*
- *The reserved act to be assigned as well as the level of supervision must be clearly defined and circumscribed by the assigning health professional's governing body;*
- *Where the person to whom the act will be assigned is a regulated health professional, his or her governing body must approve of the assigning of the reserved act;*
- *The instruction to perform the act must be made in writing either by way of a general written protocol or through a case-specific instruction;*
- *The assigning health professional must be satisfied that the individual who will be performing the act has the necessary skills and training to perform the act safely;*
- *The assigning health professional must ensure that the person who will be performing the act accepts the assignment.*

The Council uses the term “delegation” to mean what is often referred to in health care settings as a “transfer of function”. This occurs when a reserved act is delegated to a member(s) of a profession which has not been granted that reserved act by a profession which has been granted that act.

**b) Exercise tolerance testing (stress testing) and exercise tolerance testing with radionuclear techniques**

The next two proposed reserved acts are more properly framed as one reserved act: Exercise tolerance testing (stress testing) which can be performed either with or without radionuclear techniques or medication enhancement as described at pages 9, 10 and 11 of this report. In the case of injection of isotopes or medication prior to the testing, the cardiology technologist is assisted by another professional who performs the actual injection. In either case, the cardiology technologist is responsible for monitoring and advancing the exercise to an end point, assessing symptoms, making judgments and decisions about the tolerance of the patient throughout the test, and stopping the test if indicated. Both types of testing frequently are performed on persons with a history of symptoms of cardiac or respiratory disease.

The Council finds that this proposed reserved act closely resembles the Council's reserved act #7: "*Allergy challenge testing or allergy desensitizing treatment involving injection, scratch tests or inhalation, and allergy challenge testing by any means with respect to a patient who has had a previous anaphylactic reaction.*" Both imply inducing a physical change or reaction which puts the patient at extreme risk. In allergy challenge testing the risk is anaphylactic reaction which is a life threatening emergency. In cardiac stress testing the risk is cardiac arrest which is also a life threatening emergency. Both must be closely monitored by a professional who can intervene should the patient's condition require immediate remediation.

The Council believes there is sufficient risk of harm in cardiac stress testing to warrant modifying reserved act #7 to include #7(b): cardiac stress testing conducted for medical diagnosis and treatment planning. The Council further believes based upon information provided by BCIT that CTs are educated, trained and qualified to perform this reserved act.

At the public hearing the Council heard concerns regarding fitness and exercise tolerance testing in university laboratories and in fitness or health clubs. Representatives of Simon Fraser University, Department of Kinesiology and the BC Association of Kinesiologists were concerned about whether these types of testing would be included within a reserved act for cardiac stress testing. The Council wishes to emphasize that the reserved act for cardiac stress testing is not meant to include fitness testing of the sort utilized in health clubs for otherwise healthy persons. Nor does the reserved act cover research in a standardized university setting. While there may be some risk involved in that type of testing, it is not covered by the reserved act model, which is meant to cover reserved acts performed in the course of health care services. This recommended reserved act includes only cardiac exercise tolerance testing which is ordered for a specific patient by a physician for medical diagnostic and treatment purposes.

Information received during the Council's investigation indicated the following as part of cardiac stress testing which was requested as a reserved act for all CTs:

- *carry out procedure using tilt-table to precipitate vaso-vagal response*
- *assess cardiac structure and function using cardiac ultrasound*

The information provided by BCIT indicated these were advanced competencies, which require specialized training not possessed by all CTs. In the Council's view, these procedures are most appropriately managed as a transfer of function to be performed under supervision or according to delegation protocols.

### **c) Administering oxygen and medication**

An additional reserved act which was not requested by the applicant was noted by the Council in its investigation. The applicant indicated that CTs administer oxygen and medication such as dobutamine or nitroglycerin on the order of a physician. This may occur during a cardiac stress test. Both of these acts are included on the Council's Reserved Acts List (Appendix C).

With regard to CTs' training for administration of medications and oxygen BCIT states the following:

*Cardiology technologists trained in their basic training at BCIT will have taken many theory courses explaining medications (especially cardiac medication through CARD 3360 Cardiac Pharmacology)...*

*... While the administration of medication may not be part of basic competencies, it can be demonstrated from the documentation provided above that the Cardiology technologists trained in their basic training at BCIT have some of the required knowledge and competencies in the administration of medications and oxygen to allow for a transfer of function within the health care setting (usually under the direct supervision of a physician).*

The Council finds that reserved acts which are part of advanced practice are most appropriately performed under supervision or delegation protocols as they represent a transfer of function.

