

What is the optimal perfusion ?

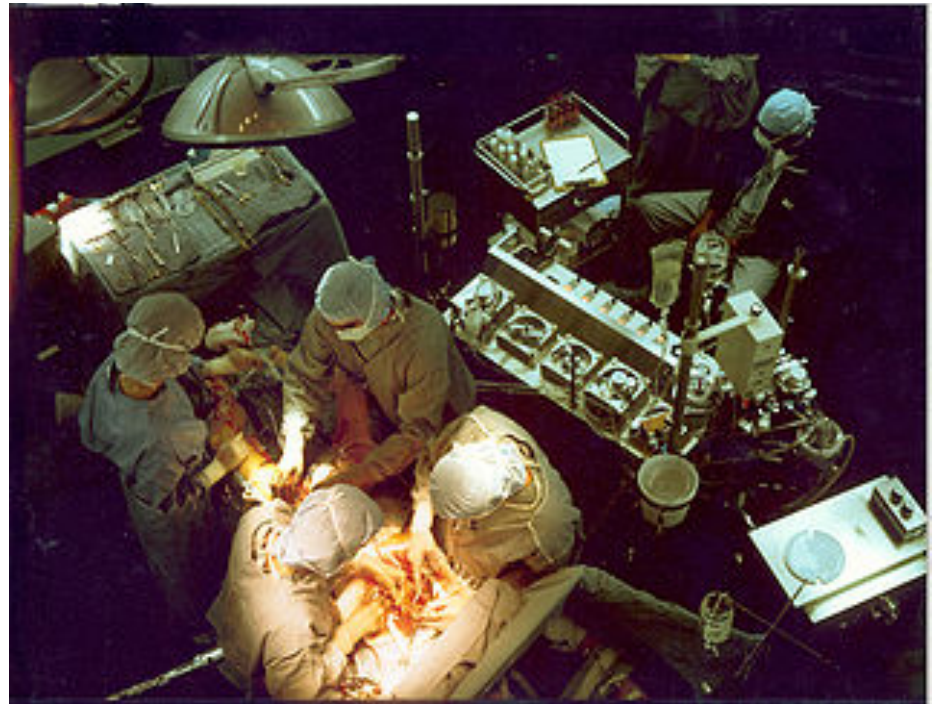


Odense 31 oktober 2009

Else Nygreen

Practical Knowledge

- **On the job-training**
 - Self-study
 - Caseload
 - Sharing knowledge
 - Evaluation
 - Clinical research
 - Innovation
 - Context knowledge



Evidence Based Knowledge



**Archie Cochrane: the
name behind the
Cochrane Collaboration**

*“Effectiveness and
Efficiency: Random
Reflections on Health
Services (1972)”*

Generalizable knowledge

Manual from ACC/AHA

Manual of 7 steps to create evidence based guidelines

1. Scope and Objectives
2. Literature searches
3. Sort and evaluate the evidence
4. Synthesize and interpret the evidence
5. Write recommendations
6. Assign classification and level of Evidence
7. Create Tables, Diagrams and Mnemonic

Classification of Recommendations

- **Class I:** Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective.
- **Class II:** Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
 - IIa. Weight of evidence/opinion is in favor of usefulness/efficacy
 - IIb. Usefulness/efficacy is less well established by evidence/opinion.
- **Class III:** Conditions for which there is evidence and/or general agreement that the procedure/treatment is not useful/effective, and in some cases may be harmful.

