UK Intraoperative Cell Salvage Action Group

Intra-Operative Cell Salvage Survey

UK Report

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On behalf of the UK Cell Salvage Action Group
June 2011
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Background

This survey was undertaken by the UK Cell Salvage Action Group (UK CSAG) as a follow up to an initial survey conducted in 2007.

The questionnaire used in the 2010 survey was, where possible, based on the previous survey with additional questions inserted based on the supporting materials which have been developed as part of the UK Cell Salvage Action Group’s toolkit.

The UK CSAG was established in 2006 to help support the wider implementation of cell salvage as an alternative to donor blood and to facilitate a UK approach to its use. In the intervening years a Toolkit, including a range of education materials, has been developed.
Methodology

The questionnaire was based on an initial survey conducted by the UK CSAG in 2007 survey to enable comparison of data. Additional questions were supplemented based on new materials developed as part of the UK Cell Salvage Action Group since the original survey was conducted.

The survey was conducted online and was only circulated to organisations where a contact name for cell salvage had previously been supplied, as opposed to the 2007 survey which was circulated to all UK Trusts/Divisions.

The aims of this survey were:

- To identify if further progress with the use of intraoperative cell salvage (ICS) has been made.
- To identify what challenges still remain to the implementation and provision of an ICS service
- To identify the success of the Toolkit supplied by the UK CSAG.
- To gain an overview of how training for ICS is being delivered and by whom.
- To compare the specialties where ICS is being in 2010 compared to in 2007.
- To help focus the future work priorities of the UK Cell Salvage Action Group.
**Participation**

Questionnaires were sent to named cell salvage contacts within the UK. These were identified from the UK CSAG contact database (which is managed by the NHS Blood and Transplant Better Blood Transfusion Team).

Table 1: Participation rates by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of NHS organisations invited to participate</th>
<th>Number and percentage response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>83</td>
<td>31</td>
</tr>
<tr>
<td>Wales</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Scotland</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>N Ireland</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

The total number of returns is lower in the current survey than those returned in 2007. However, this is due to the fact that in 2010 the questionnaire was targeted to organisations known to provide an intraoperative cell salvage service.
Key Findings

For ease of interpretation, results from the survey are predominantly resented as graphs and tables. Where applicable the data is sub-divided into information relating to the four UK countries.

Section 1. Usage figures and equipment

Question: What is the total number of consumables used annually?

Graph 1: ICS consumables used in the UK
Question: What equipment was used and how many machines are available?

Graph 2: ICS devices used across the UK

![Bar chart showing types of Cell Saver equipment used across the UK.](image)

<table>
<thead>
<tr>
<th>Types of Machine</th>
<th>N Ireland</th>
<th>Scotland</th>
<th>Wales</th>
<th>England</th>
<th>Sorin Electas</th>
<th>Haemonetics (CS5s)</th>
<th>Fresenius (CATS)</th>
<th>Haemonetics (OrthoPat)</th>
<th>Cobe Brats</th>
<th>Haemonetics (CardioPats)</th>
<th>Medtronic (AutoLog)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of Machine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>62</td>
<td>18</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Sorin Electas</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemonetics (CS5s)</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresenius (CATS)</td>
<td></td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemonetics (OrthoPat)</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobe Brats</td>
<td>11</td>
<td>8</td>
<td></td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemonetics (CardioPats)</td>
<td>19</td>
<td>8</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medtronic (AutoLog)</td>
<td>18</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This graph and table is for information only as comparisons between this survey and the one conducted in 2007 cannot be made.
**Question:** Which anticoagulant do you use?

**Graph 3:** Type of anticoagulant used

![Anticoagulant Used](image)

<table>
<thead>
<tr>
<th>Anticoagulant Used</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heparinised saline/ACD</td>
<td>9%</td>
</tr>
<tr>
<td>ACD</td>
<td>43%</td>
</tr>
<tr>
<td>Heparinised saline</td>
<td>46%</td>
</tr>
<tr>
<td>Not stated</td>
<td>2%</td>
</tr>
</tbody>
</table>

It is worth noting that in this survey some organisations indicated that they use both ACD and heparinised saline whilst previously those who responded used either/or.

