Standards & Guidelines - Flipped Classroom

- No disclosures

\textit{Thank you!}

Two part Flipped Classroom

- 1. Creation of Standards & Guidelines
- 2. Exciting Pediatric World
- 3. Adult Updates
Standards & Guidelines
Flipped Classroom Content

- AmSECT’s Standards and Guidelines for Perfusion Practice
- Draft Version of Pediatric S&G’s
- Quiz in flipped classroom in AmSECT University

Objectives:

- To provide the background and history behind the creation of AmSECT’s Standards and Guidelines
- To understand why AmSECT invests resources into the development and distribution of the Standards and Guidelines
- Introduce AmSECT Standards and Guidelines Taskforce

Background

- 5 W’s
  - Who AmSECT & ICEBP
  - What the standards provide
  - When they were last updated
  - Why they were created
  - Where to find them

ARS

1. Are you aware of AmSECT’s S&G for Perfusion Practice (Adult) perfusion community?
2. Were you aware that the pediatric community is composing S&G specific to pediatric perfusion?
3. Has your institution adopted some of the S&G (Adult) as a result of the publication in 2013?
4. Do you think AmSECT developing Standards & Guidelines is of benefit to your institution?
5. How does your institution work to adopt changes such as the Standards & Guidelines?
   - Chief sets the rules
   - Surgical colleagues
   - Perfusion Team meetings to discuss adoption
   - Multidisciplinary Team meetings to discuss adoption
   - Approach varies
Who: International Consortium for Evidence-Based Perfusion

partnership and collaboration between perfusion societies, medical societies, clinicians, and industry to **improve** continuously the **delivery of care** and **outcomes** for our patients

- BOD October 2011
- AmSECT Committee - ICEBP
  - revise and update the Essentials and Guidelines for AmSECT

What the standards provide

- **Intention**
  - Framework for practice
  - Define expectations
  - Reduce variation

- **Goal**

- **Peer reviewed**
  - AmSECT members vote

- **Evidence-based**
  - Research, studies, data
  - Classification i.e: I, IIb, etc.
  - Levels of evidence
  - identify practices that are either mandatory or recommended

What the standards provide

- Expert opinion- consensus of clinical experience
  - ICEBP
  - BOD approved
  - AmSECT members

- Foundation of your clinical practice
  - How CPB practice should be done

- Supported by AmSECT
  - ONLY document
  - Framework for practice
  - Define expectations
  - Reduce variation

When they were last updated

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>October 2011</td>
<td>BOD present</td>
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<tr>
<td>March 2011</td>
<td>Review and feedback at AmSECT's 2011 International Perfusion Meeting from members and attendees.</td>
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<tr>
<td>December 2011</td>
<td>Draft submitted to BOD</td>
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<tr>
<td>Jan 8, 2012</td>
<td>Public Comment</td>
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<tr>
<td>March 2012</td>
<td>Review and feedback at AmSECT's 2012 International Perfusion Meeting from members and attendees.</td>
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<tr>
<td>April 2016</td>
<td>Draft submitted to BOD</td>
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<tr>
<td>Summer 2013</td>
<td>Submit final draft</td>
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<tr>
<td>Nov 2013</td>
<td>Final version</td>
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<tr>
<td>Oct 2013</td>
<td>BOD approved</td>
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<tr>
<td>March 2017</td>
<td>Intended discussion on Standards (AmSECT) &amp; ICEBP</td>
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Why they were created

- AmSECT Mission
  - To foster improved patient care by providing for the continuing education and professional needs of the extracorporeal circulation technology community

- Englert Strategic Plan
  - To support the work of the ICEBP by establishing a systematic approach for reviewing current practice techniques in extracorporeal circulation in order to publish Standards and Guidelines for the practice of perfusion

- IOM: Best Care at Lower Cost
  - The Path to Continuous Learning Healthcare in America
  - September of 2012

“Research organizations, advocacy organizations, professional specialty societies, and care delivery organizations should facilitate the development, accessibility, and use of evidence-based and harmonized clinical practice guidelines.”

Why

- Guide for our profession
  - In the right direction
  - How you get there
  - Where you are right now
    - Final destination
    - Practice - where you want it to be
    - Where it should be
  - In line with perfusion community

- Improve the delivery of care and outcomes for our patients
  - Classification ie: I, IIb, etc.
  - Levels of evidence

  Providing evidence-based care

Why: AmSECT invests resources into the development and distribution of the Standards and Guidelines

- Improve patient care
  - Framework for practice
  - Define expectations
  - Reduce variation

- Not 100% compliant
  - ARS

- Education available
  - More work to do

- Reach everyone
  - Different paths of learning
  - Meetings
  - AmSECT U
  - Team meetings
Key Elements

- Standard: Practices, technology and/or conduct of care that institutions shall meet in order to fulfill the minimum requirements for cardiopulmonary bypass.
  - Shall: mandatory requirement

- Guideline: A recommendation that should be considered and may assist in the development and implementation of protocols.
  - Should: recommendation

Where to find them

Standards & Guidelines Taskforce

- Bill DeBois Strategic Plan
  - Goal #1:
    - Quality Improvement: Improve the outcomes for patients undergoing cardiopulmonary bypass by facilitating the adoption of AmSECT’s Standards & Guidelines.
  - By December 31, 2018,
    - Organize a taskforce to identify strategies encouraging the institutional adoption of the S&Gs.

