

SPECIAL REPORT

Current status of JACIE accreditation in Europe: a special report from the Joint Accreditation Committee of the ISCT and the EBMT (JACIE)

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JACIE (Joint Accreditation Committee of the ISCT and the EBMT) launched its first official inspection programme in January 2004. Since then, 35 centres in Europe have been inspected. Almost all were found to be functioning at a high level of excellence, with the majority having only minor deficiencies in compliance with the standards. In one-third of centres there were more significant deficiencies. The most common deficiencies were in quality management, and a survey of the applicant centres confirmed this was the area where centres experienced most difficulty in preparation for accreditation. Following correction of deficiencies, 28 centres have at the time of writing achieved full accreditation. Implementation of JACIE required a significant investment of time and resources by applicant centres. The majority required at least 18 months to prepare for accreditation and 85% needed to employ a quality manager and/or data manager on an ongoing basis. However, all centres felt their programme had benefited from the implementation of JACIE. In addition to the inspection and accreditation of individual centres, JACIE maintains an educational programme including training courses for inspectors and for centre preparation. JACIE is also working closely with other international organisations working in cellular therapy to develop international standards for all aspects of stem cell transplant. The recent implementation of Directive 2004/23/EC has provided an impetus for the implementation of JACIE in EU member states and in particular the requirements for safety of imported tissues and cells have emphasised the need for global harmonisation.

Bone Marrow Transplantation (2007) 39, 133–141.
doi:10.1038/sj.bmt.1705564

Keywords: transplant; accreditation; standards; inspection; regulation

Introduction

JACIE is a nonprofit body established for the purposes of assessment and accreditation in the field of haematopoietic stem cell transplantation (HSCT). The committee was founded in 1998 by the European Group for Blood and Marrow Transplantation (EBMT) and the International Society for Cellular Therapy (ISCT), the two leading scientific organisations involved with HSCT in Europe. JACIE modelled itself on the US-based Foundation for the Accreditation of Cellular Therapy (FACT), established in 1996 by the ISCT and the American society for Blood and Marrow Transplantation (ASBMT). JACIE actively collaborates with FACT in establishing standards for the provision of quality medical and laboratory practice in HSCT. JACIE conducts inspections, accredits programmes and encourages health institutions and facilities performing HSCT to meet these standards voluntarily in order to demonstrate their high levels of quality of care. The current organisation of JACIE is shown in Figure 1. The structure ensures wide consultation, with 20 European countries now represented on the Board in addition to nursing, paediatrics and cord-blood representatives.

The primary aim of JACIE is to improve the quality of HSCT in Europe by providing a means whereby transplant centres, cell collection facilities and processing facilities can demonstrate high-quality practice. This is supported by coordinating training courses in quality management for applicant centres and courses for inspectors. An additional and wider aim is to ensure harmonisation between JACIE standards and other national/international standards, including the EU Tissues & Cells Directive (Directive 2004/23/EC)¹ and the related implementing Directives.^{2,3} The increasing use of unrelated donor cells for transplants highlights the need for further work in this area.

Accreditation of HSCT facilities is through online submission of documentation and an on-site visit by a team of trained inspectors. Centres may apply for accreditation as complete programmes comprising a clinical programme, a collection facility and a processing laboratory or, for example, as a single collection or processing facility serving a number of clinical programmes. JACIE accreditation is voluntary, but provides a means whereby transplant facilities can demonstrate that they are working within a quality system covering all aspects of the

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Received 8 November 2006; accepted 21 November 2006

transplantation process and thus show compliance with the requirements of insurance companies or national and/or international regulatory authorities.

Following a programme of four pilot inspections in Spain between 2001 and 2003, where FACT inspectors performed the first on-site visit, the JACIE programme was fully implemented in January 2004 with support from the European Union under the Public Health Programme (2003–2008). Between January 2004 and August 2006, 35 centres were inspected. These included two in Austria, two in Finland, six in France, one in Italy, five in The Netherlands (an additional Dutch centre was inspected in 2004 as part of national pilot project but this centre was not the subject of a formal accreditation review), 10 in Switzerland and nine in the UK. This experience has enabled JACIE to identify areas of common difficulty for applicant centres, to assess what assistance centres need in order to achieve accreditation, and has also raised some general issues relating to national and international regulation.

