

UK Intraoperative Cell Salvage Action Group

UK Survey Report

Intra-Operative Cell Salvage Survey

UK Report

November 2007

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Background

The drive for the use of Intraoperative Cell Salvage (ICS) has come from several sources including, "Health Service Circular 2002/009 'Better Blood Transfusion - *Appropriate Use Of Blood*'¹ and the "National Strategy on Blood conservation"² produced by the working party for autologous blood use. The use of ICS helps minimise patient exposure to donor blood thus minimising the risks related to transfusion. It also helps to ensure that sufficient blood is available for patients where the use of alternatives is not indicated.

Cell salvage is an area in which considerable investment has been undertaken in certain Trusts, but practice varies from region to region and between hospitals within the same region. Practice also varies between hospitals within the same Trust, but in the absence of a central cell salvage database, it is difficult to accurately gauge the actual levels of activity.

In hospitals where cell salvage is well established, an identified 'champion' usually leads it. This is often an anaesthetist, surgeon or a member of theatre staff. The more influence this 'champion' has on hospital policy and theatre practice, it appears that it is more likely that there will be development of a effective service.

A UK Cell Salvage Action Group has been established to help support the wider implementation of intra-operative cell salvage as an alternative to donor blood, and to facilitate a UK approach its use. The Action Group reports to the Appropriate Use of Blood Group in England and the equivalent groups in the devolved countries. (see Appendix 1 for group members).

As part of the action groups workplan the need to conduct a baseline survey of activity was identified. This report summarises the findings of the survey conducted in April 2007.

This report is written by Catherine Howell and Joan Jones (joint Chairs of the UK Intraoperative Cell Salvage Action Group) on behalf of the group.

Methodology

A questionnaire survey was developed by members of the UK Cell Salvage Action Group (Appendix 2). The questionnaire was peer reviewed and based on a previous survey undertaken by the Yorkshire Regional Transfusion Committee.

The aims of this survey were:

- To obtain a baseline overview of the current status of intra-operative cell salvage (ICS) within the UK
- To identify the challenges experienced by the UK's hospitals related to the implementation and provision of an ICS service
- To identify the successes within the UK related to the implementation and provision of ICS services
- To identify who operates cell salvage devices
- To identify how training is delivered and if operators undertake competency assessments
- How ICS is used within different clinical specialties
- Identify if ICS is used within paediatric surgery

Participation

Questionnaires were sent to all Trusts in England, Northern Ireland and Wales and all Divisions in Scotland. To ensure consistency of data and ease of interpretation, a collated response from each Trust/Division was requested.

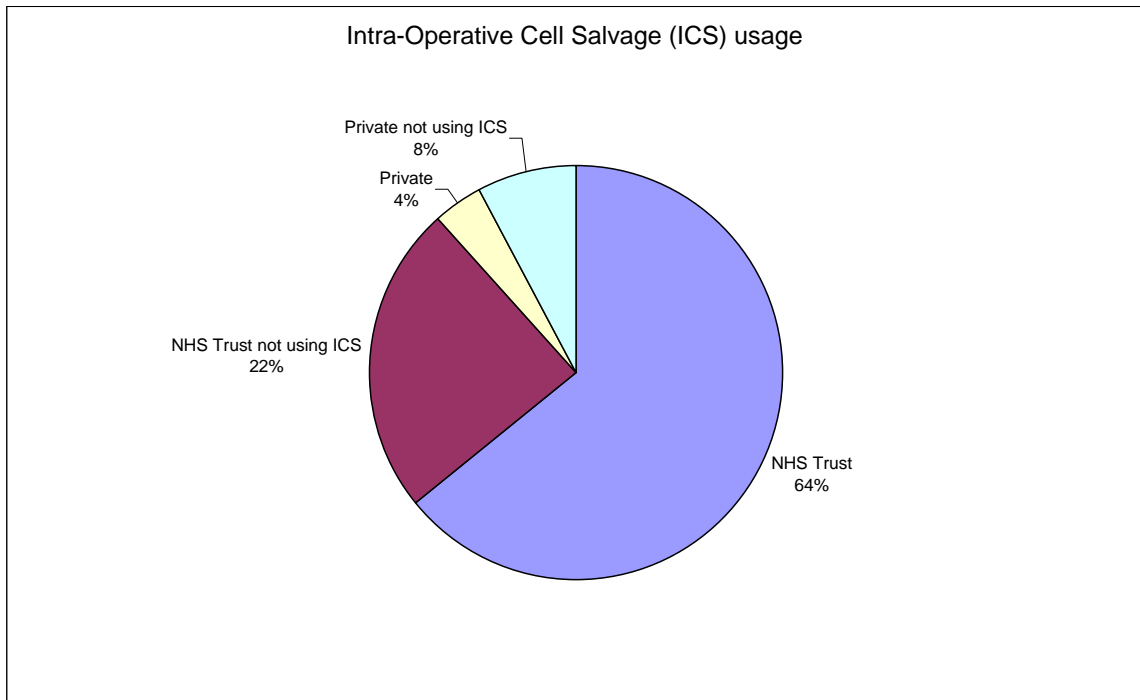
Table1: Participation rates by Country

| Country | NHS Organisation | Questionnaires Returned (%) | Private Hospitals | Questionnaires Returned (%) |
|------------------|------------------|-----------------------------|-------------------|-----------------------------|
| England | 179 | 126 (70%) | 88 | 21 (24%) |
| Northern Ireland | 5 | 2 (40 %) | 0 | N/A |
| Scotland | 16 | 16 (100%) | 0 | N/A |
| Wales | 12 | 12 (100%) | 0 | N/A |