**Question:** Which specialities use ICS in your organisation?

**Graph 4:** Use of ICS by specialty within Trust/Division

![Specialities utilise ICS by Trust/Division](image)

<table>
<thead>
<tr>
<th>Speciality</th>
<th>No of Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthopaedics</td>
<td>42</td>
</tr>
<tr>
<td>Vascular</td>
<td>41</td>
</tr>
<tr>
<td>General Surgery</td>
<td>27</td>
</tr>
<tr>
<td>Obs &amp; Gynae</td>
<td>38</td>
</tr>
<tr>
<td>Trauma</td>
<td>31</td>
</tr>
<tr>
<td>Urology</td>
<td>22</td>
</tr>
<tr>
<td>Cardiac</td>
<td>15</td>
</tr>
<tr>
<td>Liver</td>
<td>6</td>
</tr>
<tr>
<td>Children’s surgery</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>

This is not a direct comparison but is interesting to note the differences in 2007 as identified in the Table 3.
Table 3: Comparison of replies 2007 v 2010 in use by clinical specialty

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>2007</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstetrics/Gynaecology</td>
<td>13%</td>
<td>16%</td>
</tr>
<tr>
<td>Orthopaedic</td>
<td>23%</td>
<td>18%</td>
</tr>
<tr>
<td>Vascular</td>
<td>17%</td>
<td>18%</td>
</tr>
<tr>
<td>Urology</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Trauma</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>General Surgery</td>
<td>17%</td>
<td>12%</td>
</tr>
<tr>
<td>Cardiac</td>
<td>7%</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Question: Is ICS used outside of “core” hours?**

**Graph 5: Trust/Division using ICS out of “core” hours**

Use of ICS out of routine hours

- **No** 23%
- **Yes** 77%

Figures in 2007 indicated 23% did not use ICS outside of routine hours.
Section 2. Staffing of ICS service

Question: How is the provision of the out of hours service provided?

Graph 6: Provision of “out of hours” service

In 2007 the figures were as follows:
- On Call staff 35%
- Dedicated operators 14%
- Varied 51%

23% of organisations stated they did not use ICS outside of routine hours.

Table 4 below indicates the reasons given where an “out of hours” service is not currently available.

Table 4: Reasons why ICS is not available outside of routine hours

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number of organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of need</td>
<td>1</td>
</tr>
<tr>
<td>Lack of trained operators</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>Not stated</td>
<td>41</td>
</tr>
</tbody>
</table>

Provision of an out of hours service is still not available in all organisations.
Question: Which staff groups operate ICS equipment in your hospital?

Graph 7: Personnel operating the ICS equipment

Table 5: Staff groups operating ICS equipment by country

<table>
<thead>
<tr>
<th></th>
<th>ODP’s</th>
<th>Perfusionist</th>
<th>Other</th>
<th>Varied</th>
<th>Not Stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>6</td>
<td>2</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wales</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Scotland</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>N Ireland</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 3. Training and assessment

Question: Do you provide “in house” training for cell salvage operators?

Graph 8: In house training for cell salvage machine operators

It is of concern that 6% responded that there was no “in house” training for operators.

Question: Who delivers cell salvage equipment training within your hospital?

Graph 9: Provision of ICS training in organisations

It is noted that in 2007 the response to Manufacturer training was 31% and collaboration of hospital staff and the Manufacturer was recorded as 18%.
Question: Do you use the UK Cell Salvage Action Group Education Workbook?

Graph 10: Use of UK Cell Salvage Action Group Education Workbook

Table 6: Reasons why educational workbook not in use

<table>
<thead>
<tr>
<th>Reasons not using UK Cell Salvage Action Group Education Workbook (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust workbook used</td>
<td>8</td>
</tr>
<tr>
<td>Manufacturer's Workbook used</td>
<td>21</td>
</tr>
<tr>
<td>Not aware of Education Workbook</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>

It was disappointing to report that 13% of responders stated they were not aware of the Education Workbook. This is an area the action group must take into account to ensure further promotion of the workbook is undertaken.
Graph 11: Anaesthetic trainees receiving theory or practical training

The training for Anaesthetic trainees may be something that could be considered by other organisations.

Question: Is the training competency assessed?

Graph 12: % of organisations who undertake competency assessments

It is encouraging to note that in this survey 73% responded they undertook competency assessments compared to only 46% in 2007. However it is worrying that competency assessment is not undertaken by 23% of respondents. The cell salvage machine is a medical device and it is expected that all operators should be competent to use such equipment.
**Question:** Are you using the UK Cell Salvage Action Group Competence Assessment Workbook?

**Graph 13: Use of competency assessment workbook**

![Pie chart showing the use of competency assessment workbook]

- Yes: 37%
- No: 38%
- Not stated: 25%

The UK CSAG is currently revising the competency assessment workbook, in line with the recently published National Occupational Standards (NOS) and it is intended the new version should be more user friendly.