Objectives:

- To provide the background and history behind the creation of AmSECT’s Standards and Guidelines
- To understand why AmSECT invests resources into the development and distribution of the Standards and Guidelines
- Introduce AmSECT Standards and Guidelines Taskforce
  - Pediatric Standards & Guidelines - Ron Angona
Goals

- Background
- Process/Timeline
- Changes
  - Evidence level / Consensus
  - References

Background

- History
- Inquiries from the community/pediatric perfusionists
- Building off of the existing Standards and Guidelines document
- Inquiries from other international societies

Process/Timeline

- Standards and Guidelines Committee (June 2017-current)
  - Molly Oldeen, Ashley Hodge, Ron Angona, Tom Klein
- AmSECT Pediatric and Congenital Committee (February 2018)
- Fellow of Pediatric Perfusion Group (May 2018)
  - Survey sent to 110 FPPs, 58 respondents → 53% response rate
- ICEBP Committee (May/June 2018)
- Open Forum at AmSECT Pediatric Perfusion Meeting, Miami (October 2018)
- Present final version at AmSECT International, Nashville (March 2019)
Staffing Issues at Open-Heart Centers Offering both Pediatric and Adult Perfusion Service: 1998 Survey Results

D. Scott Lawnor, BS, CCP; Edward M. Darling, BS, CCP; Kevin Collins, BSN, CCP; Gregory R. Singla, BS, CCP; Ian R. Shearer, BS, CCP

To date, no guidelines are available to direct the practice of pediatric perfusionist toward a more successful practice. AnSCE has formed a pediatric committee, which coordinates continuing education seminars and facilitates communication within the pediatric perfusion community. Development of guidelines is stated as one of the pediatric committee’s goals.

Summary of Document Updates and Additions

- 3 New Sections
  - Circuitry
  - Priming
  - Fluid Management
- 11 New Standards and Guidelines
  - Various sections
- 5 Guidelines moved to Standards
  - Inline blood gas monitoring, cerebral oximetry, arterial blood flow distal to shunts, minimum acceptable hematocrit, n+1

Standard 7.12 Flow Distal to Shunts

- Arterial blood flow shall be monitored continually at a point in the CPB circuit where it accurately reflects the flow delivered to the patient during CPB (eg, distal to intra-circuit shunts).

Summary of ICEBP Comments:
- Agree with this being a standard in the adult S&Gs as well
Standard 7.12 Flow Distal to Shunts

- Summary of FPP Comments
- Key Concerns
  - Needed for centrifugal pump only?
  - Don’t understand?
  - Manufacturers need to catch up in peds, i.e., offering flow probes for 3/16" or 1/8" tubing
  - Prefer it states that it can be determined by deduction with other flow sensors within the circuit
  - This flow information not always documented in EMR, EPIC cannot allow for flow probe input capabilities
  - Difficult to achieve, most centers know size of shunts and compensate

Standard 7.6 Continuous blood gas monitoring

- Guideline to Standard
- Continuous inline blood gas monitoring shall be used, as well as point of care devices shall be readily available.

- Summary of ICEBP Comments:
  - Suggest breaking this Standard into 2: in-line blood gas monitoring (if there is evidence to support it as a Standard) & point-of-care devices. It would be helpful to share with us the evidence for moving in-line blood gas monitoring to a Standard.
  - Will create controversy. One might make the argument that if frequent blood gas measurements are done with readily available devices it might be sufficient

Survey Data

- 2011 International Pediatric Perfusion Practice Survey
  - North America: 83% Arterial in-line blood gas monitoring
- 2018 FPP Survey – 66/68
  - Does your institution currently use continuous blood gas monitoring (of any vendor) for any of your pediatric and congenital cases?

Standard 7.6: Blood gas analyses shall be monitored continually or at regular intervals during CPB (Appendix D). (NO CHANGE from original)

Standard 7.7: Continuous blood gas monitoring shall be used during CPB.

- Final Version:
- Standard 7.6: Blood gas analyses shall be monitored continually or at regular intervals during CPB (Appendix D). (NO CHANGE from original)
- Standard 7.7: Continuous blood gas monitoring shall be used during CPB.

- Split into two standards.
- 7.6 = Same as original with the addition of “with point of care devices”
- 7.7 = Same as original, except moved from guideline to standard. Removed “inline” to accommodate noninvasive monitoring.
- Renumber all standards following this.

Standard 16: Fluid Management

Standard 16.1: Fluid balance shall be monitored and documented continually during CPB.

Standard 16.2: The use of modified ultrafiltration (MUF) shall be utilized (unless contraindicated) to optimize hemodynamics and hematocrit.

