The Role of Simulation in Perfusion: A 2010 survey of the perfusion community

A joint collaboration between the

American Academy of Cardiovascular Perfusion

and the

American Society of Extracorporeal Technology

Collected and complied by:
Edward M. Darling, CCP
Upstate Medical University
**Background:** Simulation in healthcare has emerged as an important aspect of basic skills training, competency assessment, and for on-going continuing education. The impact of simulation on perfusion is unknown, but it is incumbent for professional organizations to monitor the trends within the profession. Therefore the aim of this study is to survey the perfusion community in order to understand the current knowledge, perceived needs, and acceptance of perfusion simulation by perfusionists.

**Methods:** The web-based survey (SurveyMonkey) was delivered electronically via Perflist/Perfmail and membership rosters. Construction and beta testing was the AmSECT Simulation Taskforce and the AACP Simulation committee.

**Results:** There were 498 respondents of which 424 were certified clinical perfusionists. Given the population of CCPs (3811) in 2010 this gives this survey a confidence interval of +/- 4.49. The raw data is shown on the remainder of this manuscript.
Greetings!

The American Academy of Cardiovascular Perfusion (AACP) and the American Society of Extracorporeal Technology (AmSECT) are jointly collaborating on a project to research, explore and develop simulation training in the perfusion field. We are hosting this survey to help us understand the attitude and knowledge the perfusion public has regarding perfusion simulation and the perceived needs and acceptance of simulation by perfusionists. We believe perfusion simulation can be an excellent adjunct to improve patient safety, therefore, we are also collecting some data regarding the current safety practice and culture across the world.

Your responses are COMPLETELY ANONYMOUS. Thank you for your participation!

Danny FitzGerald
President, AACP

Susan Englert
President, AmSECT

Click "Next" to get started with the survey.
Q1 Where do you live?

Answered: 498  Skipped: 2

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>23.09%</td>
</tr>
<tr>
<td></td>
<td>115</td>
</tr>
<tr>
<td>Southeast</td>
<td>20.88%</td>
</tr>
<tr>
<td></td>
<td>104</td>
</tr>
<tr>
<td>Midwest</td>
<td>25.10%</td>
</tr>
<tr>
<td></td>
<td>125</td>
</tr>
<tr>
<td>West</td>
<td>14.46%</td>
</tr>
<tr>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Southwest</td>
<td>10.44%</td>
</tr>
<tr>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Alaska or Hawaii</td>
<td>0.40%</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>I live outside the U.S.</td>
<td>5.62%</td>
</tr>
<tr>
<td></td>
<td>28</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>498</td>
</tr>
</tbody>
</table>
Q2 Please check the box that BEST describes yourself.

Answered: 495   Skipped: 5

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfusion Student</td>
<td>3.84%</td>
</tr>
<tr>
<td>Staff Perfusionist</td>
<td>49.49%</td>
</tr>
<tr>
<td>Chief Perfusionist/Manager</td>
<td>35.76%</td>
</tr>
<tr>
<td>Full-Time Perfusion Education Faculty</td>
<td>4.44%</td>
</tr>
<tr>
<td>Locum Tenens</td>
<td>1.21%</td>
</tr>
<tr>
<td>Retired</td>
<td>2.22%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>OTHER (PLEASE SPECIFY)</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Cardiovascular Anesthesiologist</td>
</tr>
<tr>
<td>2</td>
<td>Perfusion doctor</td>
</tr>
<tr>
<td>3</td>
<td>Cardiovascular surgeon</td>
</tr>
<tr>
<td>4</td>
<td>Clinical Specialist–Perfusionist for 20 years</td>
</tr>
<tr>
<td>5</td>
<td>just retired as director of a perfusion program</td>
</tr>
<tr>
<td>6</td>
<td>helathcare professor</td>
</tr>
<tr>
<td>7</td>
<td>manufacturer</td>
</tr>
<tr>
<td>8</td>
<td>Inactive</td>
</tr>
<tr>
<td>9</td>
<td>Perfusionist leaving perfusion for medical school</td>
</tr>
<tr>
<td>10</td>
<td>On sabatical</td>
</tr>
<tr>
<td>11</td>
<td>contract perfusionist</td>
</tr>
<tr>
<td>12</td>
<td>prn. currently working in industry</td>
</tr>
<tr>
<td>13</td>
<td>Assistant Chief</td>
</tr>
<tr>
<td>14</td>
<td>Device Manufacturer</td>
</tr>
<tr>
<td>15</td>
<td>Education_Medical device manufacturer</td>
</tr>
<tr>
<td>16</td>
<td>Clinical Educator</td>
</tr>
<tr>
<td>17</td>
<td>VP, perfusion ops</td>
</tr>
<tr>
<td>18</td>
<td>Ecmo coordinator</td>
</tr>
<tr>
<td>19</td>
<td>both staff perfusionist &amp; Locums Tenens</td>
</tr>
</tbody>
</table>
Q3 Identify your professional credentials (check all that apply)

Answered: 490  Skipped: 10

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am currently Certified by the ABCP</td>
<td>86.53%</td>
</tr>
<tr>
<td>I am currently licensed by a state</td>
<td>40.20%</td>
</tr>
<tr>
<td>I am &quot;Certification Eligible&quot;</td>
<td>4.29%</td>
</tr>
<tr>
<td>I am a student and will pursue certification</td>
<td>3.67%</td>
</tr>
<tr>
<td>I am no longer certified but hope to re-enter the certification process</td>
<td>1.43%</td>
</tr>
<tr>
<td>I have retired from clinical practice</td>
<td>3.47%</td>
</tr>
</tbody>
</table>

Total Respondents: 490
Q4 Please describe your professional organization affiliation(s) AACP = American Academy of Cardiovascular Perfusion AmSECT = American Society of Extracorporeal Technology

Answered: 490    Skipped: 10

**ANSWER CHOICES**  | **RESPONSES**
---|---
I do not belong to any organization | 15.10% | 74
AACP Fellow | 7.14% | 35
AACP Member | 14.69% | 72
AACP Student Member | 1.43% | 7
AmSECT Active Member | 66.33% | 325
AmSECT International Member | 3.27% | 16
AmSECT Student Member | 3.88% | 19
I am a member of my state perfusion society | 25.71% | 126

Total Respondents: 490
<table>
<thead>
<tr>
<th></th>
<th>OTHER (PLEASE SPECIFY)</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AmSECT Life Member</td>
<td>3/15/2012 7:26 AM</td>
</tr>
<tr>
<td>2</td>
<td>ISHLT, ASAIO</td>
<td>3/9/2012 5:25 PM</td>
</tr>
<tr>
<td>3</td>
<td>ELSO,</td>
<td>2/28/2012 9:15 AM</td>
</tr>
<tr>
<td>4</td>
<td>Georgia doesn't have one</td>
<td>2/5/2012 12:51 PM</td>
</tr>
<tr>
<td>5</td>
<td>OMS-2</td>
<td>2/4/2012 9:25 AM</td>
</tr>
<tr>
<td>6</td>
<td>NE Nurses Assoc.</td>
<td>2/3/2012 8:25 PM</td>
</tr>
<tr>
<td>7</td>
<td>AmSECT Life Member</td>
<td>2/3/2012 6:22 PM</td>
</tr>
<tr>
<td>8</td>
<td>retired</td>
<td>2/3/2012 6:19 PM</td>
</tr>
<tr>
<td>9</td>
<td>Society of Thoracic Surgeons</td>
<td>2/3/2012 7:35 AM</td>
</tr>
<tr>
<td>10</td>
<td>AABB, SABM, STS</td>
<td>2/3/2012 2:21 AM</td>
</tr>
<tr>
<td>11</td>
<td>AmSECT member via paid mtg fee...</td>
<td>2/3/2012 12:43 AM</td>
</tr>
<tr>
<td>12</td>
<td>STS Associate Member</td>
<td>2/3/2012 12:06 AM</td>
</tr>
<tr>
<td>13</td>
<td>Member of the SSH and Am Soc Training &amp; Development</td>
<td>1/6/2012 5:23 PM</td>
</tr>
<tr>
<td>14</td>
<td>ANZCP and accredited in Australia</td>
<td>1/2/2012 10:46 PM</td>
</tr>
<tr>
<td>15</td>
<td>member of nesecc (dutch perfusion society)</td>
<td>1/2/2012 8:23 AM</td>
</tr>
<tr>
<td>16</td>
<td>European Board of Cardiovascular Perfusion</td>
<td>12/30/2011 1:41 PM</td>
</tr>
<tr>
<td>17</td>
<td>CSCP</td>
<td>12/30/2011 10:26 AM</td>
</tr>
<tr>
<td>18</td>
<td>I was a member of AmSect but forgot my password and there is no prompt to retrieve it</td>
<td>12/29/2011 10:09 AM</td>
</tr>
<tr>
<td>19</td>
<td>a member of my country's perfusion society</td>
<td>12/28/2011 1:19 AM</td>
</tr>
<tr>
<td>20</td>
<td>AmSECT Life Member</td>
<td>12/25/2011 4:58 PM</td>
</tr>
<tr>
<td>21</td>
<td>AmSECT Life Member</td>
<td>12/24/2011 12:05 PM</td>
</tr>
<tr>
<td>22</td>
<td>CSCP</td>
<td>12/24/2011 8:08 AM</td>
</tr>
<tr>
<td>23</td>
<td>MHAUS, SABM</td>
<td>12/23/2011 10:29 PM</td>
</tr>
</tbody>
</table>
Q5 What is your gender?

Answered: 489    Skipped: 11

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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</thead>
<tbody>
<tr>
<td>Female</td>
<td>31.08%</td>
</tr>
<tr>
<td>Male</td>
<td>68.92%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>
Q6 What is your age?

Answered: 492   Skipped: 8

![Age Distribution Graph]

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 25</td>
<td>5.49%</td>
</tr>
<tr>
<td>26 - 35</td>
<td>15.45%</td>
</tr>
<tr>
<td>36 - 45</td>
<td>16.87%</td>
</tr>
<tr>
<td>46 - 55</td>
<td>32.72%</td>
</tr>
<tr>
<td>56 - 65</td>
<td>27.64%</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>1.83%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>492</td>
</tr>
</tbody>
</table>
Q7 How long have you been a practicing perfusionist?