## **2. Conclusion**

The Council concludes that pacemaker implant threshold testing, programming and interrogation and administration of medication and oxygen and/or radio isotopes by a CT are reserved acts. As such they must be either supervised or delegated by a health

professional who has the authority to administer such substances and/or medication and to perform pacemaker testing, programming and interrogation. These reserved acts will not be granted at this time to CTs. Rather, they can continue to be performed under supervision or following delegation protocols outlined in the Council's *Safe Choices Report*, at page 64, Part I, Volume 1.

If, in the future, a College of Cardiology Technologists establishes credentialing and regulatory controls for advanced competencies, the Council could consider recommending that these additional reserved acts be granted to those CTs who have achieved training and education to perform them.

The information provided by the applicant and respondents to the consultation process indicates that cardiac stress testing is part of basic competencies of all CTs. The Council therefore concludes this reserved act should be granted to members of the College of Cardiology Technologists.

**The Health Professions Council recommends that members of the College of Cardiology Technologists be granted the following reserved act to perform on the order of a health practitioner who is authorized by legislation to perform the act:**

**Reserved act #7(b): cardiac stress testing conducted for medical diagnosis and treatment planning.**

#### **D. RESERVED TITLES**

The applicant makes the following submission regarding reserved titles:

*Currently the titles and initials, **Cardiology Technologist** and **Cardiology Technician** are protected under the Societies Act. The Association would like to see this title protection continue as part of the designation of the new College.*

RNABC has no objection to the proposed reserved titles. However, RNABC commented that if the titles represent two different levels of practitioners, i.e., certificate and diploma, then the distinction should be reflected in the scope of practice statement and any reserved acts granted to CTs.

The applicant has clarified that the titles do not refer to different levels of practitioners. The Council's practice has been to recommend, where possible, a single reserved title for college members. Consistent with this practice, the Council concludes it is in the public interest to recommend only one title, Cardiology Technologist, be granted to members of the College.

**The Health Professions Council recommends that the title "Cardiology Technologist" be reserved for the exclusive use of registrants of the College of Cardiology Technologists.**

#### **E. NAME OF THE COLLEGE**

Consistent with the regulatory bodies for other health professions, the Council recommends that the college name incorporate the name of the practitioners rather than the profession.

**The Health Professions Council recommends that the college established for cardiology technology be named the "College of Cardiology Technologists".**

#### **F. OTHER ISSUES**

##### **1. Society Act**

The Council recommends that any other titles reserved under the *Society Act* which conflict with the above recommendation regarding reserved titles for CTs should be reviewed by the appropriate ministers as they may be misleading to the public.

It is the Council's view that the current situation where other titles with respect to health professions can be reserved under section 9(1) of the *Society Act* is not in the public interest as the Council noted in its *Report on the Designation of Occupational Therapy*, September 1996, and in its *Report on the Designation of Dietetics*, October 1999. Unlike the Council's review of an application for designation under the *HPA*, the Registrar under the *Society Act* does not conduct a detailed public interest analysis of the society, its membership or the services it provides with a view to regulation of the members of the applicant society. The Council believes that the title protection system under the *Society Act* could be confusing or misleading to members of the public. Exclusive use of title conferred under the *Society Act* may be interpreted by the public to mean that a member of a registered society or association is subject to regulation which does not, in fact, exist. Further, there is no restriction on a health care worker using a title which includes the



words *registered, licensed or certified* even though he or she has not been granted a title under either the *Society Act* or the *HPA*. This situation can be misleading to the public. In the Council's view, such unregulated use of these terms is not in the public interest as it may imply government sanction.

In its 1991 Report: *Closer to Home*, the Royal Commission on Health Care and Costs recommended that:

7.
  - a. *the Society Act be amended so that the Health Professions Council must approve an occupational title or abbreviation before the Registrar grants protection of it;*
  - b. *all health profession titles previously granted protection under the Society Act that have not been approved by the Health Professions Council be revoked two years after the passing of the revised Health Professions Act; and*
  - c. *the Health Professions Act be amended to prohibit the use of words like "registered", "licensed" or "certified" by any health care worker unless that use has been approved by the Health Professions Council.*

The Council adopts and supports these conclusions and recommends their implementation.