**Graph 14: Reasons for not using the UK CSAG competency assessment Workbook**

![Pie chart showing the reasons for not using the workbook]

- Trust/Hospital own assessment tool: 45%
- Manufacturers assessment tool: 30%
- Not aware: 5%
- Mix: 20%

The UK CSAG are concerned that the manufacturers assessment tool is used by 30% of respondents as there is no guarantee this meets the NOS which are available.
Section 4. Governance

Graph 15: % of organisations who have a policy for contra-indications of ICS

Again encouraging to note 79% of organisation have policy/guidelines for indications and contra-indications as compared to 58% in 2007, but still 17% of organizations who use ICS responded they do not have these in place.

Graph 16: Challenges for implementing ICS within your Organisation
Question. How is Cell salvage funded within your organisation?

Graph 17: Funding within your Trust/Division

![Pie chart showing funding sources](chart.png)

- Theatre: 47%
- Blood transfusion: 9%
- Individual clinical specialty: 9%
- Central budget: 2%
- Don't know: 8%
- Other: 21%
- Not stated: 4%
Graph 18: Trust/Divisions where quality control measures are in place for ICS

In 2010 43% responders have QC measures in place compared to 25% in 2007.

Table 7: Quality Control

<table>
<thead>
<tr>
<th>Quality Control</th>
<th>Machines (%)</th>
<th>Individual operators (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>No</td>
<td>58</td>
<td>68</td>
</tr>
<tr>
<td>Not stated</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

The UK CSAG are aware that QC is a challenge for many hospitals and are in the process of undertaking a pilot scheme and it is hoped that a standardised process for QC can be developed.
SHOT invited participation for ICS adverse events to the scheme in 2008 following a successful pilot of the reporting of adverse events the previous year. Where other had been stated, in one case the event had occurred prior to the SHOT collecting data. In the other this was due to ongoing issues between the organisation and the manufacturer.
Conclusions

The response to the 2007 questionnaire provided the UK Cell Salvage Action Group with baseline information on the use of ICS in the UK and helped to inform the ongoing work plan for the group. A specific outcome from the survey identified the need for an educational workbook which when produced was made available in a hardcopy format to all hospitals in the UK. A range of additional educational materials and policy templates were also produced as a result of feedback and made available to download from the Department of Health Better Blood Transfusion Toolkit www.transfusionguidelines.org.uk

The usage figures and equipment used provide no surprises in the current 2010 survey. Obstetrics, which is a growing speciality where ICS is used, has increased from 13% to 16%; use in trauma has also increased.

In 2007 only 47% of responders stated they used competency assessments as a means of documenting that staff are trained and competent. It is encouraging to report that in the 2010 73% responded they undertook competency assessments. The competency assessment framework for cell salvage operators (developed in 2006) is currently being updated in line with the revised National Occupational Standards and it is important that Organisations and manufacturers continue to promote its use.

The development of a generic ICS policy by the Action Group is likely to have supported organisations who did not previously have a written policy/protocol in place. In this survey 79% of organisations indicated they had a policy for indications and contraindications as opposed to 58% in 2007.

Quality Control (QC) remains an issue for many hospitals with 58% of respondents reporting they do not currently QC machines and 68% do not currently QC the operators of ICS. A pilot is currently in progress, organised by the group, to allow recommendations to be developed. It is hoped to have these available in the next 6 months.

Findings from the 2010 survey have highlighted an ongoing role for the UK Cell Salvage Action Group in promoting the use of cell salvage as an alternative to allogeneic blood in the UK. There is more work to be done to promote the outputs from the group. There is a need to collect and benchmark activity data on the use of ICS in the UK. The Action Group intends to support a pilot of a centralised database for collection of this data as part of its 2011/12 work plan.