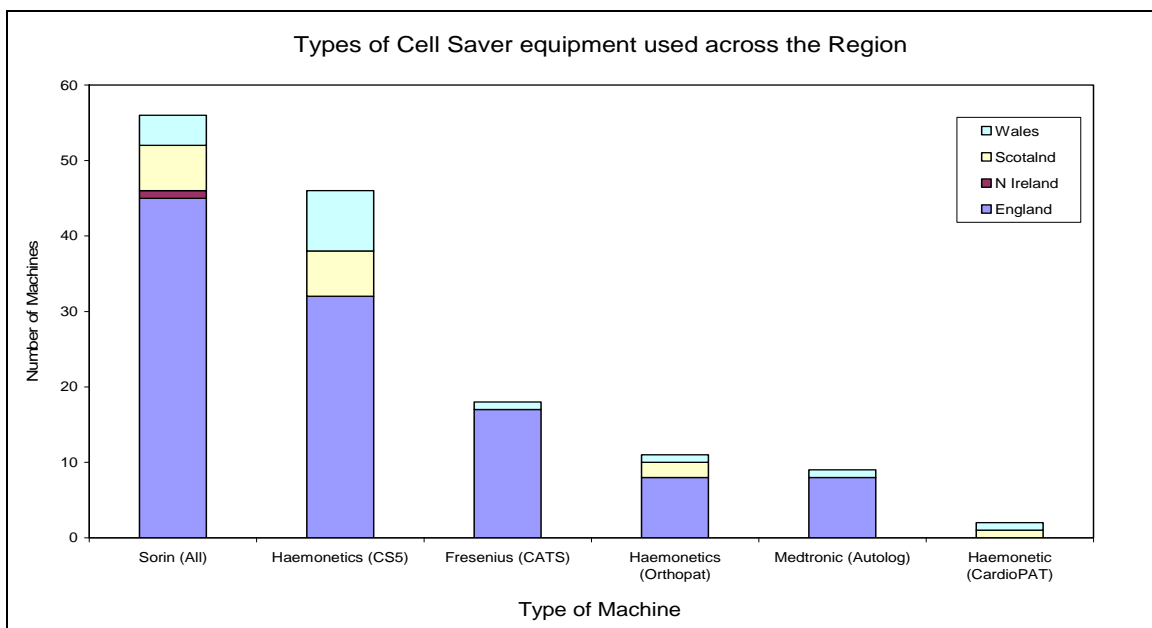
Key Findings

Results from the UK data are predominantly presented as graphs. Where applicable the data is sub-divided into information relating to the four UK countries.

Graph 1: Use of ICS across NHS and Independent Organisations in the UK



Graph 2: Cell Salvage devices used across the UK



Graph 3: ICS consumables used in the UK

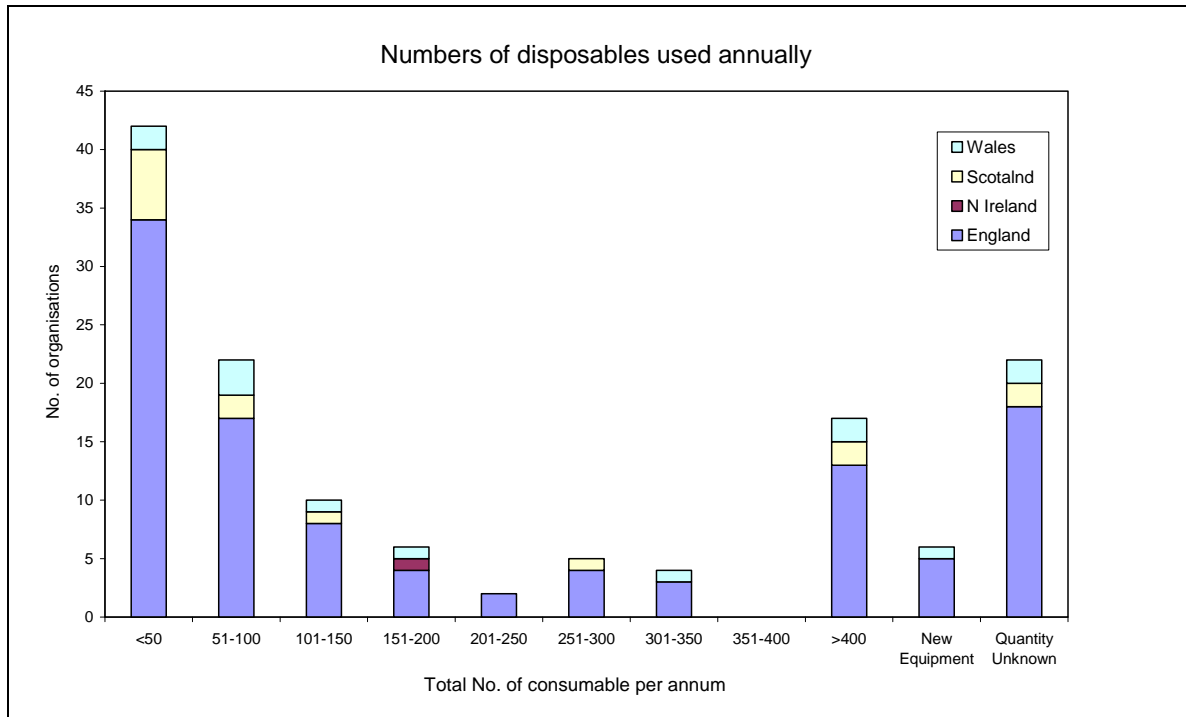
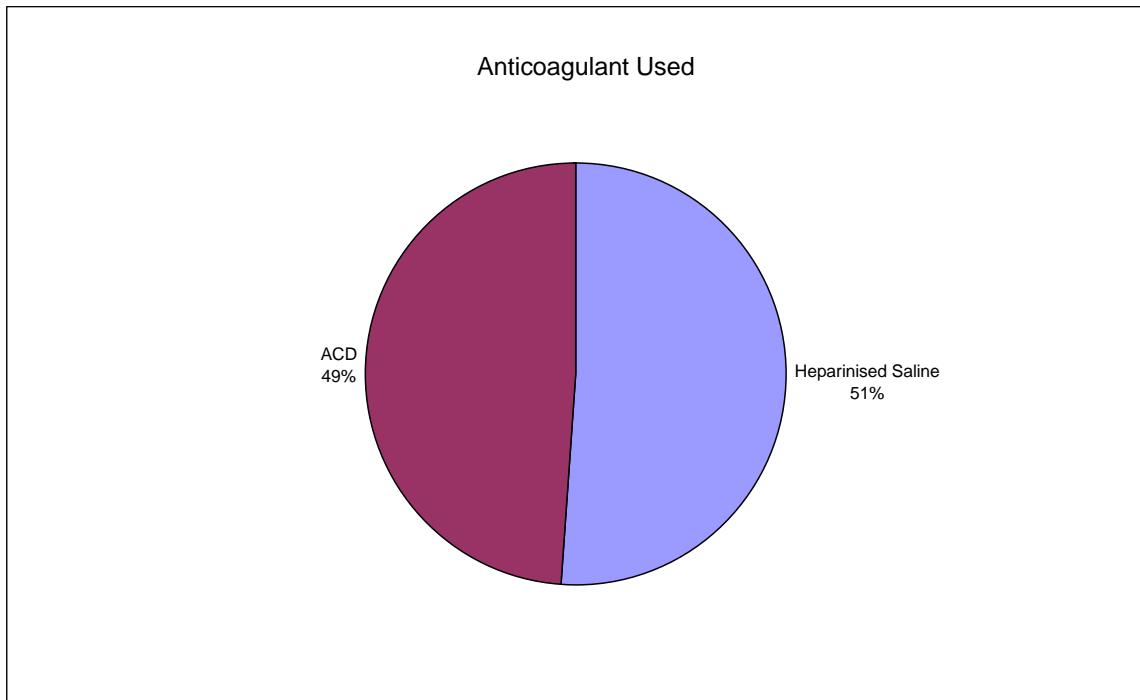