Level of Evidence

Level of Evidence A

Data derived from multiple randomized clinical trials

Level of Evidence B

Data derived from a single randomized trial, or non-randomized studies

Level of Evidence C

Consensus opinion of experts

Blood Conservation Guidelines

STS / SCA

Class IIa level C

Hb \leq 6 g/dl transfusion is reasonable

Class IIb level C

risk for end-organ failure keep Hb \geq 7 g/dl

Ferraris et al; Ann Thorac Surg 2007;83(5 Suppl):S27–S86



International Consortium of Evidence Based Perfusion

“to improve continuously the delivery of care and outcomes for our patients”

– Registry

- Create an international perfusion registry and facilitate its implementation
- Identify gaps between current and evidence-based clinical practice

– Guidelines

- Review, comment, and/or endorse evidence-based guidelines concerning the practice of cardiopulmonary bypass
- Collaborate with medical societies in the development of guidelines concerning the practice of cardiopulmonary bypass

Best Practice of CPB

1. Alpha stat pH management
2. Arterial line temperature to 37°C
3. Avoid direct reinfusion of unprocessed blood
4. Blood cell processing /filtration
5. TEE or epiaortic ultrasonographic scan
6. Arterial line filter
7. Blood glucose concentration
8. Reduce hemodilution
9. Reduced and surface modified circuit

Shann et al. An evidence-based review of the practice of cardiopulmonary bypass in adults: a focus on neurologic injury, glycemic control, hemodilution, and the inflammatory response. *J Thorac Cardiovasc Surg* 2006;132:283–90

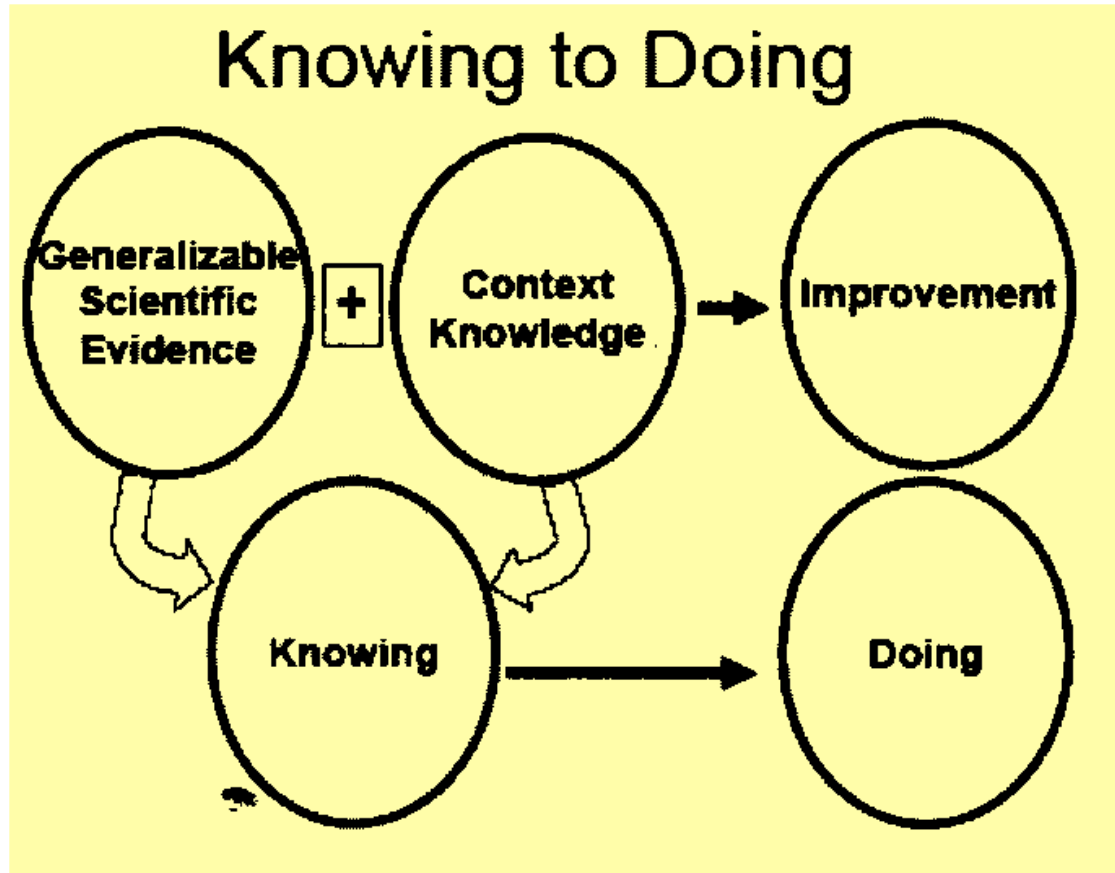
Optimal Perfusion During Cardiopulmonary Bypass: An Evidence Based Approach

