



**Australasian Society of Cardio~Vascular Perfusionists Incorporated**  
PATRON; SIR BRIAN BARRATT-BOYES KBE, ChM., FRACS, FACS (Hon.), FRSNZ, FRCS (Hon.) DSc. (Hon.)

**25/07/2005**

**Ms. Jill Irvine**  
**Health Workforce Study**  
**Productivity Commission**  
**PO Box 80**  
**Belconnen ACT 2616**

**RE: PROPOSAL CONCERNING THE REGISTRATION AND REGULATION  
OF CLINICAL PERFUSIONISTS IN THE WORKFORCE OF AUSTRALIA.**

**Dear Jill**

I'm writing to the Health Workforce Study Productivity Commission on the behalf of the Australasian Society of Cardio Vascular Perfusionists Inc (ASCVP) and the Australasian Broad of Clinical Perfusion (ABCP).

At this time in Australia there are no Federal or State laws governing small groups of health professionals who may cause injury or death to a patient under their care.

Perfusion is one of those groups where is no minimum qualification required to practice and Australian hospitals are under no obligation hire appropriate qualified personnel. The ASCVP and ABCP both believe that there is an issue of public safety if hospitals are not using appropriately qualified Perfusionists.

**Background information on cardiac perfusion**

Cardiac (extra-corporeal) perfusion is an essential element of open-heart surgery. It can be described in simple terms as the process of using a special heart-lung bypass machine to maintain and oxygenate the patient's blood circulation while the heart is kept artificially stopped. It is a separate activity from cardiac anaesthesia.

In theatre, the anaesthetist and the perfusionist are key members of the surgical team, working under the general direction of the Cardiac surgeon. The safety of a cardiac surgical patient is therefore dependent, to a significant extent, on the knowledge and skill of the perfusionist.

**Operation of the heart-lung bypass machine**

In Australia there are a number of alternative "models" for cardiac perfusion.

In the first model, the heart-lung bypass machine is operated by a "clinical perfusionist" - a science graduate who has completed a two-year diploma course in cardiac perfusion and operation of the machine.

C/- Po Box 921, Parkville Victoria 3025 1  
Australia

In the second model, the machine is operated by a medical practitioner, known as a “medical perfusionist” – usually a specialist anaesthetist (except in Queensland). The College of Anaesthetists issues a set of detailed procedural guidelines on the practice of extra-corporeal perfusion.

This proposal does not include Medical practitioners.

### **The training, qualifications and registration of clinical perfusionists**

At present there are 120 clinical perfusionists working in Australian and New Zealand hospitals. Most are members of the ASCVP and holders of the Diploma of Perfusion, awarded by the Australasian Board of Cardiovascular Perfusion (ABCP).

The ABCP was established by the ASCVP in 1989, in close collaboration with the Royal Australasian College of Surgeons and the Australian and New Zealand College of Anaesthetists. The ABCP was given a specific objective: to design and manage the training and qualification, and re-certification of clinical perfusionists.

The ABCP has now been conducting post-graduate training courses for candidate clinical perfusionists for more than ten years. The course is of two years duration and candidates must already have a university degree in science or medicine. It consists of 12 modules, with theoretical and practical elements, and can be undertaken in a number of teaching hospitals accredited by the ABCP in Australia and New Zealand. Written examinations, set by the ABCP, are carried out on completion of each module and candidates must pass a final written and oral examination by an examining board (which includes a surgeon and an anaesthetist) in order to qualify for the Diploma of Perfusion. A register of holders of the Diploma is currently maintained by the ASCVP.

From the 2006 the perfusion course currently being offered by the Australasian Board of Clinical Perfusion will be taken over by Melbourne’s Swibourne University as a long distance learning programme. At the completion of the perfusion course, Swibourne University will award successful students a Master’s of Perfusion Science.