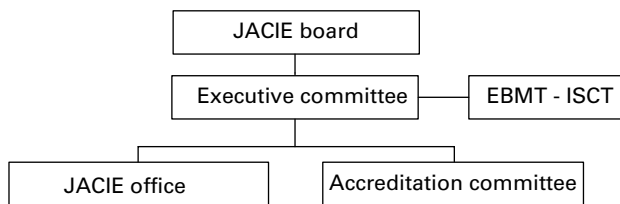


Figure 1 Structure of JACIE. *Officers (JACIE Executive Committee, from Oct 2006)*: President: Ineke Slaper-Cortenbach (ISCT Europe), Vice-President: Jane Apperley (EBMT), Medical Director: Diana Samson, Accreditation Committee chairman: Derwood Pamphilon, Executive Officer: Eoin McGrath. *Sector representatives*: Paediatrics: Jackie Cornish, Nursing: Mairead ní Chonghaile, NETCORD: Peter Wernet. *National Representatives*: Austria: Susanne Matthes-Martin; Belgium: Ivan Van Riet; Czech Republic: Vladimir Koza; Denmark: Niels Jacobsen; Estonia: Hele Everau; Finland: Tapani Ruutu; France: Catherine Boccaccio; Germany: Norbert Schmitz; Greece: Damianos Sotiropoulos; Italy: Alessandro Rambaldi; The Netherlands: Brigit Bar; Norway: Gunnar Kvalheim; Poland: Jerzy Holowiecki; Slovakia: Mikulas Hrubisko; Slovenia: Joze Pretner; Spain: Carlos Solano; Sweden: Per Ljungman; Switzerland: A Gratwohl; Turkey: Osman Ilhan; United Kingdom: Mark Lowdell.

The JACIE standards

The JACIE standards⁴ cover all aspects of clinical transplant programmes, collection facilities (BM collection and peripheral blood progenitor cell collection) and processing, as shown in Table 1. The standards also apply to the use of therapeutic cells derived from blood or marrow, including donor lymphocytes.

Within each subsection are detailed lists of specific standards; for example the standard on donor evaluation and selection contains 33 specific items relating to clinical evaluation, laboratory testing, informed consent, etc. The complete standards and the accompanying guidance manual are available on the JACIE website.² Work on the third edition of the standards is now complete and they will be released shortly.

JACIE standards conform to the Tissues and Cells Directive as regards donation, procurement and processing of stem cells, but also cover clinical transplant programmes. Accreditation of clinical programmes includes the clinical use of cord blood (CB) stem cells but the JACIE programme does not accredit CB collection and banking facilities as this process is currently carried out by NETCORD-FACT.⁵

The JACIE manual and inspection checklist

The manual contains the standards together with detailed guidance on the interpretation and measures required to demonstrate compliance. Each standard is followed by specific questions relating to that standard and these questions form the basis of the inspection checklist, which must be completed before inspection by the applicant centre and verified by the inspector during the inspection (Figure 2).

The accreditation process

Preparation by centre

The centre implements measures as described in the JACIE accreditation manual, and then applies for inspection by submitting basic information about the programme/facility and a number of supporting documents including a

Table 1 Contents of the JACIE Standards (2nd ed. June 2003)

<i>Clinical programme</i>	<i>Collection</i>	<i>Processing</i>
<i>Size and organisation</i>		
Facilities	Facilities	Facilities
Staffing	Staffing	Staffing
Quality Management Programme	Quality Management Programme	Quality Management Programme
Policies and Procedures	Policies and Procedures	Policies and Procedures
Donor evaluation and selection	Donor evaluation/care at time of collection	Processing
Administration of high dose therapy	Collection procedure (BM or PBPC)	Cryopreservation
Clinical research	Labels	Labels
Data management	Records	Issue
Records		Conditions for storage
		Transportation
		Records

Abbreviations: BM, bone marrow; PBPC, peripheral blood progenitor cells.