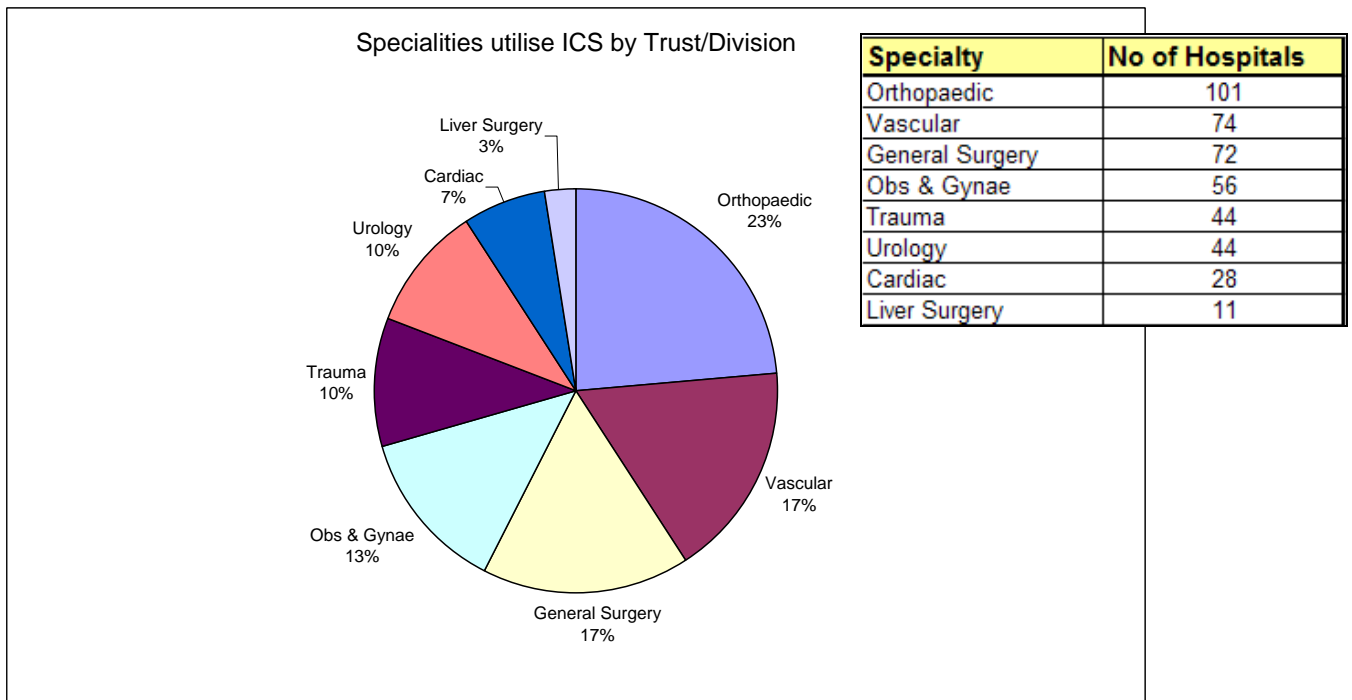
Table 2: Funding of ICS consumables

| Funding within your Trust/Division | |
|------------------------------------|----|
| Anaesthetic Department/Theatre | 49 |
| Transfusion/Pathology | 15 |
| Central Funding | 10 |
| Clinical Specialty | 31 |
| Insurance/Patient | 10 |
| Don't know | 7 |
| Blood Services | 4 |