Answered: 490  Skipped: 10

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 years</td>
<td>14.29%</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>11.22%</td>
</tr>
<tr>
<td>11 - 15 years</td>
<td>8.16%</td>
</tr>
<tr>
<td>16 - 20 years</td>
<td>14.90%</td>
</tr>
<tr>
<td>21 - 25 years</td>
<td>17.96%</td>
</tr>
<tr>
<td>26 - 30 years</td>
<td>13.88%</td>
</tr>
<tr>
<td>31 - 35 years</td>
<td>12.65%</td>
</tr>
<tr>
<td>&gt; 36 years</td>
<td>6.94%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>490</td>
</tr>
</tbody>
</table>
Q8 Do you believe perfusion teams should have written protocols for:

<table>
<thead>
<tr>
<th>Event</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenator Change-out</td>
<td>95.11%</td>
<td>4.89%</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td>447</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Pump Failure</td>
<td>94.89%</td>
<td>5.11%</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td>446</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Air Embolism</td>
<td>95.96%</td>
<td>4.04%</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td>451</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>
Q9 Does your team have written protocols for:

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenator Change-out</td>
<td>72.57%</td>
<td>27.43%</td>
<td>452</td>
</tr>
<tr>
<td></td>
<td>328</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>Pump Failure</td>
<td>67.78%</td>
<td>32.22%</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td>305</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>Air Embolism</td>
<td>74.00%</td>
<td>26.00%</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>117</td>
<td></td>
</tr>
</tbody>
</table>
Q10 Crisis Management: Do you believe that perfusionists should practice the following on a regular basis:

Answered: 468  Skipped: 32

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenator Change-out</td>
<td>88.89%</td>
<td>11.11%</td>
<td>468</td>
</tr>
<tr>
<td></td>
<td>416</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Pump Failure</td>
<td>88.87%</td>
<td>11.13%</td>
<td>467</td>
</tr>
<tr>
<td></td>
<td>415</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Air Embolism</td>
<td>87.12%</td>
<td>12.88%</td>
<td>466</td>
</tr>
<tr>
<td></td>
<td>406</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>
Q11 As a matter of WRITTEN DEPARTMENTAL POLICY, do you and your team practice any of the following? (at least annually)

Answered: 451  Skipped: 49

<table>
<thead>
<tr>
<th>Condition</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenator Change-out</td>
<td>40.35%</td>
<td>59.65%</td>
<td>451</td>
</tr>
<tr>
<td></td>
<td>182</td>
<td>269</td>
<td></td>
</tr>
<tr>
<td>Pump Failure</td>
<td>32.21%</td>
<td>67.79%</td>
<td>447</td>
</tr>
<tr>
<td></td>
<td>144</td>
<td>303</td>
<td></td>
</tr>
<tr>
<td>Air Embolism</td>
<td>25.17%</td>
<td>74.83%</td>
<td>445</td>
</tr>
<tr>
<td></td>
<td>112</td>
<td>333</td>
<td></td>
</tr>
</tbody>
</table>
Q12 Within the last 5 years, has your perfusion group ever participated in formal team practice (with anesthesiology, surgery, and perfusion) for any of the following scenarios?

Answered: 451   Skipped: 49

<table>
<thead>
<tr>
<th>Scenario</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenator Change-out</td>
<td>12.69%</td>
<td>87.31%</td>
<td>449</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>392</td>
<td></td>
</tr>
<tr>
<td>Pump Failure</td>
<td>12.72%</td>
<td>87.28%</td>
<td>448</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>391</td>
<td></td>
</tr>
<tr>
<td>Air Embolism</td>
<td>12.50%</td>
<td>87.50%</td>
<td>448</td>
</tr>
<tr>
<td></td>
<td>56</td>
<td>392</td>
<td></td>
</tr>
</tbody>
</table>
Q13 Do you work in a "culture of safety" - do you feel safe to speak up and safe to report your errors at work?

Answered: 459    Skipped: 41

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No - I work under constant fear every day/every case.</td>
<td>7.19%</td>
<td>33</td>
</tr>
<tr>
<td>No - but our team is getting better and working on it.</td>
<td>18.74%</td>
<td>86</td>
</tr>
<tr>
<td>Yes - we trust each other to share our errors to become better and safer.</td>
<td>69.06%</td>
<td>317</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5.01%</td>
<td>23</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>459</td>
</tr>
<tr>
<td>#</td>
<td>OTHER (PLEASE SPECIFY)</td>
<td>DATE</td>
</tr>
<tr>
<td>----</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>1</td>
<td>Moderately, it usually depends on the mood/tone set by the surgeon.</td>
<td>3/14/2012 8:26 PM</td>
</tr>
<tr>
<td>2</td>
<td>none</td>
<td>3/12/2012 7:28 AM</td>
</tr>
<tr>
<td>3</td>
<td>work in multiple hospitals some would be yes and some no</td>
<td>3/12/2012 1:29 AM</td>
</tr>
<tr>
<td>4</td>
<td>No - I think our OR team is pretty lax about safety.</td>
<td>3/11/2012 9:16 PM</td>
</tr>
<tr>
<td>5</td>
<td>co-workers..yes, chief..no</td>
<td>3/9/2012 7:03 PM</td>
</tr>
<tr>
<td>6</td>
<td>retired</td>
<td>3/9/2012 5:32 PM</td>
</tr>
<tr>
<td>7</td>
<td>I do product evaluations at numerous hospitals across the country and I see a lot of</td>
<td>2/11/2012 3:02 PM</td>
</tr>
<tr>
<td></td>
<td>incompetence in perfusion practices that concerns me and I highly recommend that every</td>
<td></td>
</tr>
<tr>
<td></td>
<td>perfusion group should not only have written protocols but they should also be mandated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to practice those protocols. I also handle the complaints all the disposable product</td>
<td></td>
</tr>
<tr>
<td></td>
<td>complaints/failures for the company I work for and there are numerous mis diagnoses in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>troubleshooting problems during CPB (such as changing out an entire CPB circuit when the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>problem was a centrifugal pump issue, oxygenator issue, ALF issue that they could not</td>
<td></td>
</tr>
<tr>
<td></td>
<td>diagnose.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I think yes, but I'm not absolutely sure we all share our experiences.</td>
<td>2/10/2012 9:54 AM</td>
</tr>
<tr>
<td>9</td>
<td>Our team consists of some &quot;untrustworthy&quot; co-workers, making it difficult on MANY</td>
<td>2/3/2012 8:34 PM</td>
</tr>
<tr>
<td></td>
<td>levels, for the rest of us to feel comfortable reporting the most minor of errors to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the group&quot;. It has evolved that these minor occurrences are discussed within a closed,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>trusted, group; then brought to the group as a whole as incidental discussion.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>retired and in active</td>
<td>2/3/2012 5:57 PM</td>
</tr>
<tr>
<td>11</td>
<td>Yes, if &quot;each other&quot; means our perfusion staff. None of us would trust the surgical or</td>
<td>2/3/2012 10:30 AM</td>
</tr>
<tr>
<td></td>
<td>administrative staff one wit.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>all incidents that occur are reported</td>
<td>2/2/2012 10:11 PM</td>
</tr>
<tr>
<td>13</td>
<td>I try to teach a culture of safety to our customers using simulation.</td>
<td>1/6/2012 5:24 PM</td>
</tr>
<tr>
<td>14</td>
<td>NA</td>
<td>12/30/2011 2:11 PM</td>
</tr>
<tr>
<td>15</td>
<td>Yes, but suggestions ignored.</td>
<td>12/29/2011 9:31 AM</td>
</tr>
<tr>
<td>16</td>
<td>Still learning to communicate with the team</td>
<td>12/27/2011 10:35 AM</td>
</tr>
<tr>
<td>17</td>
<td>sometimes....mistakes are &quot;more tolerated&quot; when made by physicians...</td>
<td>12/26/2011 4:25 PM</td>
</tr>
<tr>
<td>18</td>
<td>depends on error</td>
<td>12/26/2011 9:29 AM</td>
</tr>
<tr>
<td>19</td>
<td>No, our department is apathetic and will never change with current leaders in place</td>
<td>12/24/2011 8:10 AM</td>
</tr>
<tr>
<td>20</td>
<td>we strive to not make errors!</td>
<td>12/23/2011 1:47 PM</td>
</tr>
<tr>
<td>21</td>
<td>I'm honest about my errors and to notify team members so they can think about possible</td>
<td>12/23/2011 1:29 PM</td>
</tr>
<tr>
<td></td>
<td>solutions</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Student - I work under the guidance of a CCP</td>
<td>12/23/2011 11:44 AM</td>
</tr>
<tr>
<td>23</td>
<td>Am a student</td>
<td>9/6/2011 10:33 PM</td>
</tr>
</tbody>
</table>
Q14 Your exposure/knowledge of perfusion simulation includes (check all that apply):

Answered: 427    Skipped: 73

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have no knowledge/exposure to perfusion simulation</td>
<td>23.65%</td>
</tr>
<tr>
<td>I have attended a conference presentation on simulation in the past 2 years</td>
<td>47.78%</td>
</tr>
<tr>
<td>I have participated in a hands-on simulation workshop at a conference in the past 2 years</td>
<td>29.98%</td>
</tr>
<tr>
<td>I participate in simulation training at my institution</td>
<td>21.08%</td>
</tr>
<tr>
<td>My perfusion school used simulation as a peripheral adjunct to my clinical training</td>
<td>17.10%</td>
</tr>
<tr>
<td>My perfusion school used simulation as a major curricular component of my clinical training</td>
<td>6.79%</td>
</tr>
</tbody>
</table>

Total Respondents: 427
Q15 Perfusion and simulation are a good pair

Answered: 426   Skipped: 74

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>93.66%</td>
</tr>
<tr>
<td>Disagree</td>
<td>6.34%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>
Q16 Perfusion simulation is useful in training...