**SUMMARY OF RESPONSES TO THE  
CARDIOLOGY TECHNOLOGISTS ASSOCIATION OF BC  
APPLICATION**

**PROFESSIONAL ASSOCIATIONS/SOCIETIES**

**1. BC Society of Laboratory Science (BCSLs), formerly the BC Society of Medical Technologists**

1-page letter from Gael Story, Executive Director, September 9, 1999

The BCSLS states that the CTABC has accurately represented its scope of practice. It also appreciates the recognition of medical laboratory technologists and medical laboratory assistants in their role of performing electrocardiograms and Holter monitors.

**2. BC Association of Medical Radiation Technologists (BCAMRT)**

1-page electronic mail letter from Ann McMillen, President, August 15, 1999

The BCAMRT supports the cardiology technologists (CTs) in their application for designation under the *HPA*. It is in agreement with the proposed scope of practice, proposed reserved acts, as well as the proposed reserved titles. It further states that CTs have a unique role to play as outlined in their scope of practice statement and reserved acts sections. The BCAMRT points out a minor correction in the CTABC's proposed reserved acts: on letter c), it should state nuclear *medicine* technologist.

**3. BC Society of Respiratory Therapists (BCSRT)**

2-page letter from Michael D. Coutts, President, September 16, 1999

**Scope of practice**

The BCSRT has no concern with the proposed scope of practice.

**Reserved acts**

The BCSRT has no concern with the proposed reserved act regarding pacemaker implant threshold testing, programming and interrogation.

With respect to the proposed reserved act of exercise tolerance testing, the BCSRT states that respiratory therapists perform several diagnostic evaluations in the area of lung function and cardiopulmonary exercise stress testing. The BCSRT further states that cardiac exercise stress testing is currently in its scope of practice and tested on a national level in its course curriculum. The BCSRT refers to the statement by the CTABC that, "*only a RCT in good standing with the College and acting under the direction of a physician would be able to provide the following services...*", and states that the statement can be interpreted to exert controls on the core practice and responsibilities of respiratory therapists. While the BCSRT understands the general intent of the CTABC and the concept of reserved acts are not to exclude other health professionals from performing the proposed reserved acts, it does not accept the above quoted language by the CTABC with respect to its proposal to reserve the act of exercise tolerance testing to CTs.

**4. British Columbia Association of Kinesiologists (BCAK)**

- (a) 1-page letter from Christopher S. Winn, Chair, Professional Status, January 10, 2000

**Reserved acts**

BCAK states that the proposed reserved act on exercise tolerance testing (stress testing) is also performed by kinesiologists. It states that granting this act as a reserved act to CTs would exclude qualified registered kinesiologists from performing this act.

- (b) 6-page submission from Christopher S. Winn, Chair, Professional Status, February 9, 2000

**Scope of practice**

BCAK states the proposed scope of practice statement makes references to areas in which kinesiologists practise. BCAK makes no objection to the proposed statement because it is not an exclusive scope of practice.

BCAK makes reference to the following phrase in the proposed scope of practice statement: “... to provide accurate test results for use by other health practitioners... and for the education of the public to preserve and improve the health of the heart.” BACK states it is unclear whether it is the “other health care practitioners” who will be providing this public education or the CTs themselves. BACK suggests that the statement be clarified to identify who will be providing this educational service.

**Reserved acts**

BCAK has several concerns with the proposed reserved acts.

First, BCAK cites the following statement: “Only a RCT in good standing with the College and acting under the direction of a physician would be able to provide the following services.” BACK states that the delegation protocol of the Council explains that acts delegated by another health professional are considered supervised acts. The *Medical Practitioners Act*, however, does not have any of the applicant’s proposed acts as reserved acts for medical practitioners. BCAK requests clarification on this issue.

With respect to the proposed reserved act on pacemaker: implant threshold testing, programming and interrogation, BCAK agrees that CTs have the skills to perform this act. However, BCAK is unsure whether it should be granted as a reserved act as other health professionals, such as physicians, also possess the required background to perform this act.