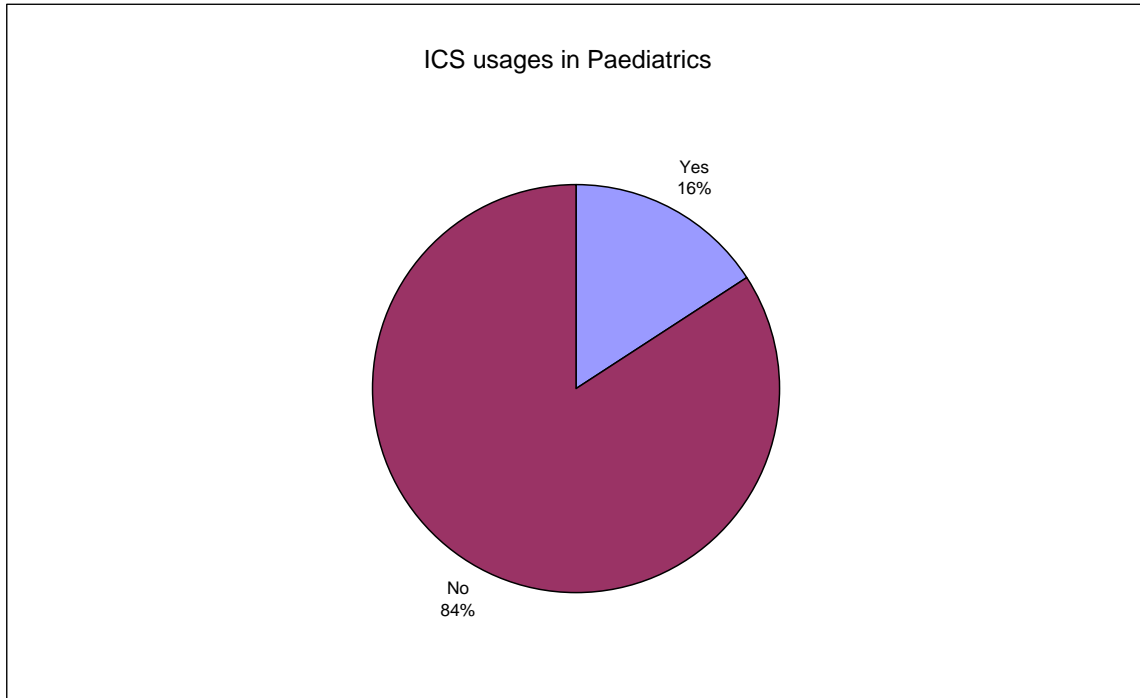
Graph 4: Type of anticoagulant used



Graph 5: Use of ICS by specialty within Trusts/Divisions

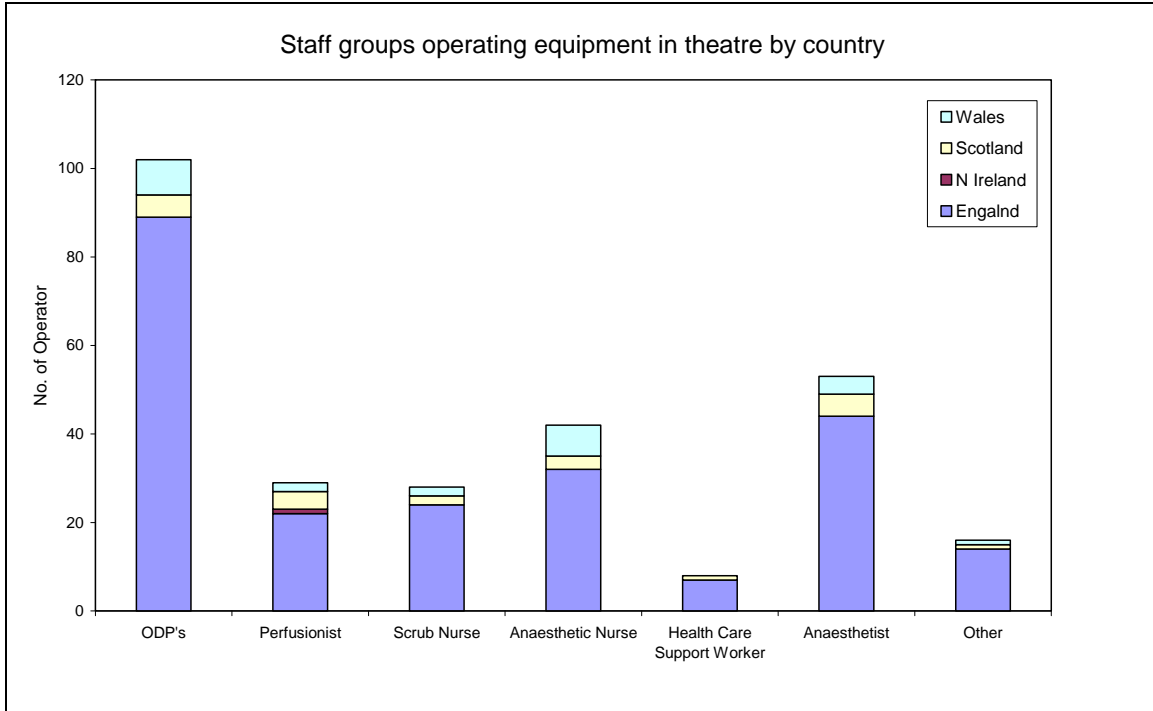


Graph 6: ICS use in Paediatrics



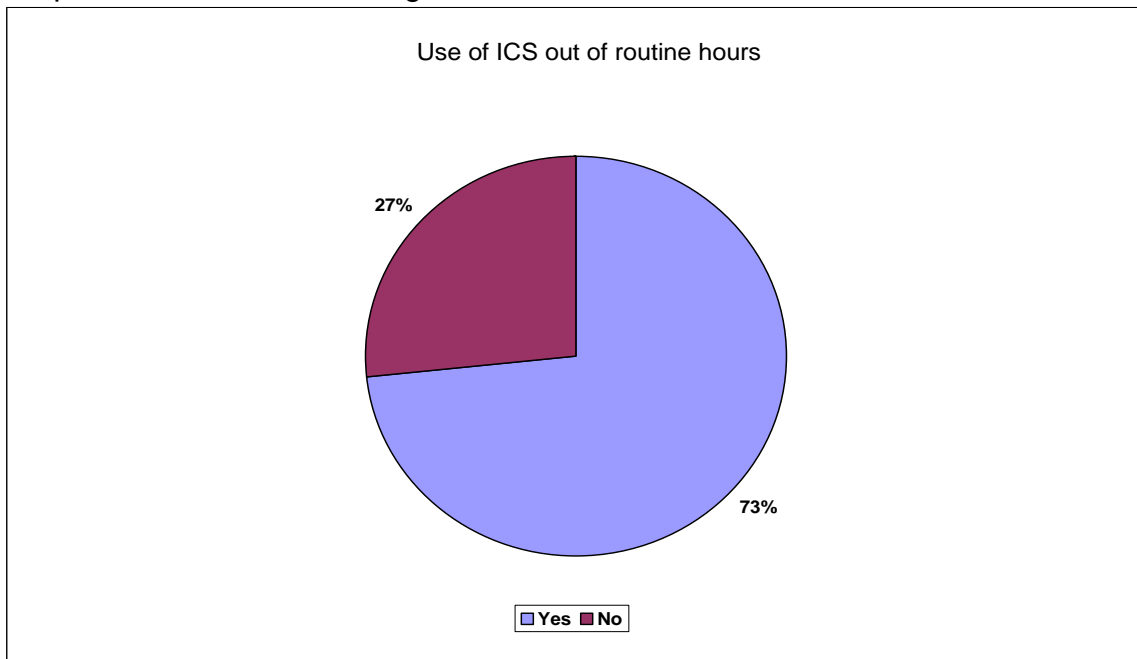
Of the hospitals that responded 84 number indicated they were performing surgery on paediatric patients. Of those 84 organisations only 16 indicated they were using ICS.

Graph 7: Personnel operating the ICS equipment

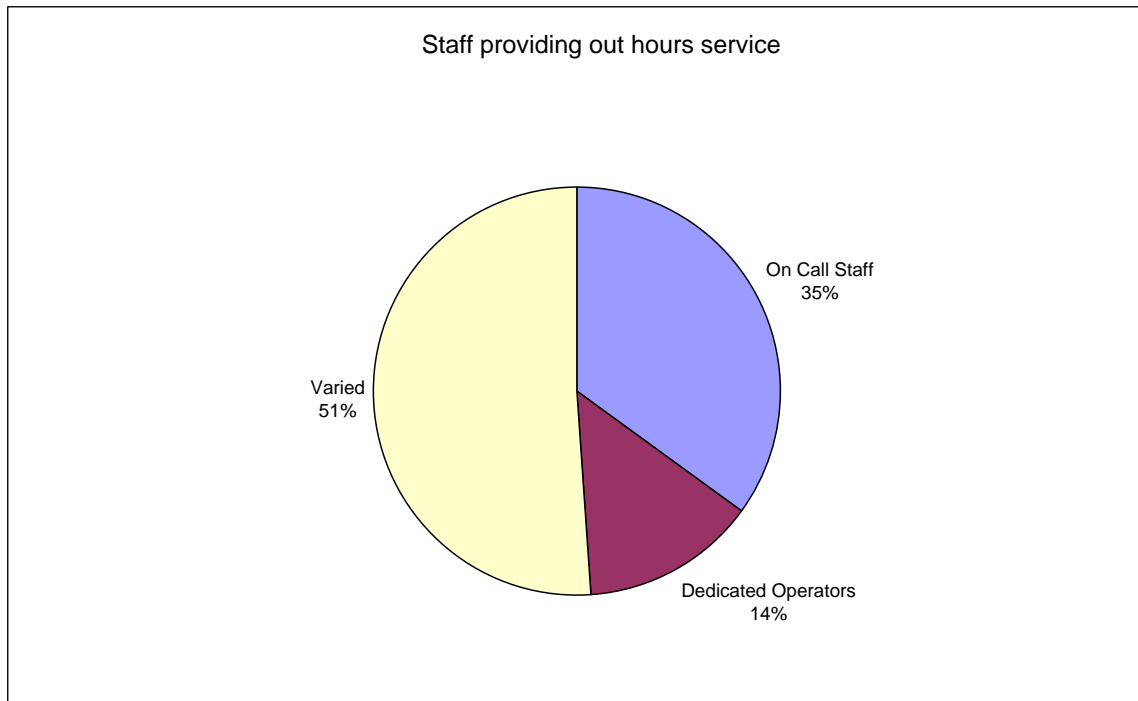


| | ODP's | Perfusionist | Scrub Nurse | Anaesthetic Nurse | Health Care Support Worker | Anaesthetist | Other |
|-----------|-------|--------------|-------------|-------------------|----------------------------|--------------|-------|
| Engalnd | 89 | 22 | 24 | 32 | 7 | 44 | 14 |
| N Ireland | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Scotland | 5 | 4 | 2 | 3 | 1 | 5 | 1 |
| Wales | 8 | 2 | 2 | 7 | 0 | 4 | 1 |