### **Re-Certification**

Was introduced by ABCP in 2001, all perfusionists who hold an Australasian Diploma of Perfusion were asked to re-certify. Re-certification was achieved by the ABCP setting out a list of minimum Clinical and education activity required over three years.

At the end of 2003 all currently practicing holders of Australasian Diploma of Perfusion had re-certified.

### **Regulation and registration**

Despite the high level of responsibility for patient safety borne by the perfusionist, there are at present, as far as we are aware, no Commonwealth or State Government regulations relating specifically to the training, qualifications and registration required of persons who are permitted to work as perfusionists during open-heart surgery.

We submit that this matter deserves attention and we propose (a) that the Commonwealth Government recognise the ABCP training regime and Diploma and (b) that State Governments establish Registers of Diploma-qualified clinical perfusionists.

In conclusion, we submit that implementation of our proposal would contribute towards the safety of cardiac patients and also to the standing and morale of clinical perfusionists who work in Australia's public and private hospitals.

**Yours Sincerely**

**Darryl McMillan**  
**ASCVP President**



*AUSTRALASIAN SOCIETY OF  
CARDIO~VASCULAR PERFUSIONISTS INC*  
*PATRON: SIR BRIAN BARRATT-BOYES KBE, ChM., FRACS, FACS (Hon), FRSNZ, FRCS (Hon.) DSc. (Hon.)*

## **GUIDE TO CLINICAL PERFUSION IN AUSTRALIA AND NEW ZEALAND**



### **A CASE FOR REGISTRATION**

# AUSTRALASIAN SOCIETY OF CARDIO~VASCULAR PERFUSIONISTS INC

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P.O. BOX 921, PARKVILLE, VICTORIA 3025, AUSTRALIA



## WELCOME INTRODUCTION

**Dear Reader,**

On behalf of the Australasian Society of Cardio-Vascular Perfusionists (ASCVP) and The Australasian Board of Cardiovascular Perfusion (ABCP), I would like to welcome you to this outline of the role, practice and duty of care of an ABCP CERTIFIED PERFUSIONIST.

The ABCP was formed by the ASCVP with the Royal Australasian College of Surgeons and the Australian and New Zealand College of Anaesthetists to regulate the education, training, standards and the certification of clinical perfusionists.

Despite the existence of this certification programme, at present there is no obligation for a hospital to employ an ABCP certified perfusionist to operate the HEART LUNG MACHINE in Australia.

The ASCVP and ABCP have identified the need for the more formal REGISTRATION of clinical perfusionists to prevent unqualified individuals from practising or to withdraw registration from perfusionists who have proven to practice in an unsafe manner.

The implementation of a registration process would act as a safeguard to protect the Australian public when requiring cardiopulmonary bypass. Consequently, the ASCVP and ABCP are seeking some form of statutory recognition of its members by the Australian government.

We hope you can assist us in introducing registration and thereby ensure safe perfusion practice in Australia.

Yours Sincerely

**Darryl McMillan**  
**ASCVP President**



The surgical personnel required to perform Cardiac surgery include the Cardiac surgeon, Surgical assistant, Scrub nurse, Anaesthetist and Perfusionist.

With the noted exception of the Perfusionist, each member of this team **MUST BE REGISTERED** to practice by federal or state government legislation.

Please assist the ASCVP to rectify this anomaly in Australian and New Zealand law whereby a person may currently practice as a perfusionist without a minimum qualification or standard of care.

## DID YOU KNOW THAT IN AUSTRALIA

According to the Australian Heart Foundation, in 1998 there were **22,253 cardiac surgical procedures** performed in 50 hospitals with each procedure requiring the services of a perfusionist.

Historically, the number of cardiac surgical procedures grows larger each year. Cardiac surgery procedures in 1998 increased by an estimated 2.6% from 1995.

Cardiac surgical procedures include repairs and replacements of the heart's valves, wall and internal structures, bypassing blocked coronary arteries, heart transplants, and replacements of the major artery (aorta) in the chest.