INSPECTION CHECKLIST:		APPLICANT			INSPECTOR		
B6.000 DONOR EVALUATION, SELECTION AND MANAGEMENT	**	Y	N	N/A	Y	N	N/A
B6.100 Are there donor evaluation procedures in place to protect the safety of the haematopoietic progenitor cell donor and recipient?	D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do these evaluation procedures assess the potential for disease transmission from the donor to the recipient?	D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do these evaluation procedures assess the risks to the donor from the collection procedure?	D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are donor evaluation and selection test results documented?	D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B6.110 Are there written criteria for donor evaluation and selection?	D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 2 Example from checklist. D = deficiency if answered ‘No’ by applicant.

self-assessment checklist. The application information and checklist must be submitted in English, but all other documentation, including Standard Operating Procedures (SOPs), is accepted in the language of the centre.

Inspection

An on-site visit is carried out by a team of trained inspectors, usually one per facility (clinical/collection/processing). Inspectors are medical, scientific or other professional persons working in HSCT, with specific qualifications and experience for inspecting clinical, collection and/or processing facilities.⁶ Inspectors must attend a JACIE-sponsored training course and pass an examination. Where a clinical programme performs adult and paediatric transplants, an adult and a paediatric inspector will attend. Inspectors may also be from another country, but should be either native or fluent speakers of the relevant language. In countries where it is not possible to assign an inspector who speaks the language, a local expert is requested to assist with translation of interviews and documents as necessary.

An inspection visit lasts 1–1.5 days and involves discussion with staff during their work, review of documents/records and completion of a detailed checklist relating to the standards. The inspectors write a report in English, noting any areas of non-compliance with the standards, which is reviewed by the JACIE Office. Based on the inspectors’ findings, a supplementary report from the JACIE Medical Director (MD) is prepared indicating the current level of compliance (Table 2) and making specific recommendations for corrections and improvements. The distinction between minor deficiencies and more significant deficiencies is not strictly defined, but in general terms, specific deficiencies in documentation are considered minor

whereas more general problems with documentation or problems with processes or facilities are considered significant. Between 3 and 12 months is allowed for the centre to correct deficiencies, depending on the amount of work required. The Inspection report and Medical Director’s (MD) report are approved by the JACIE Executive Committee and then issued to the applicant centre. Recently, the JACIE Accreditation Committee was established, which will take over this role.

Centre response

The centre must indicate acceptance of the findings and then in due course submit documentary evidence to confirm corrections or amendments. The original inspectors review the documentation. Review by the inspectors rather than by the Accreditation Committee, MD or JACIE office alone is required because of language issues. In some cases, a limited revisit may be the best way to show that deficiencies have been remedied. The inspectors confirm to JACIE that all necessary corrections have been made or indicate that there are still outstanding areas for completion.

Accreditation

The Medical Director reviews all the reports and relevant documentation and if satisfied that all previous deficiencies have been corrected, the JACIE Executive Committee (in future the JACIE Accreditation Committee) makes a recommendation to the JACIE Board that the centre be awarded accreditation. If approved, accreditation is awarded, valid for 3 years, subject to an annual report from the centre noting any significant changes in personnel or procedures and including annual activity figures.

Table 2 Levels of compliance

No.	Description
1	No deficiencies or variances from recommendation observed at the on-site inspection or documented on submitted materials. Full accreditation for 3 years awarded effective from the date of the Board decision.
2	Few minor deficiencies noted at the on-site inspection and/or documented in submitted materials. Full accreditation requires Programme Director's documentation of correction of all deficiencies and satisfactory response to recommendations.
3	Significant deficiency or deficiencies documented at the site inspection. Full accreditation requires Programme Director's documentation of correction of all deficiencies and satisfactory response to recommendations.
4	Significant deficiency or deficiencies observed at the site inspection. Full accreditation requires Programme Director's documentation of correction of all deficiencies and satisfactory response to recommendations. Documentation of correction of deficiencies also requires that a focused re-inspection of one or more areas of the facility operation be conducted.
5	Significant deficiencies observed during the site inspection requiring a full re-inspection of the applicant facility to document correction of all deficiencies.
6	Nonaccreditation. Reapplication and submission of documents required.