Answered: 433   Skipped: 67

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>NOT SURE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfusion Students</td>
<td>95.81%</td>
<td>0.93%</td>
<td>3.26%</td>
<td>430</td>
</tr>
<tr>
<td></td>
<td>412</td>
<td>4</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Entry-level Perfusionists (&lt;3 yrs experience)</td>
<td>86.51%</td>
<td>5.81%</td>
<td>7.67%</td>
<td>430</td>
</tr>
<tr>
<td></td>
<td>372</td>
<td>25</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Experienced Perfusionists</td>
<td>72.85%</td>
<td>10.67%</td>
<td>16.47%</td>
<td>431</td>
</tr>
<tr>
<td></td>
<td>314</td>
<td>46</td>
<td>71</td>
<td></td>
</tr>
</tbody>
</table>
Q17 State your position regarding the following statement: "The Accreditation Committee – Perfusion Education (AC-PE) should require perfusion education programs to document each student's competency in specific PRE-CLINICAL SKILLS before allowing a student to practice these skills on live patients."

Answered: 432  Skipped: 68

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>42.36%</td>
</tr>
<tr>
<td>Agree</td>
<td>40.51%</td>
</tr>
<tr>
<td>Disagree</td>
<td>9.03%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1.85%</td>
</tr>
<tr>
<td>No opinion</td>
<td>6.25%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>
Q18 State your position regarding the following statement:"The Accreditation Committee – Perfusion Education (AC-PE) should require perfusion education programs to incorporate perfusion simulation into their curriculum to document BASIC clinical skill competency."

Answered: 430   Skipped: 70

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>41.16%</td>
</tr>
<tr>
<td>Agree</td>
<td>39.30%</td>
</tr>
<tr>
<td>Disagree</td>
<td>10.23%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3.02%</td>
</tr>
<tr>
<td>No opinion</td>
<td>6.28%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>
State your position regarding the following statement: "The Accreditation Committee – Perfusion Education (AC-PE) should require perfusion education programs to incorporate perfusion simulation into their curriculum to document CRISIS MANAGEMENT clinical skill competency."

Answered: 433  Skipped: 67

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>45.73%</td>
</tr>
<tr>
<td>Agree</td>
<td>38.11%</td>
</tr>
<tr>
<td>Disagree</td>
<td>7.85%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3.00%</td>
</tr>
<tr>
<td>No opinion</td>
<td>5.31%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>433</td>
</tr>
</tbody>
</table>
Q20 What do you see as the primary barrier to the adoption of simulation by CCP's?

Answered: 426  Skipped: 74

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation is not the real thing. I get plenty of the real thing in the O.R.</td>
<td>12.44%</td>
</tr>
<tr>
<td>We are too busy to take time away from our daily duties to play in the Sim Lab.</td>
<td>18.08%</td>
</tr>
<tr>
<td>Simulation is too expensive, too complicated.</td>
<td>36.62%</td>
</tr>
<tr>
<td>We do not know how to get started.</td>
<td>11.74%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>21.13%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>426</td>
</tr>
<tr>
<td>#</td>
<td>OTHER (PLEASE SPECIFY)</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Two generational teams in our facility, the older generation unable to change and then there's the generation that still finds learning to be enjoyable!</td>
</tr>
<tr>
<td>2</td>
<td>Expense only</td>
</tr>
<tr>
<td>3</td>
<td>Good tool for primary perfusion education but not for practicing perfusionists.</td>
</tr>
<tr>
<td>4</td>
<td>I think they all apply!! I couldn't check them all</td>
</tr>
<tr>
<td>5</td>
<td>Unsure how close simulation comes to real thing and thus if beneficial</td>
</tr>
<tr>
<td>6</td>
<td>will come as technology evolves</td>
</tr>
<tr>
<td>7</td>
<td>Simulation is being primarily promoted by schools to enhance their standing. They have been less than forthright.</td>
</tr>
<tr>
<td>8</td>
<td>Not sure if it cost effective</td>
</tr>
<tr>
<td>9</td>
<td>Simulation can be started at any level and added to as you gain experence.</td>
</tr>
<tr>
<td>10</td>
<td>It is something that is not neccessary for practicing Perfusionists.</td>
</tr>
<tr>
<td>11</td>
<td>simulations are not realistic, hard to involve surgeon and anest</td>
</tr>
<tr>
<td>12</td>
<td>It requires a multidisciplinary team which is difficult to schedule together.</td>
</tr>
<tr>
<td>13</td>
<td>simulation should be an adjunct to training and certification but not the primary component</td>
</tr>
<tr>
<td>14</td>
<td>hard to initiate new policy</td>
</tr>
<tr>
<td>15</td>
<td>Simulation is not readily available for all perfusion programs.</td>
</tr>
<tr>
<td>16</td>
<td>Do not know enough about its validity as a competency tool.</td>
</tr>
<tr>
<td>17</td>
<td>Writing the programs is time consuming and tedious.</td>
</tr>
<tr>
<td>18</td>
<td>#'s 2 and 3- too busy, and too expensive</td>
</tr>
<tr>
<td>19</td>
<td>Other</td>
</tr>
<tr>
<td>20</td>
<td>Simulations are done with somebody elses set up. It would be like getting checked out in a 747 when you fly and air bus. Things are not in the same place or my be done the same way.This was real obvious in a sim I just took.</td>
</tr>
<tr>
<td>21</td>
<td>simulation not available to every institution, requires work to start program</td>
</tr>
<tr>
<td>22</td>
<td>It is expensive, and may not represent the perfusionists real world environment adequately. Pump type, position, supply access, team composition, etc.</td>
</tr>
<tr>
<td>23</td>
<td>Adopting an actual simulator may be very unfeasible for some smaller institutions and there may be a lack of competent simulator operators/instructors. Simulators can be expensive and may take a long time to teach a perfusionist to be the operator.</td>
</tr>
<tr>
<td>24</td>
<td>It has never been a serious consideration/issue. But it should be</td>
</tr>
<tr>
<td>25</td>
<td>lack of methods to validate</td>
</tr>
<tr>
<td>26</td>
<td>Simulation is too expensive, not neccessarily too complicated.</td>
</tr>
<tr>
<td>27</td>
<td>Cost - will our hospital pay for this simulation? We only have $2000 for a meeting.</td>
</tr>
<tr>
<td>28</td>
<td>Simulation can be an useful adjunct and had been useful adjunct when properly applied. No confidence in the current leadership to pull it off properly. Politics and self serving atmosphere are the current status quo.</td>
</tr>
<tr>
<td>29</td>
<td>Perfusionists want to do their case and go home, they don't want to take the time to fine tune their skills and make sure they are competent in troubleshooting.</td>
</tr>
<tr>
<td>30</td>
<td>Time and cost</td>
</tr>
<tr>
<td>31</td>
<td>sites may be difficult to get to</td>
</tr>
</tbody>
</table>
Simulation in Perfusion

32 Simulation is good enough at meetings for "experienced" perfusionists

33 The natural tendency to overstate the value of a test and the cost: benefit ratio.

34 are all simulation machines the same?

35 it is expensive, & difficult to schedule time for sim lab especially for few meetings available

36 It is expensive and needs high level participants from several professions to provide high fidelity

37 expense issues

38 Don't have the extra time, staff, room, equipment, employer support to adopt. And we don't know how to get started.

39 B,C,D and the fact that this should start at the education level and SLOWLY work it's way up to certification level

40 Money

41 Simulation is a great tool for student education but would not fit in existing practices.

42 under staffed no time needed in clinical

43 Simulation can occur verbally with a dry pump and experienced perfusionists

44 Difficult to designate work time for scenario set-up, simulation and debriefing.

45 We at the end of the line for development of perfusion simulation in our SIM lab i.e. Anes. ECMO are in front.

46 Simulator and monitors need to be set up as equipment worked with and with the same team. There is a lot of non verbal and team specific communication that would cause variables that may cause misinformation and ideas in simulation outside that environment

47 Not in the physician culture. No Mandates by hospitals, accrediting organizations, state licensure acts

48 I would love it, but my older colleagues believe they are infallible and do not need refreshers.

49 Historically un-needed: would investigate on line simulation, as per for instance robotic training.

50 It is just a matter of doing it, even though we are busy we can make time

51 "I'm rfom the goverment and I am here to help"

52 It is not available, practical or economical for all practicing perfusionists to have. Hospitals are trying to save money any way they can and unfortunately, that can equate to doing with less experienced staff. Do not impose simulation on practicing perfusionists primarily, because it favors the students and staff who were fortunate enough to have it in their programs and hospitals.

53 FOR RECERTIFICATION THIS COULD BE INCLUDED

54 It's been so long since I attended school that I am out of the "education loop" and don't feel I have enough experience or background in "sim lab" to really know how it applies to the current state of Perfusion education.

