

Global Cardiopulmonary Bypass Survey

1. Welcome to the Global Cardiopulmonary Bypass Survey

Dear colleague,

Thank you for agreeing to participate in this research project. It consists of 17 questions, and should only take 5 - 10 minutes to complete.

As a reminder, participation is entirely voluntary, and results will be deidentified and kept confidential. Our hope is that this survey will allow us to assess similarities and differences in adult cardiopulmonary bypass practice between various regions around the world. It has been approved by various professional bodies, including the SCA, EACTA and many others.

By continuing with this survey, you are indicating that you have read and understood our participant information form and consent to participation in the study. This form can be found [here](#).

It is possible that you may have received this survey from more than one source, as we have chosen to distribute it through the various regional specialist societies. If this is the case, please do not complete the survey more than once.

Thank you once more for agreeing to assist us with this important research project.

On behalf of the investigators,

Yours Sincerely,

Dr Lachlan Miles MBBS (Hons.) FANZCA
Clinical Fellow
Department of Anaesthesia and Intensive Care
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Cambridge, United Kingdom

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2. Previous participation

1. Have you completed this survey already?

☐ Yes

☐ No

3. Institution location

2. Which of the following best describes the region to which your institution belongs?

- ☐ North and Central America
- ☐ Europe
- ☐ Middle East
- ☐ Asia
- ☐ Africa
- ☐ South America
- ☐ Australia/New Zealand

3. To what country does your institution belong?

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4. Anticoagulation for cardiopulmonary bypass.

4. What is the minimum activated clotting time (ACT) that your institution considers safe before initiating cardiopulmonary bypass?

- ☐ Less than 350 seconds
- ☐ 350 seconds
- ☐ 400 seconds
- ☐ 450 seconds
- ☐ 500 seconds
- ☐ 550 seconds or greater
- ☐ My institution does not use activated clotting time

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5. Institutional case load

These questions assess the volume and demographics of "on-pump" cardiac surgery cases performed at your institution.

5. What is the approximate number of cases requiring cardiopulmonary bypass performed by your institution each year?

- ☐ Less than 250 cases
- ☐ 251 to 500 cases
- ☐ 501 to 750 cases
- ☐ 751 to 1000 cases
- ☐ More than 1000 cases

6. Please describe the rough percentage that each of the following case types makes up of your overall "on pump" case load. Please do not include "off-pump" cases. The sum of all answers must add up to 100%.

Isolated bypass grafting
or isolated valve
repair/replacement

Combined bypass
grafting and valve
replair/replacement

Multiple valve repair or
replacement

Redo bypass grafting or
valve repair/replacement

Thoracic aortic surgery

Heart transplant, ECMO
or ventricular assist
devices

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6. Cardioplegia practice

These questions assess the cardioplegia preferences and practices of your institution.

7. Which of the following techniques are used to arrest myocardial contraction in your institution?

- ☐ Chemical cardioplegia
- ☐ Cross-clamp ventricular fibrillation
- ☐ Both techniques are used

8. If applicable, what is the chemical cardioplegia technique most frequently used at your institution?

- ☐ Blood cardioplegia
- ☐ Crystalloid cardioplegia
- ☐ Both techniques are used with equal frequency
- ☐ Chemical cardioplegia is not used at my institution

9. If blood cardioplegia is used at your institution, what is the ratio of blood to crystalloid that you most commonly use?

- ☐ Blood cardioplegia is not used at my institution
- ☐ 1:1
- ☐ 2:1
- ☐ 3:1
- ☐ 4:1
- ☐ 5:1
- ☐ Other (please specify)

10. Which of the following best describes the most frequently used cardioplegia solution in your institution?

- ☐ St Thomas' solution
- ☐ Bretschneider solution/Custodiol HTK
- ☐ University of Wisconsin solution
- ☐ Celsior

Other (please specify)

11. Do you routinely use substrate enhancement in your cardioplegia solution?

☐ Yes

☐ No

12. What substrate enhancement do you routinely use in your cardioplegia solution?

☐ Glucose

☐ Calcium channel blockers

☐ THAM

☐ Aspartate

☐ Glutamate

☐ Esmolol

☐ Other (please specify)

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7. Priming solution practice

These questions assess the pump priming preferences and practices of your institution.

13. Which of the following are used as the final priming solutions of cardiopulmonary bypass circuits in your institution? More than one answer may be selected.

- ☐ Crystalloid only
- ☐ Colloid only
- ☐ Crystalloid and colloid
- ☐ Retrograde autologous perfusion

14. If crystalloid is used to prime your cardiopulmonary bypass circuit, which of the following do you most frequently use?

- ☐ 0.9% normal saline
- ☐ Hartmann's or Ringer's solution
- ☐ Plasmalyte 148
- ☐ My institution does not use crystalloid in our priming solution
- ☐ Other (please specify)

15. If a colloid is used to prime your cardiopulmonary bypass circuit, which of the following do you most frequently use?

- ☐ 4% albumin
- ☐ 20% albumin
- ☐ Hydroxyethyl starch
- ☐ Gelatin
- ☐ My institution does not use colloid in our priming solution
- ☐ Other (please specify)

16. Do you routinely add any additional compounds to your pump priming solution?

- ☐ Yes
- ☐ No

17. What additives do you routinely use in your pump priming solution? More than one answer may be selected.

☐ Heparin

☐ Bicarbonate

☐ Mannitol

☐ Corticosteroids

☐ Calcium

☐ Other (please specify)

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8. Thank you for completing the Global Cardiopulmonary Bypass Survey

Dear colleague,

Thank you for participating in this research project.

If you have any questions, comments, or concerns, please feel free to contact the study investigators Dr Lachlan Miles or Dr Florian Falter at GlobalCPBSurvey@gmail.com.

On behalf of the investigators,

Yours Sincerely,

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