Graph 8: Trust/Division using ICS out of "core" hours



Graph 9: Provision of “out of hours” service

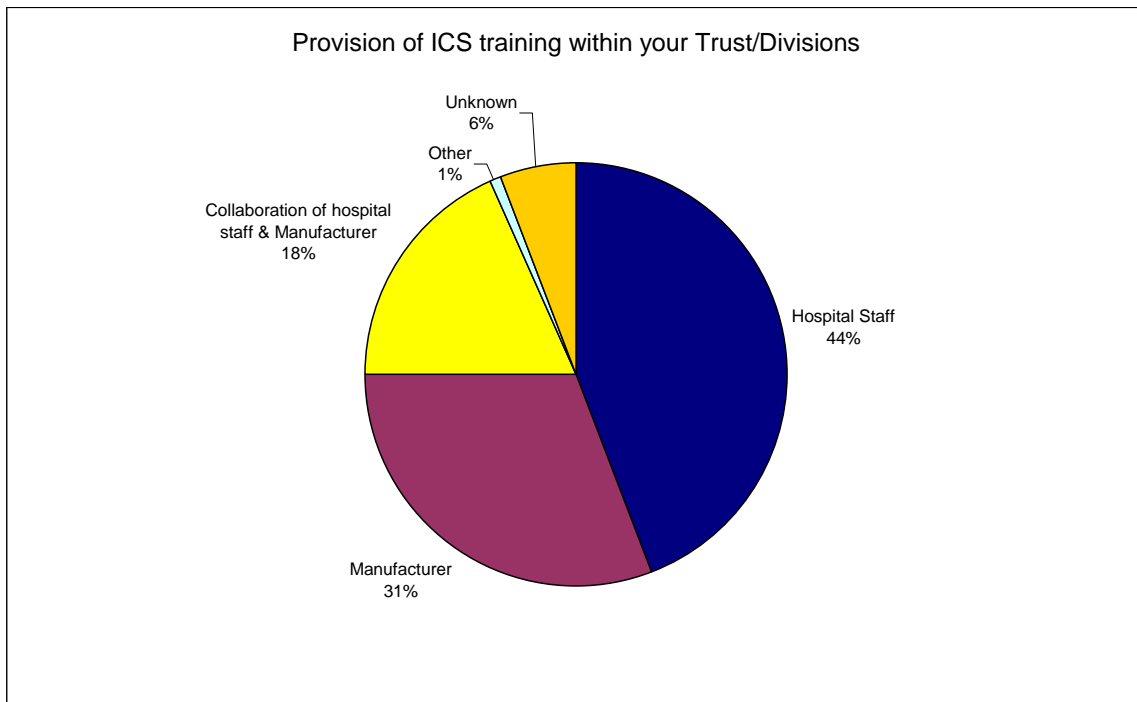


27% of organisations stated they did not use ICS outside of routine hours. Table 3 indicates the reasons given where an “out of hours” service is not currently available.

Table 3: Reasons why ICS is not available outside of routine hours

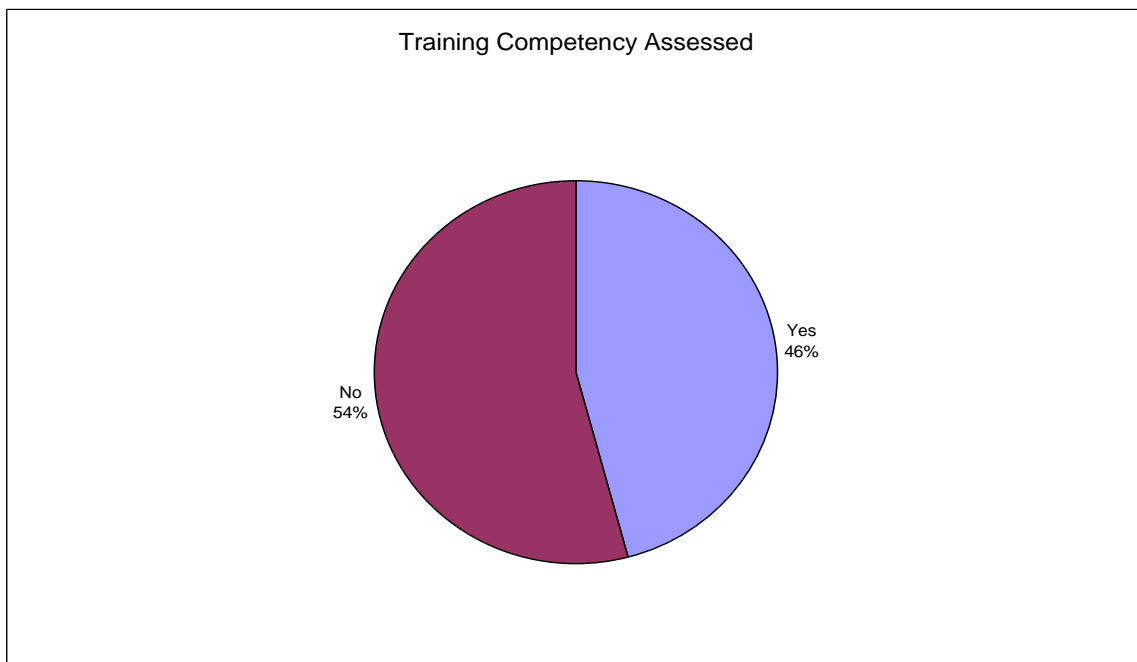
| Reason | No. of Organisations |
|---|----------------------|
| Lack of trained operators in theatre | 9 |
| Minimum staffing levels out of hours do not support ICS | 7 |
| Additional funding for an on call ICS rota is required | 2 |
| No requirement for out of hours as yet | 12 |
| Not stated | 63 |