Murphy, Hessel and Groom *Anesth Analg* May 2009

Conclusion

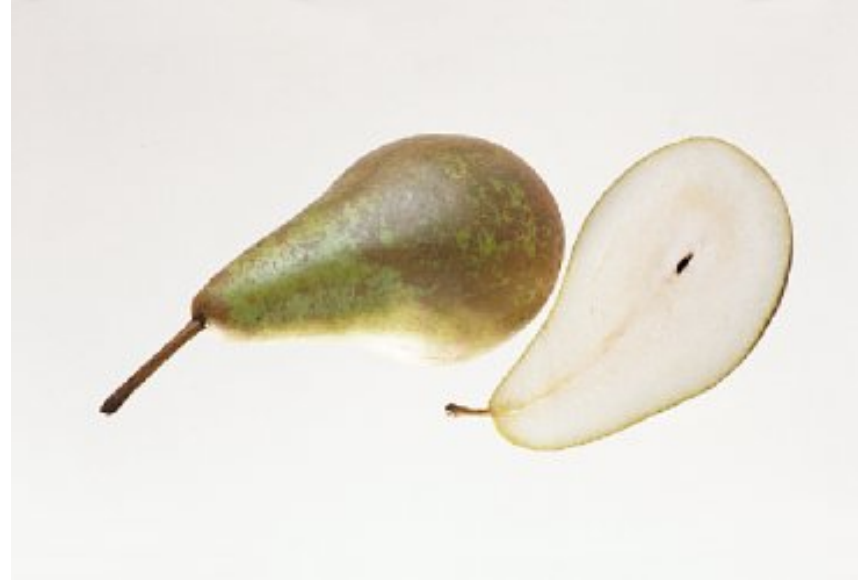
- A critical need for high quality studies particularly addressing high-risk patient groups
- Precisely define the components of the CPB circuit and the conduct of (techniques) of CPB.
- Make change when there is a gap between practice and written guidelines but make sure the change result in the intended effect.