55 Simulation may expose areas of weakness that we are not ready to admit

56 Apathy in the profession

57 Fear of failure, being embarrassed if they perform below standards

58 Expense and time resources make routine simulation startup quite difficult.

59 liability

60 There is no incentive for perfusionists to embrace/use/rely on simulation. Not enough "sim centers"

61 Simulation needs to be promoted and developed synergistically with other forms of education and not set up in a manner that is mandatory before it has developed appropriately.
<table>
<thead>
<tr>
<th>ID</th>
<th>Text</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>I think you will find a combination of all the above, with exception to cost.</td>
<td>1/2/2012 5:08 PM</td>
</tr>
<tr>
<td>63</td>
<td>Simulation is not readily available for all perfusion programs.</td>
<td>1/2/2012 11:41 AM</td>
</tr>
<tr>
<td>64</td>
<td>Simulation is expensive and complex - requires many person-hours to achieve.</td>
<td>12/30/2011 10:36 AM</td>
</tr>
<tr>
<td>65</td>
<td>The expense of High Fidelity Simulators &amp; availability from manufactures</td>
<td>12/29/2011 6:58 PM</td>
</tr>
<tr>
<td>66</td>
<td>Expense, space, equipment, dedicated/experienced staff to manage.</td>
<td>12/29/2011 8:09 AM</td>
</tr>
<tr>
<td>67</td>
<td>The culture of the group, whether they take this direction as a group.</td>
<td>12/28/2011 1:27 AM</td>
</tr>
<tr>
<td>68</td>
<td>Lack of interest and motivation with others</td>
<td>12/27/2011 1:26 PM</td>
</tr>
<tr>
<td>69</td>
<td>the first three apply, should have been able to choose multiple answers</td>
<td>12/27/2011 9:58 AM</td>
</tr>
<tr>
<td>70</td>
<td>People do not want to demonstrate their skills (or lack thereof) to be judged by peers</td>
<td>12/26/2011 8:30 PM</td>
</tr>
<tr>
<td>71</td>
<td>simulations for experienced perfusionists would be useful if conducted on the perfusionists own pumps, circuits, OR's etc...simulation is great if it simulates the perfusionists actual reality...</td>
<td>12/26/2011 4:30 PM</td>
</tr>
<tr>
<td>73</td>
<td>simulation is only a low grade approval of documenting steps to correct a situation. Has no bearing on what that person will do in the live operation with a patient hooked up to the machine</td>
<td>12/25/2011 8:05 PM</td>
</tr>
<tr>
<td>74</td>
<td>More superfluous than necessary</td>
<td>12/25/2011 5:02 PM</td>
</tr>
<tr>
<td>75</td>
<td>I think it is a combination of too busy, too complacent, don't want to think about it</td>
<td>12/24/2011 12:45 PM</td>
</tr>
<tr>
<td>76</td>
<td>Used for educational purposes only &amp; not to document deficiencies (as in big brother is watching &amp; this documentation will be made available to a larger audience)</td>
<td>12/24/2011 12:04 PM</td>
</tr>
<tr>
<td>77</td>
<td>Many fine CCPs have come from training programs where no &quot;simulation equipment&quot;, as I understandit, was required. Costs for competent schooling in all areas of secondary education are out of control today. This should be a consideration to help keep the field open to a broad range of potential candidates. I have no specific numbers on the cost of a simulation lab, but this may be inhibiting to some existing quality programs.</td>
<td>12/24/2011 11:19 AM</td>
</tr>
<tr>
<td>78</td>
<td>All the above plus if you ever experienced oral exams you know the possibility exits for knuckleheads to get into positions of overseeing simulations and you loose all credibility</td>
<td>12/24/2011 9:03 AM</td>
</tr>
<tr>
<td>79</td>
<td>apathy, insecurity, &quot;conscious vs. unconscious incompetence&quot;</td>
<td>12/24/2011 8:54 AM</td>
</tr>
<tr>
<td>80</td>
<td>afraid to be peer reviewed and evaluated</td>
<td>12/24/2011 8:15 AM</td>
</tr>
<tr>
<td>81</td>
<td>All of the above</td>
<td>12/24/2011 1:07 AM</td>
</tr>
<tr>
<td>82</td>
<td>Simulation is expensive and rural hospitals don't have the money. A waste of time to be done routinely at every meeting. Specific meetings may incorporate it as their primary objective for those that want it.</td>
<td>12/23/2011 4:59 PM</td>
</tr>
<tr>
<td>83</td>
<td>Experience in the OR trumps simulation. For perfusionists who have performed hundreds/thousands of cases, they will not see a need. However there is a need for simulation in perfusion education.</td>
<td>12/23/2011 4:16 PM</td>
</tr>
<tr>
<td>84</td>
<td>grading would be subjective/not institution specific</td>
<td>12/23/2011 3:06 PM</td>
</tr>
<tr>
<td>85</td>
<td>There are alot of variables, everybody comes from different hospitals, different ways of doing things. Familiarity, is key and that is hard to simulate.</td>
<td>12/23/2011 2:00 PM</td>
</tr>
<tr>
<td>86</td>
<td>no barrier</td>
<td>12/23/2011 1:31 PM</td>
</tr>
<tr>
<td>87</td>
<td>Simulation is a good tool but not a tool of measuring competency.</td>
<td>12/23/2011 1:31 PM</td>
</tr>
<tr>
<td>88</td>
<td>student</td>
<td>12/23/2011 11:48 AM</td>
</tr>
<tr>
<td>89</td>
<td>expense</td>
<td>12/23/2011 11:32 AM</td>
</tr>
<tr>
<td>90</td>
<td>Simulation would be fine if there was only way to set up and run a pump</td>
<td>10/1/2011 5:04 PM</td>
</tr>
</tbody>
</table>
Q21 Select Agree, Disagree or No Opinion for each of the following:

Answered: 431  Skipped: 69

<table>
<thead>
<tr>
<th>Statement</th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>NO OPINION</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A simulation based competency assessment should be added to the ABCP testing process for new grads to earn their certification</td>
<td>57.08%</td>
<td>29.00%</td>
<td>13.92%</td>
<td>431</td>
</tr>
<tr>
<td>Participation in simulation based training should be a requirement for perfusionists to renew their ABCP certification</td>
<td>25.52%</td>
<td>62.41%</td>
<td>12.06%</td>
<td>431</td>
</tr>
<tr>
<td>Successful performance in a graded simulation scenario should be a requirement for perfusionists to renew their ABCP certification</td>
<td>22.74%</td>
<td>66.82%</td>
<td>10.44%</td>
<td>431</td>
</tr>
</tbody>
</table>
Q22 Currently, our professional organizations are involved in the following initiatives:- AmSECT Simulation Task Force: Investigating opportunities for simulation in our community and initiate dialog with all other perfusion organizations on this subject.- AmSECT/AACP are discussing a mechanism to recognize perfusion simulation facilities that provide high quality perfusion simulation educational opportunities.- AmSECT/ICEBP (with the strong support of industry) have hosted hands on simulation sessions at professional conferences so perfusionists can experience a simulated patient.- ABCP has formed a committee to investigate simulation as an educational tool for perfusionists.Given this, please provide your input on the following:
Our professional organizations should apply its appropriate guidelines.

AmSECT should apply its appropriate guidelines.

AACP should apply its appropriate guidelines.

ABCP should apply its appropriate guidelines.

There should be a method for the accreditation of simulation in perfusion.
<table>
<thead>
<tr>
<th></th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>NO OPINION</th>
<th>TOTAL RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our professional organizations should be developing simulation opportunities for our profession.</td>
<td>75.64% 323</td>
<td>12.88% 55</td>
<td>11.71% 50</td>
<td>427</td>
</tr>
<tr>
<td>AmSECT should apply its resources to help develop our profession's infrastructure for perfusion simulation.</td>
<td>65.49% 279</td>
<td>18.08% 77</td>
<td>16.67% 71</td>
<td>426</td>
</tr>
<tr>
<td>AACP should apply its resources to help develop our profession's infrastructure for perfusion simulation.</td>
<td>58.29% 246</td>
<td>19.19% 81</td>
<td>22.75% 96</td>
<td>422</td>
</tr>
<tr>
<td>ABCP should apply its resources to help develop our profession's infrastructure for perfusion simulation.</td>
<td>59.57% 252</td>
<td>23.40% 99</td>
<td>17.02% 72</td>
<td>423</td>
</tr>
<tr>
<td>There should be a method for accrediting high quality perfusion simulation training centers</td>
<td>70.02% 299</td>
<td>14.52% 62</td>
<td>16.16% 69</td>
<td>427</td>
</tr>
</tbody>
</table>
The ABCP currently recognizes perfusion simulation activities as worthy of Category 1 CEU's. Given this, please answer the following: I would like to attend hands-on simulation training in

Benchmarking/Basic Skills... Agree: 60% Disagree: 30% No Opinion: 10%
Crisis Management... Agree: 75% Disagree: 10% No Opinion: 15%
Clinical Instruction... Agree: 65% Disagree: 25% No Opinion: 10%
Special Protocols &... Agree: 70% Disagree: 15% No Opinion: 15%
Risk Management (... Agree: 80% Disagree: 5% No Opinion: 15%
Simulation in Perfusion

<table>
<thead>
<tr>
<th></th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>NO OPINION</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmarking/Basic Skills (compare your skills to a pool of CCPs during a simulated standard case)</td>
<td>58.16% 246</td>
<td>26.48% 112</td>
<td>15.37% 65</td>
<td>423</td>
</tr>
<tr>
<td>Crisis Management (Practicing emergency drills)</td>
<td>81.32% 344</td>
<td>10.40% 44</td>
<td>8.27% 35</td>
<td>423</td>
</tr>
<tr>
<td>Clinical Instruction Skills (Tips for teaching students)</td>
<td>63.18% 266</td>
<td>15.68% 66</td>
<td>21.14% 89</td>
<td>421</td>
</tr>
<tr>
<td>Special Protocols &amp; Techniques (Mini-modules on a variety of clinical techniques)</td>
<td>78.62% 331</td>
<td>9.98% 42</td>
<td>11.40% 48</td>
<td>421</td>
</tr>
<tr>
<td>Risk Management (How to reduce your risk of litigation)</td>
<td>75.24% 316</td>
<td>11.43% 48</td>
<td>13.33% 56</td>
<td>420</td>
</tr>
</tbody>
</table>

# OTHER (PLEASE SPECIFY) DATE
1 Simulation is being promoted by self-serving organizations. The perfusionists as a whole should determine whether and how simulation should be implemented - not specific organizations. 3/13/2012 8:30 PM
2 If I were still working I would want to take all of the above 3/9/2012 5:43 PM
3 artificial hearts and other heart support devices 2/3/2012 9:46 PM
4 I already did participate. What I want are the standardized best practice P&Ps that I can put our company logo on and bring into practice! 2/3/2012 5:05 PM
5 Should be used as a teaching tool, not comparing or grading 2/2/2012 11:45 PM
6 Before the organizations can USE simulation, you need to train your educators on HOW TO USE simulation appropriately. Methods and theories for teaching students is very different than testing/accrading adult practitioners. 1/6/2012 5:34 PM
7 Again, most valuable if it can accurately simulate the environment in which a perfusionists actually works...a difficult task... 12/26/2011 4:30 PM
8 Open Heart TEAM simulation experience 12/25/2011 1:56 PM
9 VAD's, ECMO, IABP 12/24/2011 10:42 AM
10 Simulation could probably standardize the procedure of crisis management. Also develop outside the box thinking. 12/23/2011 1:36 PM
11 Trying out new equipment, before bringing to the OR 9/2/2011 5:42 PM