Guideline 16.1: The use of zero balance ultrafiltration (ZBUF) should be considered during bypass.

- Summary of ICEBP Comments:
  - MUF still controversial, does literature support it? Example of contraindication?
  - Consider rewriting as guideline unless can share evidence supporting as standard
  - ZBUF – provide references
  - Move to Guideline
  - Change balance to dynamics

- Committee Comments:
  - MUF: probably move to guideline. General statement utilizing DUF, ZBUF, MUF

Standard 16: Fluid Management

Summary of FPP Comments →

- Key Concerns
  - Aborted MUF, personalized to authors
  - Fluid balance is too tricky on bypass, consider as guideline
  - MUF for smaller patients, not adult congenital, determined by Surgeon, not perfusion
  - No literature to support ZBUF
  - MUF standard is poorly timed and not consensus of community
  - Surgeon dependent
  - Define fluid balance
  - Correctly define ZBUF
  - Reword to “dilutional or zero balance”
Standard 16 Committee Decision

- Final Version

**Standard 16.1:** Fluid balance shall be monitored continually and documented during cardiopulmonary bypass (CPB).

**Standard 16.2:** The use of modified ultrafiltration (MUF) shall be utilized (unless contraindicated) to optimize hemodynamics and hematocrit.

**Guideline 16.1:** The use of dilutional or zero balance ultrafiltration (ZBUF) should be considered during CPB.

- S16.1 Move the word “continually” to not specify documenting continually
- S16.2 Discuss during Open Forum
- G16.1 Add “dilutional”

Challenges / Barriers

- Differences in clinical practices
  - Differences in knowledge base
- Bias
- Evidence (lack of)
AmSECT’s Standards & Guidelines for Perfusion Practice

- Objectives:
  - Share how S&G’s can be leveraged to improve practice
  - To discuss updates that have been made to the document since the last release date (May 2017)
  - Discuss real life opportunities and experiences regarding the adoption of the Standards and Guidelines

ARS

Were you aware of the latest updates to AmSECT’s Standards and Guidelines for Perfusion Practice?

This would include the addition of Standards 12, 14, 15, 16

- Stnd 12 suckers & protamine
- Stnd 14 protocols for standby cases & staffing
- Stnd 15 n+1
- Stnd 16 adequate rest

- Yes
- No

Share how S&G’s can be leveraged to improve practice.

- Management tool
  - Improve patient care
  - Framework for practice
  - Define expectations
  - Reduce variation

- Administration knowledge
  - Awareness – exist
  - Knowledge – what we do
  - Expectations from our professional society

- Bargaining chip
  - Equipment (#6)
  - Staffing (#15)

- Financial responsibility
  - Backing

Standard 12.1 protamine

Cardiotomy suction shall be discontinued at the onset of protamine administration to avoid clotting within the CPB circuit.

As a team do you discontinue suckers at the onset of protamine?

- Yes
- No
Standard 14.1

Procedures identified preoperatively to be at elevated risk of requiring conversion to cardiopulmonary bypass (CPB) shall have a protocol for transition to CPB.

Does your team have a written protocol for standby cases?
- Yes
- No

Standard 14.2

One Perfusionist shall be assigned for each such procedure.

Does your team allow for 1:1 coverage?
- Always
- If we can
- Depends on the critical level of the case

Standard 14.3

A heart-lung machine consisting of a sterile extracorporeal set-up and ancillary equipment shall be readily available for the procedure.

What does “readily available” mean to your team?
- Dry pump in pump room or hallway just outside O.R.
- Dry pump in O.R. including all necessary supplies for CPB
- Wet pump in pump room or hallway just outside O.R.
- Wet pump in O.R. including all necessary supplies for CPB

Guideline 15.1

The “n+1” staffing model should be utilized at all times, where “n” equals the number of operating/procedure rooms in use at any given time at a single site.

Does your team follow the “n+1” staffing model?
- Yes
- No
- Before 5 pm
- Not an option in our institution*
Standard 16.1

Rest

In order for the Perfusionist to ensure proper provision of care, he/she shall receive an adequate rest period between scheduled work hours.

What does “adequate rest period” mean to your team?
- 8 hours between shifts
- We get the next day off no matter what
- We don’t have an “adequate rest period” – we work when there’s a need, regardless of hours on or rest periods between

Guideline 16.1: The Perfusionist should receive a minimum of 8 hours of rest period for every 16-hour consecutive work period.

Does your team allow for 8 hours of rest period?
- Always
- If the clinical schedule allows
- We don’t have an “adequate rest period” – we work when there’s a need, regardless of hours on or rest periods between

Objectives:
- Share how S&G’s can be leveraged to improve practice
- To discuss updates that have been made to the document since the last release date of (May 2017)
- Discuss real life opportunities and experiences regarding the adoption of the Standards and Guidelines

Panel

- Discuss real life opportunities and experiences regarding the adoption of the Standards and Guidelines.