During most cardiac surgery, the heart must be made to stop beating. While this occurs (to maintain pulmonary and circulatory functions) the patient's blood is diverted outside the body and circulated through the heart-lung machine before being returned to the patient. In effect, the machine assumes the function of both the patient's heart and lungs.



**Heart-Lung Machine**

### **This machine is operated by a Clinical Perfusionist.**

Australia currently **does not require** a clinical perfusionist to be registered to practice. Australia does not set minimum standards for employment of such individuals. Therefore, persons coming into Australia to practice extra-corporeal technology are not subjected to any minimum standard screening process to work here.

There are about 90 clinical perfusionists in Australia yet they may impact on the lives of up to 22,253 of its citizens annually. These 22,253 people

place their lives in the hands of a surgical team that usually includes a Clinical Perfusionist.

Clinical perfusionists administer medicines and transfuse blood products to patients in the operating room under the supervision of a physician. Allied medical professionals who do these tasks anywhere else in the hospital must be registered to practice.

# Clinical Perfusionist Description

A perfusionist is a skilled health professional within a cardiac surgery unit. A qualified Clinical Perfusionist holds an undergraduate degree of a B.Sc. or equivalent and a Post Graduate Qualification (Certificate or Diploma of Perfusion) from the ABCP. This enables them to operate and control the extra-corporeal circulation equipment required during cardiopulmonary bypass.

Cardiopulmonary bypass is used to temporarily replace the patient's pulmonary and circulatory functions during operations involving the heart.

The Clinical Perfusionist ensures the proper management of the patient's physiological functions by monitoring necessary variables, e.g. blood pressure, heart pressures, oxygen and blood flow, blood gases and machine function. He or she is knowledgeable concerning the variety of equipment available to perform extra-corporeal circulation functions and is responsible for selecting the appropriate equipment and techniques to be used in clinical practice.

Standards defined by the ASCVP and the Australasian College of Surgeons recommend that cardiopulmonary bypass may only be conducted by specialist individuals who have undergone recognised training and certification in perfusion science.

## **The duties of a Clinical Perfusionist may include, but are not limited to:**

1. Cardiopulmonary bypass
2. Extra corporeal life support (formerly known as ECMO)
3. Ventricular assistance
4. Induction of hypothermia / hyperthermia with reversal
5. Haemodilution
6. Haemofiltration
7. Plasmapheresis
8. Administration of cardioplegia
9. Anticoagulation monitoring
10. Blood conservation techniques including autotransfusion
11. Blood gas / biochemistry monitoring
12. Physiological monitoring
13. Intra-aortic balloon counterpulsation
14. Isolated limb or organ perfusion
15. Organ preservation
16. Total body washout
17. Dialysis
18. Administration of prescribed medications, blood components, and anaesthetic agents via the extra-corporeal circuit
19. Platelet sequestration
20. Full clinical documentation of duties carried out
21. Administration, continuing education, quality control
22. Research

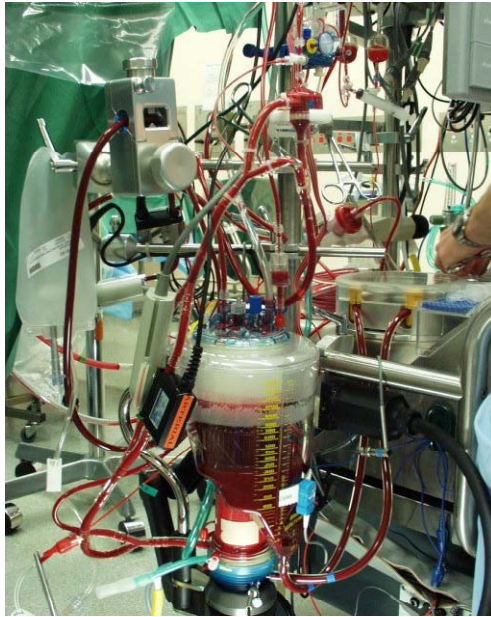




Paediatric Ventricular Assist Device



Intraoperative blood salvage



Paediatric Heart-Lung Machine



Intra Aortic Balloon Pump



Anticoagulation, haemostasis, blood gas and electrolyte monitoring



Measurement of blood flow through coronary grafts

# Australasian Society of Cardio-Vascular Perfusionists (ASCVP)

In 1984 the ASCVP was established with the three following objectives:

## 1. To provide a means of communication between Perfusionists.

This has been achieved by three means:

- i. Annual scientific meeting held on rotating bases between the states of Australia and New Zealand;
- ii. Bi-yearly publication of the ASCVP Gazette;
- iii. The ASCVP website: [www.perfusion.com.au](http://www.perfusion.com.au).

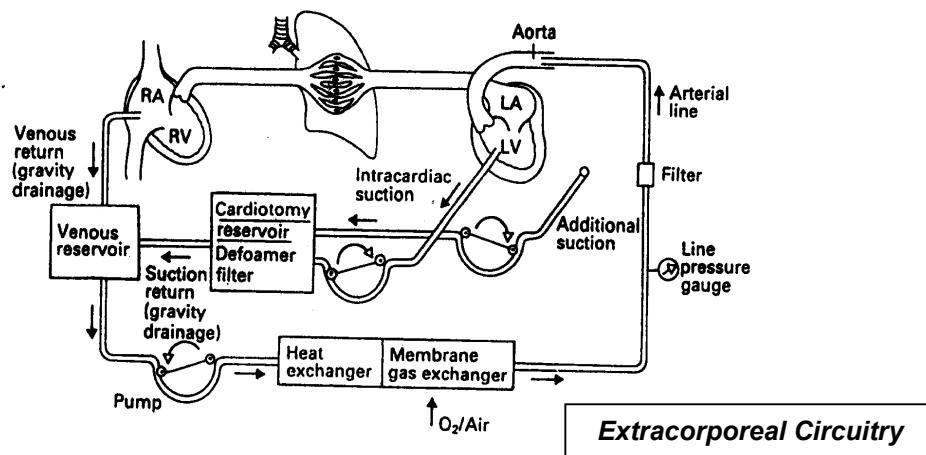
## 2. To provide a regulatory body to uphold the standards of Perfusion.

- i. In 1989, the ASCVP in conjunction with the Royal Australasian College of Surgeons, and the Australian and New Zealand College of Anaesthetists established the Australasian Board of Cardiovascular Perfusion (ABCP) to train and certify Perfusionists.
- ii. Since 1989, the ABCP has certified 107 Perfusionists from Australia and New Zealand.
- iii. In 2001, the ABCP implemented re-certification of the diploma in clinical perfusion. The first candidates were due in December 2002.

## 3. To obtain official recognition and acceptance as qualified practicing Perfusionists.

Having achieved both of the above objectives 1. and 2., we are now positioned to embark upon official recognition of our profession.

Our objective is to safeguard the Australia and New Zealand public by using an organisation such as the ABCP, which can prevent non-certified individuals from practising or withdraw credentialing from an individual who is practising dangerously.



# **The Australasian Board of Cardiovascular Perfusion (ABCP)**

## **Background**

Following its formation, the ASCVP began to develop a system of education and accreditation for its members. In 1987, a referendum of members was held to determine their opinions on the project and, in 1989, the ASCVP created the Australasian Board of Cardiovascular Perfusion (ABCP) to manage its educational, examination and re-certification programme. The support of the Royal Australasian College of Surgeons (RACS) and the Australian and New Zealand College of Anaesthetists (ANZCA) was obtained with the ABCP being formed with representatives from the three groups.