Graph10: Provision of ICS training in organisations

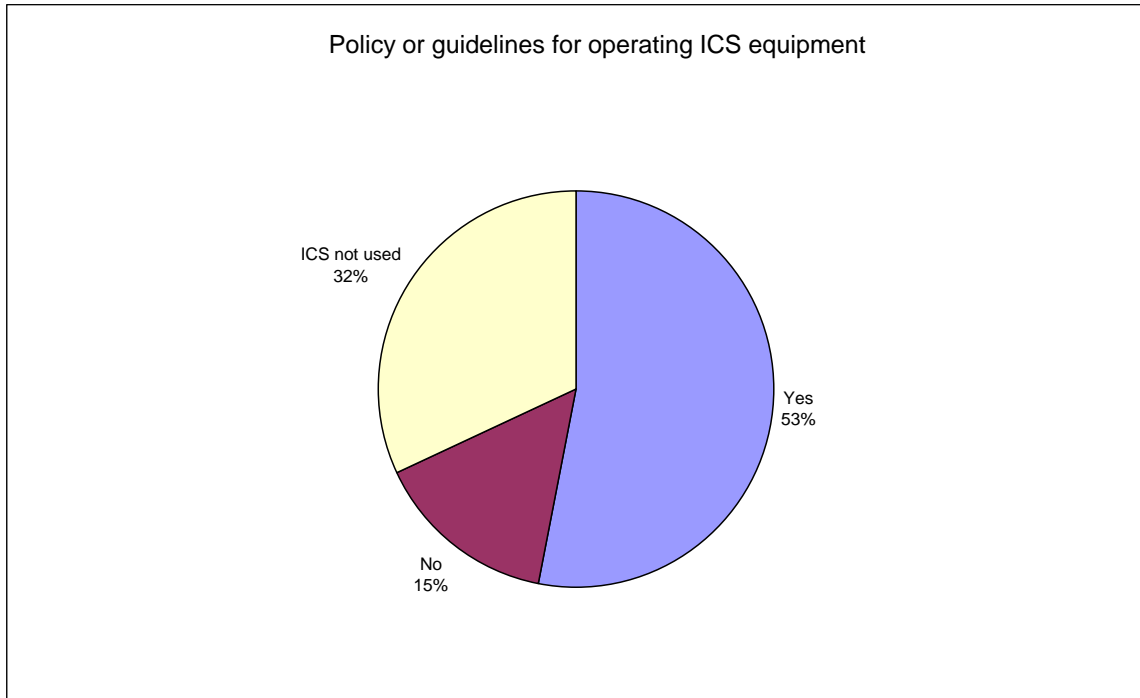


| Hospital Staff | Manufacturer | Hospital Staff & Manufacturer | Other | Unknown |
|----------------|--------------|-------------------------------|-------|---------|
| 53 | 37 | 22 | 1 | 7 |

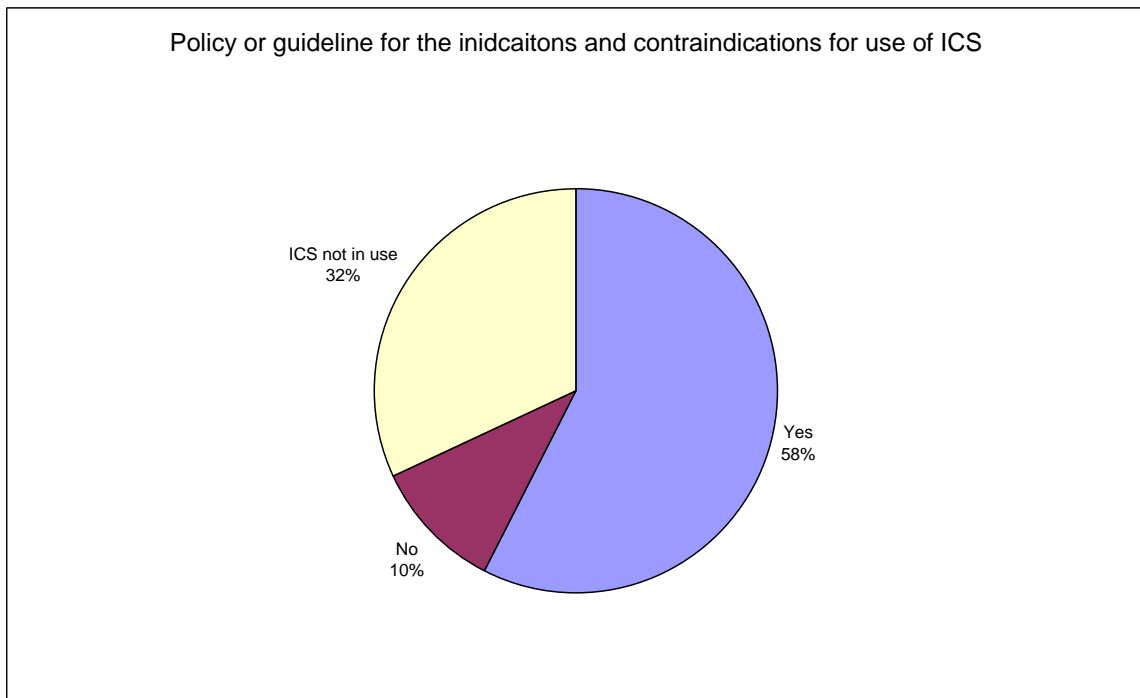
Graph 11: % of Organisations who undertake competency assessments