With respect to the proposed reserved act on exercise tolerance testing (stress testing), BCAK states that its members are employed as exercise therapists in rehabilitation facilities, personal trainers, health and lifestyle co-ordinators for fitness facilities and community centres and fitness instructors. BCAK states that exercise tolerance testing is currently being performed by a large number of kinesiologists. BCAK feels that “the granting of this proposed reserved act would seriously impair the ability of kinesiologists to provide their services, and is therefore not in the best interests of the public.” It states that kinesiologists have extensive training in this area and are well qualified to perform this act. BCAK recommends that this proposed reserved act not be granted to the applicant.

With respect to the proposed reserved act of exercise tolerance testing with radionuclear techniques, BCAK states it is unclear what the role of the CT will be. It states that since the CT will be acting under the direction of a radionuclear technologist, it would be more appropriate to classify this act as a supervised act. BCAK also states that kinesiologists are equally competent as CTs to perform this act. Therefore, BCAK requests that this act not be granted as a reserved act to the applicant.

### **Reserved titles**

BCAK has no objection to the proposed reserved titles.

## **REGULATORY BODIES**

### **5. College of Physicians and Surgeons of BC (CPSBC)**

1-page letter from Dr. T.F. Handley, Registrar, July 6, 1999

The CPSBC states that it has corresponded with the BC Medical Association (BCMA) which will contact parties within the medical profession. The CPSBC will then write the Council its comments together with the responses received by the BCMA.

### **6. College of Dental Hygienists of BC (CDHBC)**

1-page letter from Nancy Harwood, Registrar, July 20, 1999

The CDHBC makes no comment to this application.

### **7. Registered Nurses Association of BC (RNABC)**

3-page letter from M. Laurel Brunke, RN, MSN, Executive Director, September 23, 1999

### **Scope of practice**

The RNABC states that the use of the word "analysis" is unclear. It states that analysis is most commonly the responsibility of the cardiologist.

### **Reserved acts**

The RNABC refers to the statement by the CTABC that, "*only a RCT in good standing with the College and acting under the direction of a physician would be able to provide the following services...*", and suggests that the word "*only*" be removed as it is inconsistent with the new professional regulatory model and the concept of non-exclusive reserved acts. Additionally, the RNABC states that the statement "*under the direction of a physician*" must be clarified, because the RNABC's understanding of reserved acts is that they be performed independently. If CTs perform the proposed activities under the direct or indirect supervision of a physician then they may not need to be granted independent reserved acts.

With respect to pacemaker: implant threshold testing, programming and interrogation, the RNABC suggests that this be considered as part of the Council's reserved act #4, "*applying or ordering the application of a hazardous form of energy*". It further states that if pacemaker: implant threshold testing, programming and interrogation becomes a reserved act then the RNABC will need to investigate the need for registered nurses to be granted the same.

With regard to the proposed reserved act of exercise tolerance testing, the RNABC states that its understanding is that CTs do not take independent responsibility for exercise tolerance testing. Further, the RNABC states that exercise tolerance testing is done in a wide range of situations; from high risk situations to situations where stress testing is used to establish a safe exercise baseline for people with no history of cardiac disease. The RNABC has no comment on the necessity to develop exercise tolerance testing as a reserved act. However, it would offer registered nurses who are experts in cardiac care to assist the Council in determining the necessity of developing a reserved act for exercise tolerance testing.

In sum, the RNABC states that if all three proposed reserved acts are performed under the direction of a physician then CTs may not need to be granted any reserved act, or if granted, then the limitations should be clearly stated.

#### **Reserved title**

The RNABC has no objection to the proposed reserved titles.

#### **OTHER ORGANIZATIONS/INDIVIDUALS**

##### **8. Dr. D.W. Rupka, Inc.**

2-page letter from Dr. Dennis W. Rupka, M.D., F.R.C.P. (C), July 12, 1999

Dr. Rupka responds at the request of Gretchen Greer of the Diagnostic Accreditation Program.

In principle, Dr. Rupka finds the application by the CTABC an appropriate move.

#### **Scope of practice**

Dr. Rupka clarifies that analysis and reporting actually are provided by other health care professionals, i.e., physicians/cardiologists. He states that analysis and reporting of such studies would amount to the practice of medicine without a licence.