Since 2006 the numerical gradings are used only by JACIE for internal purposes and do not form part of reports to centres.

Outcome of inspections

To date, over 80 facilities have formally applied for accreditation. Between January 2004 and August 2006 35 centres were inspected. Twenty-nine centres applied for accreditation for a combination of clinical, collection and processing facilities. One centre applied for clinical and collection only, three centres applied for collection and processing, one for apheresis collection only and one for processing only.

Almost all were found to be functioning at a high level of excellence. Fifty-seven per cent were assessed as initially compliant at level 2, 40% at level 3, and 3% at level 4. In four centres assessed as level 3 a limited reinspection was recommended as the simplest means of demonstrating compliance because of general problems in the quality management system (QMS) of the clinical programme.

The most common deficiencies were in documentation, labelling and in the quality management programme. This is consistent with the initial experience of the FACT accreditation programme in the United States.⁷

Common deficiencies

Minor failures of compliance were frequent, usually involving problems with documentation. Examples include:

- SOPs missing references.
- Pregnancy assessment not documented during donor evaluation.

More significant failures of compliance were less common. Examples include:

- Programme not functioning as a single programme (e.g. SOPs not uniform across different clinical sites, for example, where allogeneic and autologous patients, or adult and paediatric patients were treated on different sites).
- Outpatient facilities inadequate (e.g. no provision for isolation of infectious patients).
- Inadequate QMS.
- No continuous temperature monitoring of freezers in processing facility.
- Temperature not monitored during transport of cells from processing facility to clinical unit.

- Engraftment data not monitored by processing facility.

Some of these significant deficiencies arose from lack of resources, for example, size of laboratory inadequate for workload or lack of an experienced quality manager.

Analysis of deficiencies

QMS. Deficiencies in the QMS were by far the most common cause of failure of compliance with the standards and, including problems with policies and procedures (SOPs), accounted for 35% (201 of 570) of total cited deficiencies (Figure 3).

Deficiencies in QMS included:

- Problems with the formatting and content of SOPs, for example,
 - missing examples of worksheets/forms/labels,
 - missing references (where relevant) and
 - failure to include range of expected results (where relevant).
- Lack of procedure for documenting deviations from SOPs.
- Lack of regular review process for SOPs.
- No SOPs for critical procedures, for example, bone marrow collection.
- Inadequate document control procedure.
- Lack of validation of equipment/procedures in collection and processing facilities.
- Inadequate audit activity, for example,
 - no SOP for audit,
 - no written programme for planned audits,
 - no documentation of results of audits and
 - no formal process for disseminating results.
- Inadequate adverse event (AE) reporting/reviewing. Centres often used a hospital-based incident reporting system, but in many cases it appeared from the number of reported AEs that this was not adequate to meet the needs of the HSCT programme. Often it was not clear that all AEs were reviewed by the programme director and/or that a report was issued to the patient's physician.