Graph 12: % of Organisations who have a policy for operating ICS



Graph 13: % of Organisations which have a policy for contraindications of ICS



Graph 14: Challenges for implementing ICS in Organisations

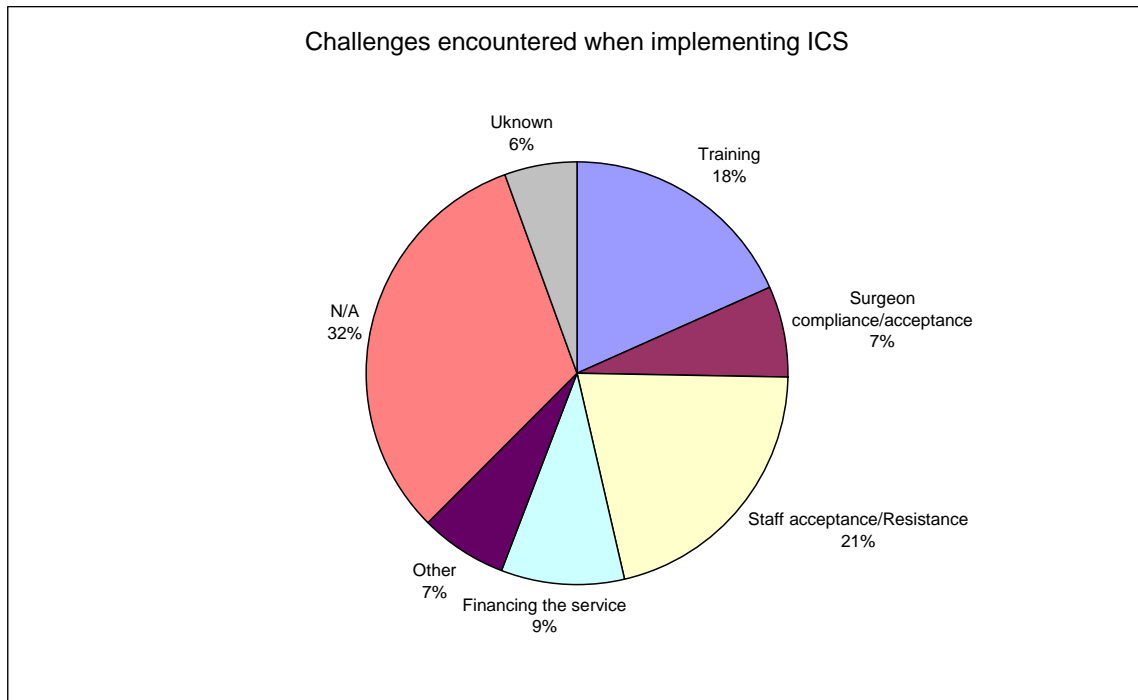
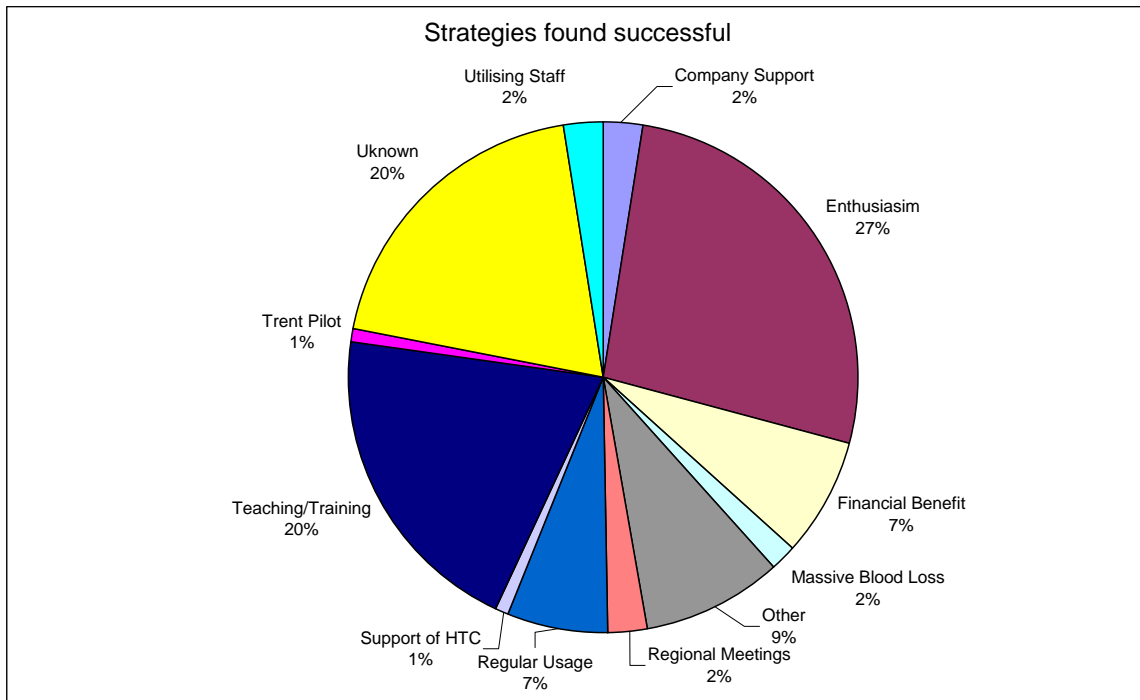


Table 4: Specific Challenges for implementing ICS

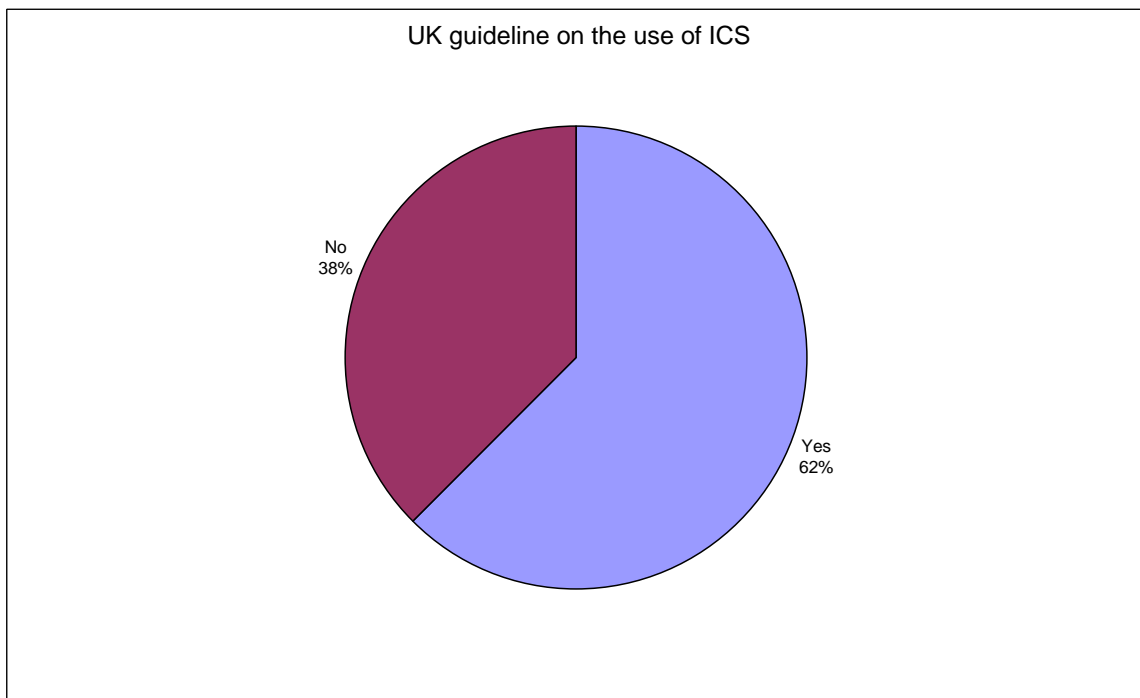
| Challenges | Specific Reasons |
|---------------------------------------|---|
| Training | <ul style="list-style-type: none"> • Availability of manufacturers to train • Insufficient staff trained |
| Surgeon & Staff Compliance/Acceptance | <ul style="list-style-type: none"> • Unwillingness of theatre staff to train for this new skill • Lack of clinicians support & interest • Delay with management at divisional level moving forward with service • Surgeons reluctant to use it • Utilising the equipment across specialities |
| Cost | <ul style="list-style-type: none"> • Extra Staff • Training • Disposables |
| Other | <ul style="list-style-type: none"> • Lack of machines • Maintaining staff skill level • New Service • Getting machine to remote site for a particular speciality |