## **Perfusion Structured Course**

There were inevitable limitations imposed on the design of the education course by the geographical isolation of potential trainees in Australia and New Zealand. Candidates could not be expected to travel to one centre which might be as much as 4000 km from their own unit. Consequently, the course was designed as a combined theoretical and practical, two-year, postgraduate, modular course which could be provided at major teaching hospitals throughout Australia and New Zealand. Candidates follow a structured syllabus provided by the Board and are supervised day-to-day by a person appointed from their own institution. Examinations are held at the end of each subject module and these are set by the Board. At the end of the three-year period, a formal written and oral examination set by the Board must be successfully completed to qualify for the Diploma of Perfusion.

## **ABCP Terms of reference**

The ABCP is established pursuant to the rules of the Australasian Society of Cardiovascular Perfusionists Incorporated. The Board therefore, forms part of the incorporated association and has no separate legal existence outside the Society. The Board is required to establish and support the credentialing process. The grant of power is widely framed and the Board enjoys a high level of independence from the Society executive committee subject only to the qualification of "responsibility" within the parameters of the rules. It is incumbent upon the Board to formulate and develop policies, procedures and guidelines in order to efficaciously dispense with its duties. Its role is:

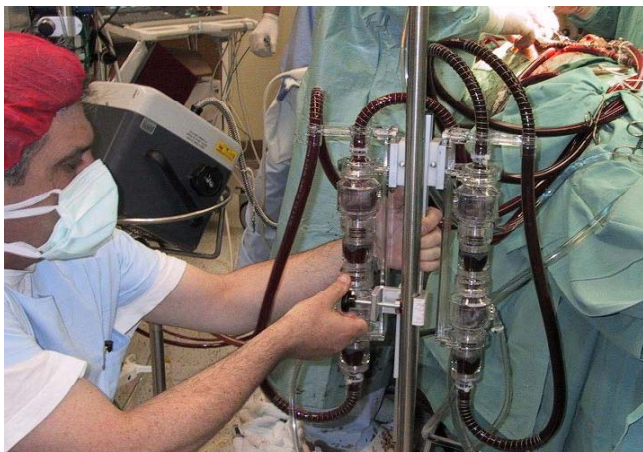
- i. To establish and maintain a credentialing process (examination) on the basis of which the Australasian Diploma of Perfusion qualification is awarded to appropriate applicants;
- ii. To establish and maintain a register of perfusionists who have been awarded the Australasian Diploma of Perfusion;
- iii. To support and to maintain education in perfusion in Australasia;
- iv. To establish a code of ethics and a code of practice for clinical perfusion.

## What Registration of Perfusionists would do

- ❖ It WOULD establish minimum standards of education, training, and competence for persons engaged in the practice of clinical perfusion in Australia and New Zealand
- ❖ It WOULD assure that the health and safety of the citizens of Australia and New Zealand are protected from unqualified practitioners, or from the unprofessional practice of clinical perfusion
- ❖ It WOULD assure that in the future anyone entering Australia and New Zealand to work as a clinical perfusionist meets a high standard of practice

## What Registration of Perfusionists would NOT do

- ❖ It WOULD NOT prohibit the employment of anyone currently working in Australia or New Zealand
- ❖ It WOULD NOT increase health cost in Australia or New Zealand



Ventricular Assist Device to recover sick heart



**Please contact for further information:**

*Ms. Alison Horton, Australia*

*Alison.Horton@mh.org.au*

*Mr. Darryl McMillan, Australia*

*mcmillan@mail.med.usyd.edu.au*

*Mr. Arthur Prevolos, Australia*

*A.Prevolos@alfred.org.au*

*Mr. Len Cooper, New Zealand*

*leonard.cooper@ccdhb.org.nz*

*Mr. Tim Willcox, New Zealand*

*TimW@adhb.govt.nz*

**AUSTRALASIAN SOCIETY OF CARDIO~VASCULAR  
PERFUSIONISTS INC**

**P.O. Box 921 Parkville, Victoria 3025, Australia**

**[www.perfusion.com.au](http://www.perfusion.com.au)**