32 / 48
Q24 For 8 hours of hands on simulation training - that earn CAT 1 ABCP CEU - I would be willing to pay up to:

Answered: 405  Skipped: 95

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>$200</td>
<td>44.44%</td>
</tr>
<tr>
<td>$300</td>
<td>15.56%</td>
</tr>
<tr>
<td>$400</td>
<td>13.09%</td>
</tr>
<tr>
<td>$500</td>
<td>3.46%</td>
</tr>
<tr>
<td>$600</td>
<td>0.99%</td>
</tr>
<tr>
<td>&gt;$600</td>
<td>1.48%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>OTHER (PLEASE SPECIFY)</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>no opinion see above</td>
</tr>
<tr>
<td>2</td>
<td>Not sure</td>
</tr>
<tr>
<td>3</td>
<td>not sure</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>i really have no idea what a fair cost would be.</td>
</tr>
<tr>
<td>6</td>
<td>nothing</td>
</tr>
<tr>
<td>7</td>
<td>should be part of every national meeting with no extra cost</td>
</tr>
<tr>
<td>8</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>only if part of a larger course including lectures as well</td>
</tr>
<tr>
<td>10</td>
<td>75</td>
</tr>
<tr>
<td>11</td>
<td>$250</td>
</tr>
<tr>
<td>12</td>
<td>8 hours sounds like a long time for experienced CCPs. Recommend less time, smaller groups for as low a feasible for the cost. Many people are not reimbursed anymore. If AmSECT tries to rake people over the coals financially for this, it will fail. It should be used as a tool for self-improvement, not for turning profit in &quot;professional&quot; societies who already overcharge on dues.</td>
</tr>
<tr>
<td>13</td>
<td>I currently train with simulation and feel no need to pay</td>
</tr>
<tr>
<td>14</td>
<td>dont find this something i would pay for</td>
</tr>
<tr>
<td>15</td>
<td>$100</td>
</tr>
<tr>
<td>16</td>
<td>150</td>
</tr>
<tr>
<td>17</td>
<td>Nothing. You can make a wet leb and practice these skills.</td>
</tr>
<tr>
<td>18</td>
<td>nothing out of pocket, if covered by education funding maybe $400 for 8hrs</td>
</tr>
<tr>
<td>19</td>
<td>Less than 200, a $350 confrenece usually gives more than 8 credits.</td>
</tr>
<tr>
<td>20</td>
<td>nothing</td>
</tr>
<tr>
<td>21</td>
<td>nothing since it would be a different system</td>
</tr>
<tr>
<td>22</td>
<td>I would be what ever is feasibly reasonable to support the program.</td>
</tr>
<tr>
<td>23</td>
<td>$0</td>
</tr>
<tr>
<td>24</td>
<td>nothing</td>
</tr>
<tr>
<td>25</td>
<td>Depends on how MANY ceu's.(should be at least 10). But no more than $200</td>
</tr>
<tr>
<td>26</td>
<td>0.00</td>
</tr>
<tr>
<td>27</td>
<td>Should be free with sponsorship from industries</td>
</tr>
<tr>
<td>28</td>
<td>Depends on how many CEUs</td>
</tr>
<tr>
<td>29</td>
<td>$200 for 10 CEU's ?</td>
</tr>
<tr>
<td>30</td>
<td>$0</td>
</tr>
<tr>
<td>31</td>
<td>$100.00</td>
</tr>
<tr>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>33</td>
<td>it should be incorporated in the meeting $$$$$$$$$$$</td>
</tr>
<tr>
<td>34</td>
<td>less</td>
</tr>
<tr>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>36</td>
<td>I’m not sure. It would depend on the topics and location.</td>
</tr>
<tr>
<td>37</td>
<td>$0.00</td>
</tr>
<tr>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>39</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>retired-this is all inappropriate to answer</td>
</tr>
<tr>
<td>41</td>
<td>nothing</td>
</tr>
<tr>
<td>42</td>
<td>It was only as good as the moderator. I didn't learn anything, while the room next door seemed excited. No money.</td>
</tr>
<tr>
<td>43</td>
<td>I don't need hands on training</td>
</tr>
<tr>
<td>44</td>
<td>150</td>
</tr>
<tr>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>46</td>
<td>100.00</td>
</tr>
<tr>
<td>47</td>
<td>nothing</td>
</tr>
<tr>
<td>48</td>
<td>If my Hospital pays thats ok however I would not pay</td>
</tr>
<tr>
<td>49</td>
<td>$100 organizations are just like the goverment and are not careful with others money</td>
</tr>
<tr>
<td>50</td>
<td>Nothing, we charge for procedures not the other way around.</td>
</tr>
<tr>
<td>51</td>
<td>really</td>
</tr>
<tr>
<td>52</td>
<td>Difficult for smaller groups to allow one perfusionist to leave or the expense it too great to travel etc. Many have lost their education funding from their institution</td>
</tr>
<tr>
<td>53</td>
<td>100.00</td>
</tr>
<tr>
<td>54</td>
<td>are you kidding me! No, it should be provided cost free to members of Amsect.</td>
</tr>
<tr>
<td>55</td>
<td>$100</td>
</tr>
<tr>
<td>56</td>
<td>Not Sure</td>
</tr>
<tr>
<td>57</td>
<td>0</td>
</tr>
<tr>
<td>58</td>
<td>LIMITED TO SMALL GOUPS OF 4-6</td>
</tr>
<tr>
<td>59</td>
<td>Compared to what?? This is a ridiculous question! We have to get CEU's to remain certified. If I MUST go to mtg's, I cetainly don't want to be required to pay ADDITIONAL $$ to earn CEU's!</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>61</td>
<td>50</td>
</tr>
<tr>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>63</td>
<td>$0</td>
</tr>
<tr>
<td>64</td>
<td>Would not</td>
</tr>
<tr>
<td>65</td>
<td>%60.00</td>
</tr>
<tr>
<td>66</td>
<td>$50.00</td>
</tr>
<tr>
<td>67</td>
<td>For only 1 Ceu it would be hard to charge a lot</td>
</tr>
<tr>
<td>68</td>
<td>&gt; or = $100</td>
</tr>
<tr>
<td>69</td>
<td>Depends who is being paid, if it is not for profit I would pay more than a for profit group. Also dependent on industry support level.</td>
</tr>
<tr>
<td>70</td>
<td>NA</td>
</tr>
<tr>
<td>71</td>
<td>no opinion</td>
</tr>
</tbody>
</table>

35 / 48
Should be a benefit for AmSECT members

50.00

nothing, more money for medtronic

Free

depends on how relevant the simulation was to my actual working environment

It depends on how bad people need CEU's. Some will pay anything to get CEU's

$0

Can't answer, don't know the degree of training.

0

$100

Nothing

I think it should be included in meeting prices or > $100

but would depend on what the program is - I would not just go to go - if it didn't offer something I wanted to learn, I wouldn't go if it was free

in addition to meeting costs

$100

not interested

None

$100.00

How bad do I need them? Definitely not $200+ It's an educational tool not a way to get more money from your peers.

no clue

Hospitals are not going to pay for this!!!

Reimbursement for CEU depends on hospital or employer. Added costs are thrown back on the individual. Lowering price to increase demand will justify raising prices later on.

0

nothing, this is not a fund raiser, wet pump simulations in an empty OR can be more practical than using a special sim room like MAYO, SARNS or UMSC group, it's time staff and cost prohibitive to go to one of those centers just to do a simulation, the "home Grown" or in house wet labs can be more focused and improve ones skill set. WHO make the MAYO an EXPERT.

Hospital or Medical groups should pay for this training
Q25 Should the ABCP give clinical case credit to approved simulation experiences at accredited simulation centers?

Answered: 429  Skipped: 71

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>56.18%</td>
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<tr>
<td>No</td>
<td>43.82%</td>
</tr>
<tr>
<td>TOTAL</td>
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</table>
Q26 Comments:

Answered: 124   Skipped: 376
After recently participating in a simulation exercise/program at a conference, the clinical instructors did a great job but it was a challenge since experience matters when teaching these clinical scenarios. It seems as though those from countries or programs with few cases or limited resources, seem to have a stronger sense of accomplishment or take-away knowledge.  

will come as technology evolves, should not be required for maintaining certification, we do not want to reintroduce a subjective measure to our certification process

Simulation has been promoted in a manner which benefits a few select institutions and should not be made mandatory. This has been a political process with financial - not professional overtones attached to it. Please note: I work in a very fast-paced, teaching environment where I must be proficient in a variety of techniques and procedures well beyond the standard perfusion practices. Simulation would just be one more unnecessary bureaucratic imposition to maintain my professional license/accreditation.

Simulation training is very important and should become part of our annual competency skills assessment processes.

Simulation trained students are having issues in the work force. There is too much of an over emphasis on pushing simulation and not enough time spent on the real thing.

To the best of my knowledge no other medical profession requires simulation testing on how to deal with every critical situation, would be impossible to do so. It is a good teaching tool for students, but if that were to become the standard of practice for practicing Perfusionists, the malpractice lawyers will have a field day. We at our institution have a review process for investigating and correcting critical situations internally.

With the integration of clinical simulation, I believe the ABCP should allow for clinical case requirements to be augmented by high quality graded simulation sessions in order to alleviate the mounting stresses for small hospitals to keep staff certified and proficient. CEU's are nice, but clinical cases are where our profession is seeing the greatest threat, with invasive cardiology and radiology putting a dent in our patient populations.