Further, Dr. Rupka raises an issue with respect to the provision of electrocardiograms (ECGs). He states that in many hospitals ECG are done in emergency by nursing staff. He proposes the need to consider some way of allowing ECGs to be performed by nurses who are certified in its use. Additionally, Dr. Rupka states that services of CTs should always be performed under the direction of adequately qualified physicians.

#### **Reserved acts**

Dr. Rupka agrees with this portion of the application, and agrees that there is sufficient risk of harm to the public in all of the listed areas.

#### **Reserved titles**

Dr. Rupka agrees with this portion of the application.

##### **9. BC Government and Service Employees' Union (BCGEU)**

1-page letter from Daryl Barnett, A/Coordinator, Negotiations, September 13, 1999

The BCGEU states that it does not oppose the application for designation by the CTABC. It asks how college representatives and public representatives will be appointed when a college is established.

**10. Simon Fraser University (SFU)**

2-page letter from John Dickinson, Professor and Director, School of Kinesiology, February 7, 2000

**Reserved acts**

SFU states that many of its students become members of the British Columbia Association of Kinesiologists (BCAK, see submission #4). It concurs with the statements made by BCAK on the impact of the proposed reserved acts on the work of kinesiologists. SFU states that kinesiologists are competent to perform exercise stress testing, and to reserve this act to cardiac technologists would be a disservice to the public.

SFU also states that stress testing is an inherent part of the research protocol in the academic study of kinesiology. It states that if the proposed reserved act on stress testing is granted, researchers in exercise physiology would have to hire CTs to perform tests involving stress testing. Thus, SFU recommends that stress testing and exercise tolerance testing with radio-nuclear technologies not be granted as a reserved act to CTs.

**OTHER PROVINCES**

**11. Alberta Health**

1-page letter from Lynne Duncan, Deputy Minister, August 18, 1999

Alberta Health makes no comment at this time.

**12. Ontario Ministry of Health (Ontario-MOH)**

1-page letter from Marilyn S. Wang, Manager, September 9, 1999

Ontario-MOH responds to the request of Alan Burrows. It states that the practice of CT is currently not regulated in Ontario. It then elaborates on the criteria used in Ontario whether a profession should be regulated, cites the *Regulated Health Professions Act*, and attaches a document, *Request for Regulation under the Regulated Health Professions Act, 1991*.

**RESPONSES TO THE COUNCIL'S DRAFT REPORT**

**13. Registered Nurses Association of British Columbia (RNABC)**

2-page letter from M. Laurel Brunke, Executive Director, September 27, 2001

RNABC discusses a preprinted order as it is used in CT practice:

*[It] is a commonly used mechanism in the workplace. Preprinted orders enable physicians to make broad orders (including protocols and medical directives) patient-specific by adding the name of a particular patient and signing it. The physician may also change parts of the protocol to reflect the unique needs of a patient. RNABC does not consider this form of order to be an indirect order.*

For the RNABC an indirect order occurs when health professionals work from a broad order, protocol or medical directive that applies to a group of patients. The health professional selects and initiates interventions and treatments for a specific patient based on the health care professional's clinical evaluation of that patient. RNABC also believes that, to ensure patient safety, indirect orders should be part of the delegation process. It states that delegation requires that the physician be satisfied that the individual they are delegating to has the necessary competence to initiate the reserved act with a broad class of patients.

**14. Cardiology Technologists Association of B.C. (CTABC)**

1-page letter from Rich Payne, CTABC Committee Chair for HPA, September 28, 2001

CTABC states its underlying concerns, as follows:

1. *the removal of "cardiology technician" apparently will not affect our submission any more than the use of any other title used by a person performing a reserved act;*
2. *the possibility of a future revision and change in reserved act(s) due to technological change or public safety issues can be made;*
3. *the BCIT Cardiology Technology program became a full diploma effective September, 2001; and*
4. *A further addition to the submission, for information only, is our understanding that the Canadian Society of Cardiology Technologists has asked for and been granted, CMA accreditation. (Documentation pending).*