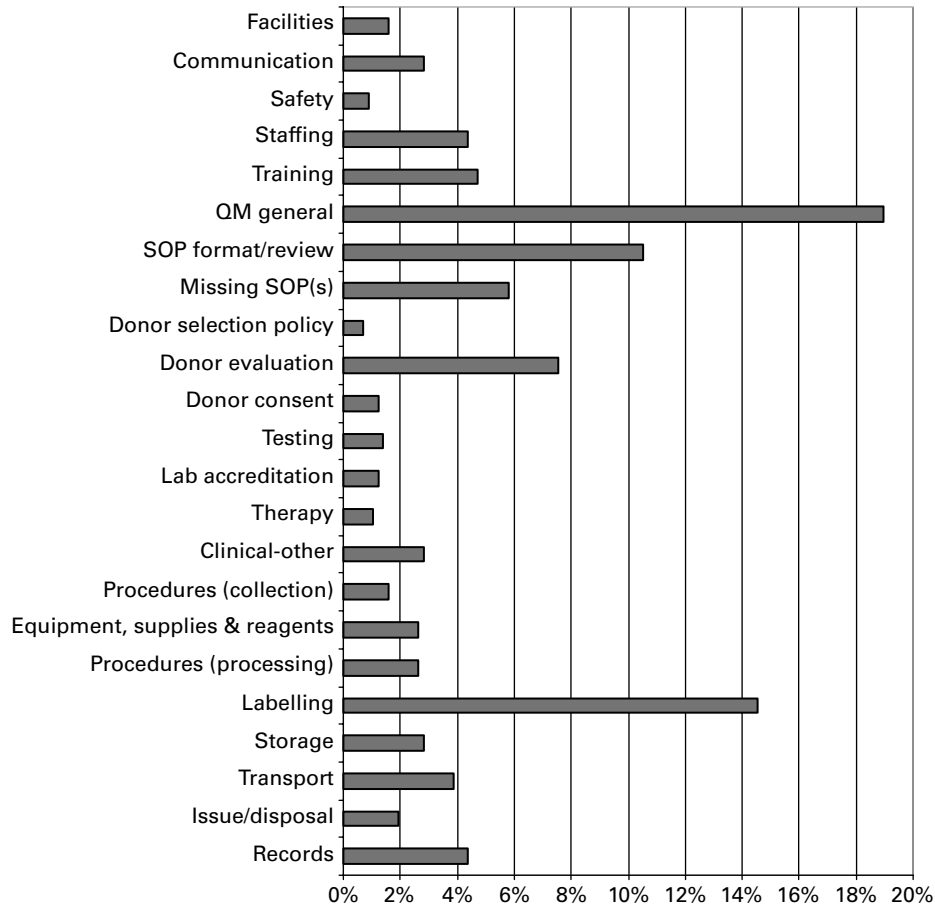


Figure 3 Areas of deficiencies as percentage of total deficiencies. Based on analysis of 570 deficiencies encountered in 35 inspections.

Patient/donor issues

Deficiencies in documentation were frequent.

- No verification of patient's initial diagnosis from primary records.
- No formally documented criteria for defining suitable donor.
- Failure to document vaccination history, transfusion history or travel history.
- Pregnancy not always assessed in female donors of childbearing age.

Labelling of components

JACIE standards for labelling of components require detailed information to be shown on the label. In the majority of centres, it was found that labelling of products during collection and processing was not compliant with the standards in a variety of ways, accounting for 15% of all cited deficiencies (83 of 570), for example,

- time of end of collection/processing missing,
- volume of anticoagulant missing, and
- unique identifier (alphanumeric number) not used at collection.

It appears that centres have a common problem in designing JACIE-compliant labels. This is being addressed

by the International Cellular Therapy Coding and Labeling Advisory Group, which is aiming to design suitable labels for general use and incorporating the requirements of the ISBT 128 standard for stem cell component identification⁸ and has provisionally set May 2007 as the date by which to complete its final documents and recommendations. Further information on the work of this group is available at http://iccbba.org/cellulartherapy_home.html.

The analysis of common deficiencies in Figure 3 shows that quality management and component labelling are the most frequently observed sources of deficiencies. Incomplete donor evaluation was also frequent. The frequency of deficiencies involving quality management and AE reporting are consistent with the reported difficulties experienced by centres (see below). A list of common deficiencies is available on the JACIE website.²

Current status of centres including time taken for correction/accreditation

At the time of reporting 28 of the 35 inspected centres have completed correction of all deficiencies and achieved accreditation with a further four recommended to the Board for accreditation, as shown in Table 3. One additional clinical programme is awaiting accreditation of