Making Improvement



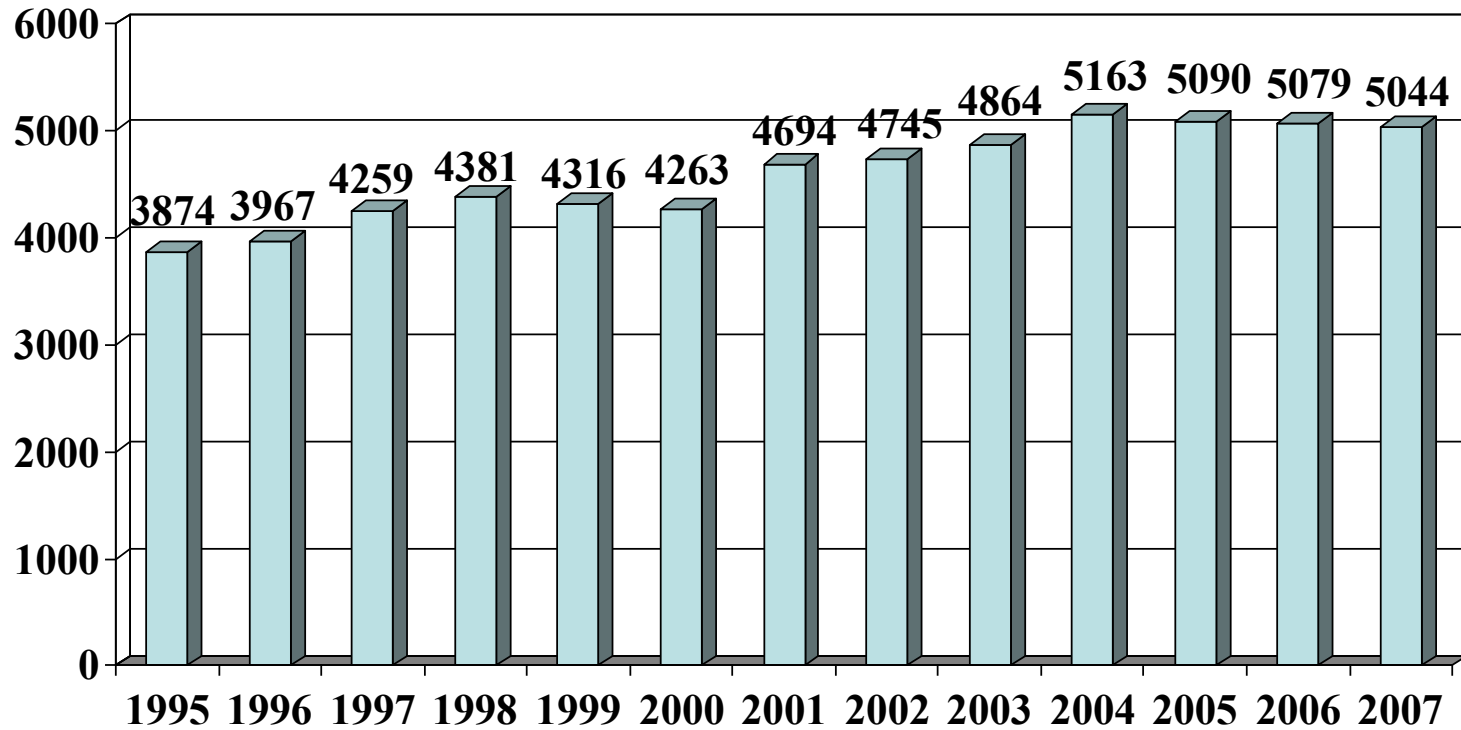
Knowledge is of no value unless you put it into practice

Registry



Heart surgery in Norway 2007

Heart lung machines



A Nordic Registry?

icebp International Perfusion Registry

Patient ID: 54 Record ID: 65 Based on 515 data Version: 2.61 Form Last Updated: October 14, 2009

SSN: _____ State or Province: _____ Country: _____
 Gender: Male Female Postal Code: 5343 Name Last: Adelaide First: One MI: _____
 Race: (select all that apply) White: Yes No Black: Yes No Date of Birth: 2/19/1932 Age: 76 (System Calculation)
 Native American: Yes No Asian: Yes No Medical Record Number: _____
 Native Hawaiian / Pacific Islander: Yes No Other: Yes No
 Hispanic or Latino Ethnicity: Yes No

Date of Surgery: 12/20/2007 Date of Admission: 12/22/2007 Date of Discharge: 12/28/2007
 Status: Elective Urgent Emergent
 Hospital Name: _____ Flinders Medical Centre State or Province: South Australia Country: Australia
 Physician Name: Robert A. Baker
 Procedure Type: CABG Valve CAB + Valve Other

Aortic Valve Procedure
 No Placement + Aortic Graft Conduit (not a valve conduit)
 Replacement Root Reconstruction with Valve Sparring
 Repair Reconstruction Resuspension Aortic Valve with Replacement of Ascending



V. Excel file

□ Data admission

You can fill in the items manually.

When you have to choose between different options: you can choose the right option in the menu provided in the cell of your datasheet (see image below):

A	B	C	D	E	F	G	H	I	J
1	CENTER NUMBER	DATE	SEX	AGE	LENGTH	WEIGHT	PROCEDURE	CONVERSION	PERFUSIONIST
2									
3							CABG valve(s)		
4							CABG valve(s) CABG native		
5							HTX		
6							ECMO/ECLS		
7							surgery on thorax left partial ECC		
8									
9									
10									
11									
12									
13									

- Compatible
- Electronic
- Easy
- Automated
- Safe
- Anonymous
- Retraceable
- Reports

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