The current simulators are not yet to a level to replace real world experience. As they rapidly improve they will become more valuable in instruction and evaluation. Simulator training should become a mandatory portion of perfusion training but not the final measure of competency. I also do not believe that passing a simulator exam should ever be a part of the certification process. By doing this it will reintroduce the subjective element that was removed when the oral exams were discontinued. Having a requirement to attend simulator training would be a valid addition to certification as long as there is no "grading" component this would allow for it to be a better learning and skill improvement tool.

In addition to the questions you've asked, you would have to decide on what basis a simulation training center would be considered to be accredited. What makes one center more superior to another? Likewise, would these centers be available around the country in a reasonable travel distance for the majority of practicing perfusionists? Realistically the only centers that would have such availability, not to mention the means to run a successful center, would be ones that have the monetary backing, which in and of itself would limit these centers to university based settings and large cardiac hospitals. Finally, one the major points to simulations within one's heart program is that you can make it specific to the circuit you work with. Even if you have a great simulation center for one to train at, you can't make it unique to everyone's day to day and you cannot expect to standardize a pump setup across the nation, so there will inevitably be shortfalls.

It would be nice to have AmSect/ABCP generate guidelines for building simulation centers of excellence.

ABCP should not give case credit, CEUs are fine, but absolutely not case credit - simulations is NOT the real thing. There is a very real difference between a patient truly having their life on the line or a couple of "know-it-alls" telling you "you are killing my patient" during hands-on inservices or simulation training. Also, cost is a very real factor. If it is only going to be available to the university settings/ hospitals with money to blow, it will not be of benefit to all of the CCPs who are at the smaller/ poorer hospitals that they can't even get permission to buy paper clips.

Regarding why a simulation facility has not been instituted- I responded "expensive/complex". Bad selection of possible responses- of course it is complex! It is the cost that is the major
factor.

13 Simulation should be provided at accredited perfusion schools who have full time educators. AmSECT, the AACP and the ABCP should encourage perfusion schools to utilize simulation as part of their educational programs, but AmSECT the AACP and the ABCP should not be in the business of providing simulation. Contrary to the belief of many perfusionists, the ABCP certification has never been used to document clinical competency by perfusionists. It is intended to show that a perfusionist is clinically active.

14 Thank you for conducting this survey

15 Bear in mind that there are many perfusionists who work a solo program that find it difficult to get time off or afford time off in order to perform any additional mandated credentialing. I would be more in favor of simulation being offered at all national meetings, ones that have the facilities and the staff to operate the simulation. Simulation should be a major part of the students training especially air embolism, secondarily oxygenator change out. Making simulation a requirement for certification is a little bit too much.

16 I believe it is crucial that we incorporate simulation training throughout the course of our perfusion careers. It would be ideal to have access to such training 2-4 times a year without it being cost prohibitive. I look forward to this becoming standard of practice.

17 Nothing is better than wet labs, pig or dog labs with simulaton. Why pay all that money and add to the cost of schooling, boards, etc. think long and hard before you try to incorporate this shit and force people to do it.

18 The quality of the simulation & the honesty of the evaluation is the key to its value.

19 Questions 17,18, and 19 and question 21 should be taken out of this survey because this is all about education, not accreditation or certification. The Perfusion Standards are first sent to each organization and signed off on before CAAHEP approves the Standards. In other words, it is the Perfusion Profession that approves the Standards; not the AC-PE. The ABCP may very well add questions to their examination but they do not educate. I fully support Simulation for Perfusionists but the two organizations that monitor our student education and out Profession through certification can not become the voice of the profession.. Like the logo - It's about time

20 I answered no for #25 because although simulation could be a great tool, I don't think it should replace dialogue in meetings or lecture. Perhaps it could be used for a small limited number of pts per year. Also for as good as simulation seems, I don't think it needs to be pushed onto us unless there is a very open and transparent talk concerning expectations. Thanks for your work!

21 It is hard enough to make arrangements to attend meetings every year so everyone can attend on team, adding another obstacle such as simulation lab requirements would only take more time out from job

22 Simulation in schools is good (I think dogs are better except for crisis training) but have have to be set up for the system they are accustomed to. For crisis training where you want to create one skill it works very well. In retesting or even in crisis training for people who are out the frustration as I recently found out is useless. People communicate differently, the location of every monitor and button is different and they set up the oxygenator so you could not reach it to switch it out. I spent my time trying to find which tubing was which. As I said earlier pilots are tested only in the cockpit they fly. The airbus pilot does not get tested in a dash 7 cockpit and communication in the air industry is standard. Surgeons are not standard.

23 I think that the ABCP should not be the ones to initiate simulation training. I think that AmSECT and the AACP should be the primary organizations involved in the development. If the ABCP would like to give CEU's for these activities, I think that this would be appropriate.

24 This will allow Perfusionists that were forced out by not making clinical case requirement to stay in the field!

25 I believe Simulation can be invaluable for practicing scenarios that don't come up very often. Also, it is very useful for practicing with new technologies and equipment to make sure the perfusionist is comfortable. For example, if one were to use a system like RocSafe, a simulator is great. For students, it can be very helpful for some of the same things, but I feel completely safe teaching students in the traditional, evolutionary manner. Simulation could be a good adjunct for sure, but it is not the end all and doesn't replace real experience. Finally, CCPs running simulations for credit seems a throwback to the oral exam days. I appreciated those
exam, but it is tough to keep out subjectivity. We may be better off retesting our knowledge like PAs do as opposed to simulation. In summary, I like this tool very much, but I just believe it has a definite role.

26 Simulation even at low fidelity could be suggested on a simulation web site for those programs that can not afford to send people but can set up a low fidelity system and help themselves. It may not be the best training but helpful just the same to get going on some form of safety practice. 2/28/2012 9:22 AM

27 Simulation should HAVE been a part of perfusion education/improvement goals a LONG time ago. Obviously everyone wants to learn how to manage crisis and special situations, but we are too nervous to do it front of strangers(at a conference or meeting) because we dont have the confindence/skills it takes. In addition to centers, you should have a mobile unit/team that travels to the perfusionists and allows them to have simulation education in a town/city near them and at a time when it is best for them. And/ Or create a protocol that chefs are credentialed and they educate their own staff in the most critical situation simulations(pump failure, oxyg changeout, etc.) with each perfusionist being "signed off" by the chef or senior CCP 2/24/2012 7:59 PM

28 Who is looking to profit from this simulation? It looks like somebody has a product to sell and now wants the professional societies to build the market. Requiring simulation is akin to the current federal governments involvement in my personal business. 2/17/2012 4:11 PM

29 I would like to see clinical simulation replace the clinical activity report. Use simulation every 3 years instead reporting 40 cases a year. This would allow perfusionists to stay certified and move into other fields, management, or leave the profession for a while. The current structure of clinical activity reporting is obtuse and serves no purpose except to allow for the collection of money. It is discriminatory against the profession. 2/15/2012 7:53 PM

30 It has taken along time to get to this. Although I have been out of the field for a long time this is something that should be addressed. But is everybody too busy. And the cost and things have changed so much!!!! 2/12/2012 12:31 PM

31 This a very important endeavor that should kept in the hands of professionals with no personal agenda. Unfortunately, true the history of one organization, it will be going south as is the Evidence Base Perfusion practice is heading. Ex. Same stale speakers session after session and sponsorship of one speaker from Down Under with the same presentation year after year. 2/12/2012 9:29 AM

32 Cost cost cost????? P 2/11/2012 8:55 PM

33 From being involved with running several clinical simulations at conferences and at my company, I have heard several participants make comments about changing their practices after the effects they experienced or things they saw live during simulations. It's obvious from my experiences that you can talk about things like an over pressurized reservoir and what can happen but when perfusionists see it actually happening, it really makes an impact to the point of them improving their practices with VAVD. I have witnessed numerous other situations with perfusionists being totally amazed at some of the things they experienced during simulations where there was an air embolism, CP failure, oxygenator failure, etc.--the simulations made a huge impact. I think there should be low-fidelity as well as high-fidelity opportunities due to cost constraints. I have witnessed a lot of incompetencies and I think simulation is a way to make perfusionists more accountable and improve their skills in routine responsibilities as well as troubleshooting problems. Example of not paying attention to H&P and understanding how disease entities can affect CPB management: One frequent thing I see with oxygenators is that perfusionists will complain about an oxygenator's performance, they are measuring both ACTs and heparin levels, the ACTs are 600+ and the heparin levels steadily drop off to inadequate levels, the patient may have liver disease/failure and they don't treat the heparin level because the ACTs are 600+ but they don't look at the whole picture in that the patient has liver disease and their coagulation system is not normal. Fibrin lays down on the fibers of the oxygenator leading to decreased efficiency. There are many clinicians out there that don't understand this stuff or don't think about the patient's disease entities and how they can affect management during CPB. Someone changed out 3 oxygenators (2 from one manufacturer, then one form another manufacturer) and never treated their low heparin levels because on that case the ACTs were >700. I have seen this too many times. Here's a perfect example of where simulation scenarios could help mitigate these incompetencies. Simulation is a great tool to enhance anyone's skills, maintain competencies, teach one how to work through troubleshooting with hands on experience, and ultimately protect patients! 2/11/2012 3:27 PM
The ABCP will be very conservative on making any changes in regards to simulation. The holy grail of 40 annual clinical cases is antiquated, but any change towards applying case credits and simulation will be very controversial and divided. Data and outcomes are an evidenced way to show some validity to this point especially with new students.

The challenge to expanding the use of simulation to be used for recertification is the lack of standardization of perfusion equipment. It is impossible to evaluate a perfusionist’s clinical competency if they are unfamiliar with the perfusion equipment.

Simulation is a good thing. However, I am concerned with removing the subjectivity of the grading process and the who is judging. Concerning the grading and comparison, how are we to discern the correct flow / O2 / (insert other pt parameters) as being the best (“optimal”) answer beyond - low pressure: gave neo, turned up flow - Check mark. The value of practice of odd circumstances is a valuable thing and the sharing of mishap / work around / procedural process items is good. For those who get plenty of this in the OR (item on this survey), I weep for them and their pts. Cheers.