LIST OF PARTICIPANTS IN THE PUBLIC HEARING

HEALTH PROFESSIONS COUNCIL

Dianne Tingey, Chair  
Jim Chisholm, Member  
Brenda McBain, Member

HEARING WITH RESPECT TO THE  
DESIGNATION OF CARDIOLOGY TECHNOLOGISTS  
PURSUANT TO THE  
HEALTH PROFESSIONS ACT

9:00 a.m. February 9, 2000  
Robson Square Conference Centre  
Conference Room 3

AGENDA

- 9:00 Opening Remarks by Chair
- 9:15 Regional Healthy Heart Program, Simon Fraser Health Region  
Holly Kennedy-Symonds
- 9:45 S.F.U., School of Kinesiology, John Dickinson
- 10:15 **BREAK (FIFTEEN MINUTES)**
- 10:30 B.C. Association of Kinesiologists, Karlene Dawson
- 11:00 B.C. Ultrasonographers' Society, Ken Marken and Sylvia Phillips
- 11:30 B. C. Society of Respiratory Therapists, Patty Wickson and John  
Andruschak
- 12:00 **LUNCH (ONE HOUR FIFTEEN MINUTES)**
- 1:15 Cardiology Technologists Association of B.C., Richard Payne



**RESERVED ACTS LIST**

1. Making a diagnosis identifying a disease, disorder or condition as the cause of signs or symptoms of the individual.
2. Performing the following physically invasive or physically manipulative acts:
  - (a) procedures on tissue below the dermis, below the surface of a mucous membrane, in or below the surface of the cornea, in or below the surfaces of the teeth, including the scaling of teeth;
  - (b) setting or casting a fracture of a bone or reducing a dislocation of a joint;
  - (c) movement of the joints of the spine beyond the limits the body can voluntarily achieve but within the anatomical range of motion using a high velocity, low amplitude thrust;
  - (d) administering a substance, other than a drug, by injection, inhalation, irrigation, or instillation through enteral or parenteral means; and
  - (e) putting an instrument, hand or finger(s),
    - i. into the external ear canal, including applying pressurized air or water,
    - ii. beyond the point in the nasal passages, where they normally narrow,
    - iii. beyond the pharynx,
    - iv. beyond the opening of the urethra,
    - v. beyond the labia majora,
    - vi. beyond the anal verge, or
    - vii. into an artificial opening into the body.
3. Managing labour or delivery of a baby.
4. Applying or ordering the application of a hazardous form of energy including ultrasound, electricity, magnetic resonance imaging, lithotripsy, laser and X-

ray, or as prescribed by regulation.

5. (a) Prescribing, compounding, dispensing or administering by any means a drug listed in Schedule I or II of the *Pharmacists, Pharmacy Operations and Drug Scheduling Act*, or as prescribed by regulation.

For the purposes of this reserved act, the following definitions shall apply:

"prescribing": the ordering of a drug;

"compounding": mixing ingredients, at least one of which is a drug;  
and

"dispensing": preparing or filling a prescription for drugs.

- (b) Designing, compounding or dispensing therapeutic diets where nutrition is administered through enteral or parenteral means.

For the purposes of this reserved act, the following definitions shall apply:

"designing": the selection of appropriate ingredients for enteral or parenteral nutrition;

"compounding": mixing ingredients, for enteral or parenteral nutrition;  
and

"dispensing": filling a prescription for enteral or parenteral nutrition.

6. Prescribing appliances or devices for vision, hearing or dental conditions; dispensing such prescribed appliances or devices for dental conditions; fitting such appliances or devices for dental conditions, or fitting contact lenses.

For the purposes of this reserved act, the following definitions shall apply:

"prescribing": ordering the fabrication or alteration of appliances or devices for vision, hearing, or dental conditions; and

"dispensing": filling a prescription by fabricating or altering a dental appliance or device.

7.
  - (a) Allergy challenge testing or allergy desensitizing treatment involving injection, scratch tests or inhalation, and allergy challenge testing by any means with respect to a patient who has had a previous anaphylactic reaction; and
  - (b) Cardiac stress testing conducted for medical diagnosis and treatment planning.

**GLOSSARY AND ABBREVIATIONS OF NAMES**

BC Association of Medical Radiation Technologists .....	BCAMRT
BC Institute of Technology .....	BCIT
BC Society of Laboratory Science.....	BCSLs
BC Society of Respiratory Therapists .....	BCSRT
College of Physicians and Surgeons of BC.....	CPSBC
Canadian Society of Cardiology Technologists .....	CSCT
Cardiology Technologists Association of BC.....	CTABC
Diagnostic Accreditation Program .....	DAP
ECG or EKG.....	electrocardiogram
Holter Monitor.....	ambulatory electrocardiogram