The questionnaire survey will be repeated in 2013.
References

UK Survey Report, November 2007, UK Intraoperative Cell Salvage Action Group

http://www.shotuk.org/home/


Acknowledgments

The group would like to acknowledge the support of John Grant Casey, National Comparative Audit Manager, NHS Blood and Transplant Better Blood Transfusion Team for his support in producing this survey as an online tool. The group are very grateful for the support given by Wafa El Hack, Welsh Blood Service Better Blood Transfusion Team in analysing the results and supporting the production of this report.
<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine Howell</td>
<td>Chief Nurse Patient Services</td>
<td>NHS Blood and Transplant</td>
</tr>
<tr>
<td>(Joint Chair)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joan Jones</td>
<td>Head of Quality &amp; Regulatory Compliance</td>
<td>Welsh Blood Service</td>
</tr>
<tr>
<td>(Joint Chair)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Buffin</td>
<td>Chief Perfusionist</td>
<td>Northern General Hospital</td>
</tr>
<tr>
<td>Sue Catling</td>
<td>Consultant Anaesthetist</td>
<td>Abertawe BroMorganwg University NHS Trust</td>
</tr>
<tr>
<td>Catriona Connolly</td>
<td>Consultant Anaesthetist</td>
<td>Ninewells Hospital, Dundee</td>
</tr>
<tr>
<td>Vicki Clark</td>
<td>Consultant Anaesthetist</td>
<td>Royal Infirmary, Edinburgh</td>
</tr>
<tr>
<td>John Faulds</td>
<td>Blood Conservation Coordinator</td>
<td>Royal Cornwall Hospitals NHS Trust</td>
</tr>
<tr>
<td>Hannah Grainger</td>
<td>Cell Salvage Co-ordinator</td>
<td>Welsh Blood Service</td>
</tr>
<tr>
<td>Sarah Haynes</td>
<td>Autologous Transfusion Co-ordinator</td>
<td>Wythenshawe Hospital, Manchester</td>
</tr>
<tr>
<td>Kath Hearnshaw</td>
<td>Transfusion Liaison Nurse</td>
<td>NHS Blood and Transplant</td>
</tr>
<tr>
<td>Danny McGee</td>
<td>Specialist Practitioner in Operating Theatre Blood Conservation</td>
<td>Scottish National Blood Service</td>
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<tr>
<td>Alastair Nimmo</td>
<td>Consultant Anaesthetist</td>
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<td>Sam Rawlinson</td>
<td>Consultant Haematologist</td>
<td>Scottish National Blood Service</td>
</tr>
<tr>
<td>Biddy Ridler</td>
<td>Blood Conservation Specialty Doctor</td>
<td>Royal Devon and Exeter NHS Foundation Trust</td>
</tr>
<tr>
<td>Dafydd Thomas</td>
<td>Consultant in Intensive Care and Anaesthesia</td>
<td>Abertawe BroMorganwg University NHS Trust</td>
</tr>
<tr>
<td>Francesco Torella</td>
<td>Consultant. Vascular Surgeon</td>
<td>University Hospital Aintree</td>
</tr>
<tr>
<td>Neville Marshall</td>
<td>Clinical Perfusion Scientist</td>
<td>Kings College Hospital</td>
</tr>
<tr>
<td>Rebecca Gerrard</td>
<td>Head of Better Blood Transfusion</td>
<td>NHS Blood and Transplant</td>
</tr>
<tr>
<td>Malcolm Chambers</td>
<td>Transfusion Practitioner / Clinical Educator</td>
<td>University Hospitals Leicester</td>
</tr>
</tbody>
</table>
ICS Online Survey

Section One - About you
1 - What is your name?

2 - What is your job title?

Section Two - About the machines you use
Please tell us about the intra-operative cell salvage machines used in your Hospital by indicating which machines are used, how many of those machines you have and approximately how many disposables are used annually per type of machine.

3. Do you use any of the following?
3a - Haemonetics Cell Saver 5 (CS5)
☐ Yes
☐ No

3b - If yes, how many CS5s do you have?

3c - What is the total number of consumables used annually for these machines?

3d - Haemonetics OrthoPat
☐ Yes
☐ No

3e - If yes, how many OrthoPats do you have?

3f - What is the total number of consumables used annually for these machines?

3g - Haemonetics CardioPat
☐ Yes
☐ No

3h - If yes, how many CardioPats do you have?
3i - What is the total number of consumables used annually for these machines?
-- Please select --
325 3

3j - Sorin Electa
☐ Yes
☐ No
326 1

3k - If yes, how many Electas do you have?
-- Please select --
327 1

3l - What is the total number of consumables used annually for these machines?
-- Please select --
328 3

3m - Cobe Brat
☐ Yes
☐ No
329 1

3n - If yes, how many Brats do you have?
-- Please select --
330 1

3o - What is the total number of consumables used annually for these machines?
-- Please select --
331 3

3p - Fresenius C.A.T.S.
☐ Yes
☐ No
332 1

3q - If yes, how many C.A.T.S. do you have?
-- Please select --
333 1

3r - What is the total number of consumables used annually for these machines?
-- Please select --
334 3

3s - Medtronic autoLog
☐ Yes
☐ No
335 1

3t - If yes, How many autoLogs do you have?
-- Please select --
336 1
3u - What is the total number of consumables used annually for these machines?