After 20 plus years I still treat every day in perfusion as a school day with something to learn. I still infinitely respect the danger of perfusion and treat every patient like family. The key to safety is to never get complacent. P.S. I love my family!

I think simulation is a great tool if utilized properly and for the right things. I don't think it should be tied to certification. I don't think it can compare to hours behind the pump. I think students and clinicians need pump cases to show they are competent and not a computer simulator. In a case you have a certain feeling and thought process because there is a patient under that drape. Simulation takes that away.

Simulation centers may require extra costs besides registration, which would include hotel and flight. That added cost for 8 hours of training. May go well into $1000 for a staff perfusionist. Staff Perfusionist Simulation would be an excellent tool for crisis management to standardize perfusionists in thought process. Student Perfusionist Simulation is essential to develop critical thinking and problem solving often not seen in the real world.

Simulation is only as good as the one running the simulation.

I had proposed this to the ABCP in 2000. I have designs for a virtual reality simulator that would meet the needs of the clinical perfusionist and a system tracking performance and giving credit for pump cases. I would be happy to be involved in the discussion moving forward. William Gibbons, LP, CCP OMS-2 williamgib@pcom.edu 610-608-5482 cell
Having students in a clinical rotation that have come from a MS level program with a nationally accepted simulation program -- the students have basic skills associated with perfusion but lack basic sterile technique, operating room decorum and an appreciation for the functions of other professionals in the OR. Simulation -- must be tailored to audience.

It's time has come but how you start and plan a phase in and implementation of simulation will determine the success and/or failure of Simulation becoming the new foundation of best practices.

Simulation -- must be tailored to audience.

Simulations are "practice", and "exposure" mediums. They are GOOD practice mediums, but still practice, and have limited application to reality.

Don't go overboard with the restrictions and slowly implement the requirements. Gradually introduce the changes for recertification and "do not only allow one way to do things" be the only correct way. Allow for some differences as they may be effective in the different environments. Facilities, finances, and availability are not the same everywhere.

have enough financial pressures without taking on the added expense of a simulation protocol. I do not see how you could possibly arrive at a standardized simulation protocol considering the vast differences in surgeon and perfusion preferences.

Sorry to not have answered so much of this. I have been retired for almost 20 years. During that time there have been vast changes. How can I, in good conscience, say something that would regulate what current people are doing? I could give a sort-of opinion, but there is much more involved in this than a thought that might apply... or not.

excellent tool for perfusion education centers.

Simulation training works well at large university/hospital based perfusion however in the small 1-4 perfusionists setting this would be too costly and difficult to regulate.

You should avoid having non-clinical perfusionist run simulations. It is like non-pilots training pilots.

Please see above comments. The P&Ps for oxygenator change out, pump failure and air embolism would be far more impactful to patients around the world. This topic is like someone with a hammer that thinks every problem can be solved with a hammer and they go around looking for nails. Do not go beyond educational opportunities with this.

As a seasoned perfusionist I was always taught to watch my circuit and scan every 10 to 15 second intervals and mentally go through scenarios and I still practice that today after 35 years of practice.

The ABCP allows 1 ceu/50min lectures. Why would 8 hrs. of simulation be only worth 1 ceu?

Is there any proof that perfusionists trained with simulation are better than those without that specific training? If simulation performance is made a requirement for ABCP recertification, the case requirement should be dropped. If simulation performance is made a requirement, it should be available at all national meetings as part of the CEU program. How can evaluators judging perfusionists performing simulations for recertification confirm that their evaluations are totally objective and not subjective? Will all perfusionists perform simulations for adult and pediatric scenarios? Will simulations programs used for recertification include scenarios other than CPB for all perfusionists? How will simulations programs used for recertification be certified themselves? Who would be the certifying body?

I am an interested in learning more about the AmSECT Simulation Task Force initiative mentioned above.

For education programs only, not after practicing perfusion in the real world.....

I am happy to see AmSECT & the AACP join together on this topic. I am a strong advocate for simulation training as I wrote my thesis on it in 2008. Being on the NC Medical Board, one area that has come to our attention is that a perfusionist can renew their CCP by only doing ECMO (no OR cases). In this situation, I think it would be appropriate for the ABCP to request a simulation based competency assessment. Because of my strong desire for this program to work, I would be happy to help. Feel free to contact me: Gretta Evans MPS, CCP, LP Wake Forest Baptist Medical Center gsevans@wfubmc.edu

The Perfusion simulator belongs in training programs(schools). Once the student has
graduated its time to practice on real patients, or they should not graduate.

67 I feel simulation centers are a great tool in teaching students. I do not feel a CCP should have to go through a simulation to maintain their certification.

68 I don't think simulation has a good place in the post graduation area, as long as a perfusionist is actively pumping the minimum number of cases then its not relevant. I think it is relevant in the educational process.

69 Simulation is specific to local and practise not just out of a cook book. How can we trust you to accomplish training for me that is apecfic for my institution and not just another opportunity for control and formation of another agency to tell me what to do.

70 Nothing, nothing, nothing replaces real world experience with an experienced surgical team that is focused on excellent patient outcomes!!!!!

71 I think the simulation labs should be used as a mode of education not a reason to certify or not. It should be encouraged, but not mandated. Many centers have different techniques and these simulation labs could teach us a lot, but I do not want to see a simulation lab designed by another center determine how I pump my case or determine if I stay certified or not.

72 I can not believe that perfusionists competencies are being placed under scrutiny by our organizations in conjunction with this so called "need" to have simulations. Having a written protocol would be enough with practice being done in our own institutions. I did not realize that you perfusionists are possibly using this a money making scheme for yourselves. I believe that students may benefit from this because of the low caseload in many centers. I do not believe that simulations should be imposed on experienced perfusionists as a mandate for our yearly abcp requirement. As for our institution, i do not believe that a new simulation machine will have any effect on any of our competencies.Economically, I feel that many institutions are still trying to catch up to electronic charting among many other mandates. You perfusion educators, need to get your head out of your asses and realize that many hospitals are struggling today just to stay afloat. I would opt instead close some of the perfusion programs and instead support the perfusionists who have worked diligently the past 1- 2 decades or more to provide state of the art perfusion to our patients. Simulation training would not be considered fair to perfusionists with no experience in your clinical simulator. The experience lies in working every day in the operating room, discussions with co-perfusionists and surgeons, research,etc. It does not come from being tested in a simulator for a day or two you morons. If you want a challenge, encourage perfusionists to go back to school and earn their Masters Degree in Perfusion or other related field.

73 You should NOT loose your CCP because of a clinical case requirement when simulation is available.

74 WORKING FOR MORE THAN 28 YEARS IN ONE CENTER WE STILL SEE IT IS NOT JUST THE MECHANICAL BUT THE SURGEON'S STRESS THAT IS PRESSING THE EDGE FOR ERRORS.

75 Simulators are great training tools, especially in perfusion schools. I'm not sure of their efficacy for truly experienced clinicians (doing mission work will expose one to all types of scenerios). I would like to see simulations offered (not required) towards recertification. The simulators should be available at the major perfusion meetings for both exposure and the opportunity to obtain educational CMEs.

76 Good job guys.

77 The target audience for your survey might be too wide. Those of us who began our professional career 20 or more years ago really are not concerned with how future Perfusionists are trained. We will always think that our education, with plenty of hours of study and 100's of clinical cases (ah, the good 'ol days!) was better than anything available today. That being said, it is good to see that some in our profession are trying to stay "current" in the approach to educating future Perfusionists. I do think, though, that relying on one more "electronic", "gaming type" or "simulated" educational tool is far less effective at teaching than experience behind a pump...Just my "old school" opinion...

78 Simulation is a part of a LEARNING education. To many factors are missing in a blank simulation to truly expose an experienced perfusionist to learning something of value.

79 simulation could be good but should never be mandated
80 I don't feel you should be judged on this but feel it would serve a better purpose if people felt they could do this without being judged. If they had the freedom to come share experiences. I feel it would be extremely helpful even for practicing perfusionists. I feel many are intimidate about getting in front of others and doing something wrong. It would be good to do as part of a team.

81 Simulation education is important in developing critical thinking and crisis management. It is a useful tool for developing multidisciplinary team communication and interaction. It should not be used as a punitive modality, simulation can be an amazing method of teaching high risk low occurrence events, but fear of failure can be an obstacle preventing perfusionists from participating.

82 You guys are constantly looking for ways to “govern” people. You're more interested in controlling other people than you are in the Profession. Go do your jobs and leave the rest of us do ours! Or run for office, you're more suited to politics than you are medicine.

83 Airline pilots use simulators all the time. I think that we should strive for that type of quality in our training programs.

84 Many perfusionists trained with none of this and have done fine. Why the push and added expense?

85 In my exposure to simulation, I feel it very important to re-introduce some sort of 'spontaneous' testing, such as oral boards OR simulation. Simulation may address many angles of concern in our profession from the students to new grad board testing to experienced professionals whose caseloads may not support 40 cases for recertification. If a certified center exists, all of these sectors of perfusionists may access training to ensure clinical competency, as well as clinical communication abilities - to which we currently have no insight. While I have no problem reaching my annual requirement, I would still be interested in the optional coursework by simulation (ER drills, teaching skills, etc) Thank you for strongly considering such modalities.

86 Simulation should only be an adjunct to teaching. As practicing CCPs simulation is not necessary, as we do cases daily and simulations wouldnt be helpful- except for those who don't do crisis management on a regular basis (which hopefully is most of us) - so crisis management scenarios are the only protocol for simulation that could benefit a CCP.

87 I am an educator for a device manufacturer (with an education degree) who has participated in numerous simulation programs for AmSECT, ICEBP, the STS, the TSDA, and the CSA. I would be very interested in helping plan the strategies for incorporating simulation into the perfusion education and recertification process. One of the 1st steps in this endeavor would be to incorporate a Train-the-Trainor program for those who would be involved in developing the curriculum and the assessment criteria that ultimately determines competency.