Graph 15: Successful strategies for implementing ICS

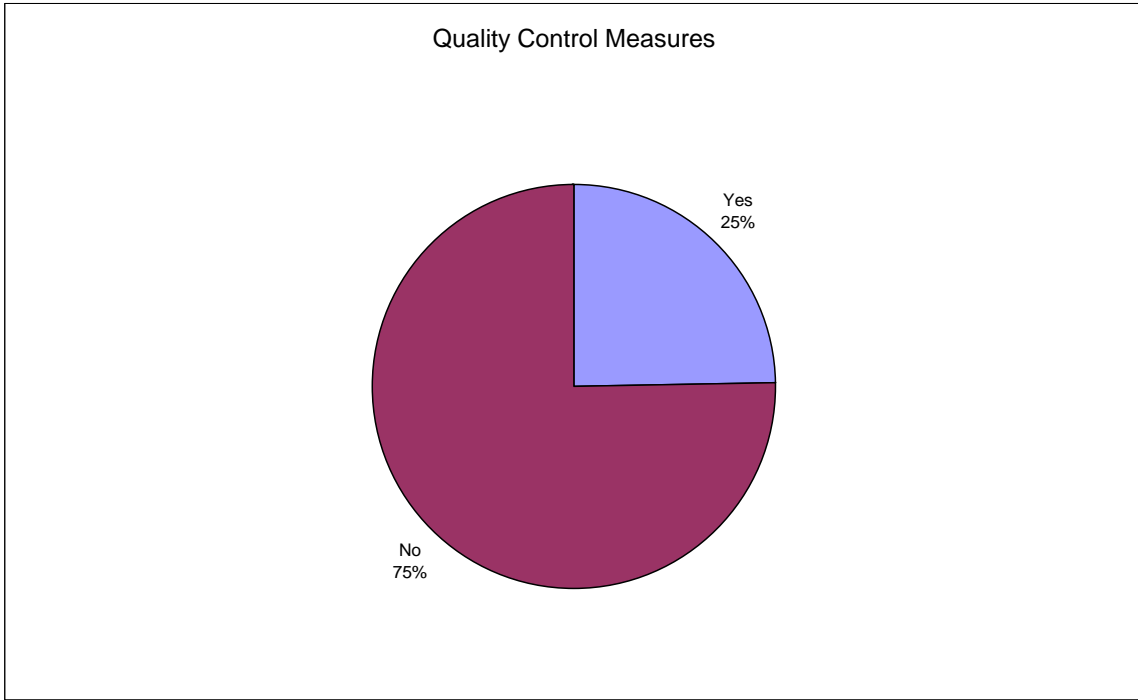


The most successful strategy for implementing ICS appeared to be enthusiasm (27%) & teaching/training (20%).

Graph 16: Responders who think a UK guideline on the use of ICS is required



Graph 18: Trust/Divisions where Quality Control measures are in place for ICS



Conclusion

The response to this questionnaire has provided the ICS Action Group with baseline information on the use of ICS in the UK. This information will help to inform the ongoing workplan for the group

The feedback validates the need for the provision of educational materials and a toolkit to support safe and appropriate ICS use.

Only 47% of responders use competency assessments as a means of documenting that staff are trained and competent. The competency assessment framework for cell salvage operators (developed in 2006) has recently been updated and it is important for Organisations and manufacturers to promote its use. The framework document is available at www.transfusionguidelines.org

The development of a generic ICS policy will support the 45% of organisations who do not currently have in place a written policy/protocol document. This policy should also support the development of specific written contraindications for use within their organisations.

Further information will be sought from the users of ICS in paediatric surgery to better inform the support required by these organisations.

References

1. Better Blood Transfusion: The Appropriate Use of Blood (2002) HSC 2002/009
2. James V (2004) A National Blood Conservation Strategy for the NBTC and NBS
http://www.dh.gov.uk/prod_consum_dh/idcplg?IdcService=GET_FILE&dID=26734&Rendition=Web

Acknowledgements

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| | |
|----------------------------------|-----------|
| Transfusion Liaison Nursing Team | England |
| Hannah Grainger | Wales |
| Danny McGee | Scotland |
| Kirsty Bonar | N Ireland |

The database was created using Microsoft Access and the returns were entered by Wafa ElHack, Information Analyst, Better Blood Transfusion Team, Welsh Blood Service

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|-----------------------------------|---|--|
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| Biddy Ridler | Clinical Blood Conservation Co- ordinator | Royal Devon and Exeter NHS Foundation Trust |
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| Dafydd Thomas | Consultant in Anaesthesia and Intensive Care | Swansea NHS Trust |
| Francesco Torella | Consultant Vascular Surgeon and Honorary Lecturer in Surgery | University Hospital Aintree |

| UK Intra-Operative Cell Salvage Survey | | | |
|--|--|---|-------------------------------------|
| <i>Name of Trust/Division:</i> | | | |
| <i>Completed by:</i> (Name and Position) | | Name..... Position | |
| <i>Does your Trust/Division use Intra-Operative Cell Salvage (ICS)?</i> | | Yes <input type="checkbox"/> No <input type="checkbox"/> If no, you do not need to complete the rest of the survey. Please do still return to the address detailed at the end of the survey | |
| Which equipment do you use? Please list the machine types used and the approximate numbers of disposables used annually for each machine type | | Type of Machine | Number of machines |
| | | | Quantity of consumables/ (per year) |
| Please indicate which anticoagulant you use | | Heparinised saline Yes <input type="checkbox"/> No <input type="checkbox"/> ACD Yes <input type="checkbox"/> No <input type="checkbox"/> Other (please specify) | |

Appendix 2

| | |
|---|---|
| <p>Which staff groups operate the equipment in theatre? (Please tick all that apply.)</p> | <p>ODP <input type="checkbox"/> Perfusionist <input type="checkbox"/> Scrub Nurse <input type="checkbox"/> Anaesthetic Nurse <input type="checkbox"/></p> <p>Health Care Support Worker <input type="checkbox"/> Anaesthetist <input type="checkbox"/></p> <p>Other (Please Specify) </p> |
| <p>Do you provide in house ICS training for cell salvage operators?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>Do your anaesthetic trainees receive any theory or practical training in cell salvage as any part of their training (e.g. during the vascular block)?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>Please state who delivers cell salvage training within your Trust/Division? (e.g. Company rep, Transfusion Practitioner, ODP, Anaesthetist etc.)</p> | <p>..... </p> |
| <p>Is the training competency assessed? If yes: Are you using the recently launched UK Competency Assessment Workbook?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |

Appendix 2

| | |
|--|--|
| <p>Do you have policy or Trust/Division guidelines for operating ICS equipment?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>Do you have guidelines for the indications and contra-indications for use of ICS?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>What challenges have you encountered when implementing ICS in your Trust/Division? (Please list)</p> | <p>1. 2. 3.</p> |
| <p>Please detail the strategies have you found successful in developing and maintaining your ICS service?</p> | <p>.....</p> |
| <p>How are new developments in cell salvage and ongoing issues and awareness of cell salvage communicated within your organisation?</p> | <p>.....</p> |