--- Please select ---

337 5

3v - Other (Please state name, number of machines and amount of consumables used)

Section Three - About using your intra-operative cell salvage machines

4 - Which anticoagulant do you use? (Tick as many as apply)

☐ Heparinised saline
☐ ACD
☐ Other (please state)

338 2

4a - Other (Please specify)

372 3

5 - Do you use leucodepletion filters when reinfusing:

5a - Blood salvaged from cancer surgery

☐ Always
☐ Sometimes
☐ Never

373 3

5b - Blood salvaged at Caesarean section

☐ Always
☐ Sometimes
☐ Never

340 2
6 - Which specialities in your hospital use Intra-Operative Cell Salvage? (Tick as many as apply)

☐ Cardiac
☐ Children's surgery
☐ General surgery
☐ Liver
☐ Obs & Gynae
☐ Orthopaedics
☐ Trauma
☐ Urology
☐ Vascular
☐ Other (please state)

6a - Other (please state)

7 - Is Intra-Operative Cell Salvage used both in and out of core (normal) working hours?

☐ Yes
☐ No

7a - If yes, how is the out of hours service provided? (Tick as many as apply)

☐ On duty theatre staff
☐ On call theatre staff
☐ On call dedicated Intra-Operative Cell Salvage operators
☐ Other (please state)

7b - Other (please state)

341 5
342 3
343 2
344 5
345 2
7c - If Intra-Operative Cell Salvage is not used both in and out of core (normal) working hours, why not? (Tick as many as apply)

☐ Lack of need
☐ Lack of trained operators
☐ Other (please state)

346 5

7d - Other (please state)

8 - Which staff groups operate the intra-operative cell salvage equipment in your hospital? (Tick as many as apply)

☐ Anaesthetist
☐ Anaesthetic nurse
☐ Health Care Support Worker
☐ Midwife
☐ ODP
☐ Perfusionist
☐ Recovery nurse
☐ Scrub nurse
☐ Other (please specify)

348 5

8a - Other (please state)

Section Four - About training

9 - Do you provide "in house" training for cell salvage machine operators?

☐ Yes
☐ No

350 2
10 - Who delivers cell salvage machine training within your hospital? (Tick as many as apply)

☐ Cell Salvage Co-ordinator
☐ ODP
☐ Perfusionist
☐ Transfusion Practitioner
☐ Machine manufacturer
☐ Other (please state)

351 5

10a - Other (please state)

11 - Do your anaesthetic trainees receive any theory or practical training in cell salvage as part of their training? (e.g. during the vascular block)

☐ Yes
☐ No

353 3

12 - Do you use the UK Cell Salvage Action Group Education Workbook?

☐ Yes
☐ No

354 2

12a - If no, why not? (Tick as many as apply)

☐ Trust workbook used
☐ Manufacturer's workbook used
☐ Not aware of Education Workbook
☐ Other (please state)

355 5

12b - Other (please state)
12c - Is the training competency assessed?

☐ Yes
☐ No

357 3

12d - If yes, are you using the UK Cell Salvage Action Group Competence Assessment Workbook?

☐ Yes
☐ No

358 2

12e - If no, why not? (Tick as many as apply)

☐ Trust/Hospital own assessment tool used
☐ Manufacturer's assessment tool used
☐ Not aware of UK Competence Assessment Workbook
☐ Other (please state)

359 5

12f - Other (please state)

Section Five - About implementation

13 - Is there a policy / guidelines in your hospital for indications and contra-indications for the use of Intra-Operative Cell Salvage?

☐ Yes
☐ No

361 2

14 - What challenges have you encountered in your hospital when implementing Intra-Operative Cell Salvage? (Tick as many as apply)

☐ Training requirements / Resources
☐ Lack of clinician interest
☐ Lack of clinician support
☐ Lack of machines
☐ Lack of funding
☐ Other (please state)

362 5
14a - Other (please state)

15 - Who in your hospital funds the cost of the Intra-Operative Cell Salvage programme (consumables, etc)?

- Theatre
- Blood transfusion
- Individual clinical speciality
- Central budget
- Don't know
- Other (please state)

15a - Other (please state)

Section Six - About Quality Control
16 - Do you have quality control measures for Intra-Operative Cell Salvage in place in your hospital?

- Yes
- No

17 - Do you regularly quality control your machines?

- Yes
- No

17a - Do you regularly quality control your individual operators?

- Yes
- No
18 - Have you reported any adverse events to the Serious Hazards of Transfusion Scheme (SHOT)?

☐ Yes
☐ No

18a - If no, why not?

☐ None has occurred
☐ Unaware of SHOT reporting
☐ Other (please state)

18b - Other (please state)

19 - Please use this box to give us any additional information you would like to provide