88 I think if there are set protocols in place at my own institution and these protocols or simulations are done here that we should be able to apply for credit as well instead of having to go to a course elsewhere.

89 Many of these questions would do well with the opportunity to qualify the answer, for example the last, yes clinical cases could be given for simulation but only a certain percentage of the points required for recertification should be able to be gained in this manner. Q3 does not have a response for Q/S respondents Q5 I am not sure about the relevance of gender in this survey. Q6 and 7. I hope that the results are reported in a manner that perhaps looks at a new variable age adjusted years of experience, recognising where those late into the profession may sit. Q17-19 I agree totally however with significant reservation, simulation is not ready to be the gate keeper.

90 I hope that this survey inspires not just the perfusion schools, but all perfusionists currently practicing to develop some sort of annual training aside from what most institutions or groups (like my own) do for a competency.

91 with the advent of drug eluting stent, I am seeing a decrease in CABG cases. The simulation will help the affected perfusionists to fulfill the required cases/year. I have attended one of the simulation training and it was very informative, better than than doing 15 opcab cases.

92 We need accredited simulation centers using similar approved protocols for evaluation. It is also important to develop low fidelity simulation exercises that the "average" perfusion department integrate into their practice.
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<th>Number</th>
<th>Content</th>
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<tr>
<td>93</td>
<td>Your survey was too black or white in the last few questions. I agreed with some of the questions with reservation, but I did have a differing opinion that was not in total disagreement. There was no response indication for this position - not an entirely well constructed survey for such an important issue!</td>
<td>12/30/2011 10:38 AM</td>
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<td>94</td>
<td>Re questions 17, 18, 19 I think it could be argued that &quot;simulation&quot; is being conducted in all perfusion education programs &amp; it is part of the standards. What I think you mean is &quot;High Fidelity Simulation&quot; I think there needs to be the distinction or clarification of the terminology used in these questions. Before this is used by ABCP or programs as voluntary or otherwise, who is going to validate the process??</td>
<td>12/29/2011 6:58 PM</td>
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<td>95</td>
<td>I think simulation and testing could be used IN LIEU of case load requirements for ABCP renewal, especially in circumstances where case loads are down or small programs. I believe this would benefit everyone, and satisfy the need for continuing &quot;clinical&quot; experience for certification/licensing.</td>
<td>12/29/2011 10:24 AM</td>
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<td>96</td>
<td>I have serious reservations about using simulation as a &quot;graded&quot; exercise. Each practitioner has hardware, disposables and protocols/procedures they work with that may not be compatible in the simulation setting. Using simulation for ABCP cert/recertification harkens me back to the oral examinations --- way too subjective!</td>
<td>12/29/2011 9:39 AM</td>
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<td>97</td>
<td>thank you for bringing this forward.</td>
<td>12/29/2011 8:10 AM</td>
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<td>98</td>
<td>The perfusion schools should be an integral part of this process as they should have the most experience with simulation.</td>
<td>12/28/2011 12:22 PM</td>
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<td>99</td>
<td>Great survey. I am a big proponent of having simulation for re-certification. This is a great idea.</td>
<td>12/28/2011 9:14 AM</td>
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<td>100</td>
<td>this is just a very expensive computer game for people who went into sales yet still want to call themselves a C.C.P.</td>
<td>12/27/2011 10:00 AM</td>
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<td>101</td>
<td>I think the economics of this is PREMATURE. The concept requires much more discussion. I don’t want to see this as a commodity (like board prep courses)... rather a tool to improve the profession. Simulation at some acceptable level is feasible at almost every facility. Also, absent was any mention of industry support for such an endeavor...</td>
<td>12/27/2011 7:57 AM</td>
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<tr>
<td>102</td>
<td>I do believe simulation tools are very helpful in continual education and training of new perfusion students, however, it should not be mandatory for perfusion programs. Simulation is helpful but should not be used in place of real live experience in the OR. In my experience over the years, students relying on simulation experience are not prepared for the real perfusion practice daily. Students need to simply be exposed daily to hard, complicated situations in the OR to be prepared for a perfusion career. AMSECT should not govern the requirements for simulation but let it be another tool that may be used in training not a burden to education programs, etc. Too much control over this process I see as leading to more headaches and hinderance to perfusionists rather than a beneficial training experience.</td>
<td>12/26/2011 3:47 PM</td>
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<td>103</td>
<td>tks</td>
<td>12/26/2011 9:35 AM</td>
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<td>104</td>
<td>Think this is a great idea- might be very high in cost but if you look at the cost of National meetings these days- may not really matter. Thank you for putting this together and I truly hope this comes into fruition.</td>
<td>12/26/2011 9:15 AM</td>
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<td>105</td>
<td>I think that AmSECT and AACP along with the Board may have a good idea to offer simulation for perfusionists. To use it as a formal ‘required’ or ‘in place of clinical’ is a step that will take perfusionists away from the clinical setting and the perfusionists that do little clinical work will use it to stay around and possibly hurt a patient thinking that the simulation is the real thing some day in the operating room.....I can hear it now....your honor I only did that in simulation I never expected the situation to happen for real.</td>
<td>12/25/2011 8:08 PM</td>
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<td>106</td>
<td>I have experienced HIGH FIDELITY perfusion simulation. It is real! Should be able to use HIGH FIDELITY simulation for clinical caseload for ABCP renewal.</td>
<td>12/25/2011 1:57 PM</td>
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<td>107</td>
<td>A big challenge to simulation would be the circuit. Due to the wide variety of perfusion circuit designs, a perfusionist would be more focused on becoming familiar with the foreign circuit, and possibly the pump, than they would on the simulated patient. That was an issue I encountered at a hands-on simulation I attended in New Orleans. Perhaps if I had an hour of practice then maybe, and I stress maybe, I would have felt comfortable enough to have my clinical skills assessed on a particular simulator.</td>
<td>12/24/2011 12:59 PM</td>
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Very interesting survey. I have attended simulations and have always felt the experience was beneficial. Simulation may be beneficial for skill learning and for skill maintenance. I am not sure if simulation has been validated for skill or just for thought process. When it comes to paying for simulation sessions there is probably a wide range of opinions about that. Perfusionists as a group are very guarded about their time and their money. They could be motivated by knowing that simulation is valid for retaining skills and learning new skills.

For simulation--we all practice differently in our individually environment. One way of doing things is not the same at every institution. It also seems that simulation is being "driven" by institutions that have a center already, will they receive "special" funding etc. ? Will certain actions or inactions deducted from simulation even if the patient is safe? Are there going to be points deducted from not finding the correct answer in time? These are some of the many concerns that I have if simulation is going to be criteria for recertification.

Thank you for doing this survey. The results should be interesting and published. We need to hear more about what AmSECT's simulation task force is doing.

Using this outside of training provides a slippery slope & places exceeding gate-keeper power.

My concern is that the people pushing for the simulation training are the same people profiting from it's usage. The testing would have to be a standardized set of scenarios so as not to be biased. I am against it's implementation.

Although I can see how simulation could help especially in perfusion training of students and POSSIBLY helping CCP's who struggle to maintain certification due to decreasing caseloads, I think you need to be very careful before the boards start to approve such programs. My only request is you take you time, do your homework and think this through before you make this part of the re-certification process. The possibility of it being out of control is too high.

I really appreciate the efforts of the board to improve patient safety and clinical outcomes.

rather than a pass/fail scenario for a simulation linked to recertification, the value is more in the experience and learning from the simulation. There are so many variables that you could find an excellent perfusionist at their centre/surgeon/pump/equipment do horribly at simulation with another surgeon/pump/equipment.

I believe that simulation should be the future, but realize that in order to PHASE it into the present community you need to go slow. Start offering it at all conferences, then in say 4-6yrs make it mandatory that everyone being recerted must sit ,but without penalty. then in another 3-4yrs make simulation training a mandatory phase of re-certification. I would love to discuss this further. Steven Nussear 973-452-5683 stevenussear@ureach.com

Its an educational tool. Certified perfusionists should earn CEU's for teaching students or even other OR staff (surgeons, PA's etc) about CPB. This technology should be used to increase knowledge and comfort levels behind the pump, not to put money in the pockets of the ABCP or other perfusion groups.

Differentiation between high-fidelity simulations must be made. What Midwestern U calls simulation is nothing like the sim center at Mayo. A standardized teaching curriculum should be developed if the efforts are to be on a national level. Like there is a set of standardized questions for the ABCP certification exam, there should be a set of standardized simulation scenarios and criteria. I would hate to see efforts be shot down like the oral boards were for failure to have consistent grading criteria.

I think it is a great tool for new students to learn some of the tasks that we are required to do as perfusionists. I think it has to be such an orchestrated production to get anything out of a simulation. I hope that we do not have CCP that never pump real cases and get their points from a simulation. If this happens, I think it is a terrible for the profession. Doing a simulation is NOTHING like doing a real case with a real life in your hands. I hope the leadership in perfusion does NOT let this happen! If you are not pumping 40 cases a year, you should not be a perfusionist.

I'm for simulation and standardization.

see a couple of answers back. HOme grown team or individual wet labs will have more benefit than an off site general simulation run by a staff who may do more make believe pump.
Simulation in Perfusion

SIMULATION cases than they do real perfusion. Like say the Sarns Clinical experts Perfusion schools should have this a a structured documentated program in their curriculum.

123  I think that simulation in a setting at a ABCP approved site could count as a case. Perhaps allow up to 5 full simulations a year to count as 5 cases. 4 hours of simulation time equals one case. Simulation checkoff before clinical should be the responsibility of the accredited program. Simulation as part of recertification in regards to a pass/fail should not be done, count them as cases only for recertification. 12/23/2011 11:54 AM

124  I have participated at the simulators in Ann Arbor and found it to be more of a challenge to figure out how to run the pump then any scenario thrown at me. Perfusion is about problem solving and making the right moves. Simulation seems to be about playing against a computer and running a pump with a completely foreign set up. I found it to be extremely poor trying to simulate real scenarios. 10/1/2011 5:10 PM