Table 3 JACIE Accredited Centres – August 2006

Austria	St Anna Kinderspital, Vienna	Switzerland	Kantonsspital, Aarau
Austria	First Medical Department, Medical University of Vienna	Switzerland	University hospital, Basel
Finland	Helsinki University Central Hospital	Switzerland	Istituto Oncologie della Svizzera Italiana, Bellinzona
France	Service des Maladies du Sang, Hôpital Haut-Lévêque, Bordeaux	Switzerland	SZT – Programm, Universitätsspital, Bern
France	Service d'Hématologie, Hôpital E Herriot, Lyon	Switzerland	Service d'Hématologie, Hôpital Cantonal Universitaire, Geneva
France	Fédération de Greffe de Moelle et de Thérapie Cellulaire d'Auvergne, Clermont Ferrand	Switzerland	Programme lausannois de transplantation de cellules souches hématopoïétiques autologues, Lausanne
France	Service d'Hématologie Clinique du CHU Henri Mondor et Laboratoire Thérapie Cellulaire et Unité de Prélèvements thérapeutiques de l'EFS (Site Henri Mondor), Creteil	Switzerland	Kantonsspital, St Gallen
France	Insitut Gustave Roussy, Département de Pédiatrie, Villejuif	Switzerland	Stiftung Zurcher Blutspendedienst, Schlieren
France	Service d'Hématologie-Greffe de moelle, Hôpital St Louis, Paris	UK	Heartlands Hospital, Birmingham
Italy	Department of Pediatrics, Ospedale Regina Margherita di Torino	UK	NBS Birmingham Stem Cell and Immunotherapy Laboratory
Netherlands	Leids Universitair Medisch Centrum, Leiden	UK	Bristol Bone Marrow Transplant Programme
Netherlands	Department of Haematology, HagaZiekenhuis, The Hague	UK	Yorkshire Blood and Bone Marrow Transplant Centre Leeds
Netherlands	Erasmus Medical Centre, Rotterdam	UK	NBS Leeds
Netherlands	UMC Utrecht Stem Cell Laboratory	UK	Nottingham City Hospital

Please refer to www.jacie.org for the most up-to-date list of accredited centres (EFS: Établissements Français du Sang; NBS: National Blood Service).

their human leukocyte antigen typing laboratory by the European Federation of Immunogenetics EFI (a requirement under standard B2.190) before full accreditation can be awarded but is otherwise fully compliant with the JACIE standards. Five programmes are still in the process of correcting deficiencies. The time taken to document correction of deficiencies has varied from 5.5 to 19 months, with a median of 11.5 months. In future, the maximum amount of time allowed to correct deficiencies will be 12 months (from the time the centre receives the initial report).

Experience of centres implementing JACIE

It was anticipated that implementation of the JACIE standards would pose some difficulties for applicant centres, particularly in relation to establishing a QMS and accompanying documentation. Although QM is well established in laboratory practice, and most processing facilities will already have an established QM programme, a QM programme is rarely in place in clinical units. It was also anticipated that there would be resource implications in terms of staff time because of the amount of detailed documentation that is required to demonstrate compliance with the standards.

An initial survey was designed to assess the difficulties experienced by centres in preparing for accreditation. All centres were asked to complete the survey immediately following inspection and return to the JACIE Office. The

survey was completed online and responders were given the choice of including their centre name or submitting the survey anonymously.

The survey included questions addressing the following issues:

- Motivation for applying.
- Time period from decision to apply to date of inspection.
- Level and experience of staffing responsible for project management.
- Part of programme (clinical, collection, processing) where most difficulty was experienced.
- Level of difficulty experienced in different areas (e.g. implementing QMS, training).
- Extra resources specifically required to implement JACIE.
- Impact of implementation of JACIE in terms of the functioning of the programme.

A second survey was designed to assess the effect of implementation of JACIE. Centres were asked to complete this survey 6 months after inspection. This survey asked for an estimate of the number of additional staff hours per week required for maintaining the JACIE Standards and sought the centres' views on the benefit or drawbacks of having implemented JACIE. This survey included questions addressing the following issues:

- Whether programme had benefited from implementation of JACIE and if so in what areas.

- Did implementation of QMS bring to light any need for changes in the implementation of the transplant programme, and if so in what areas.
- Ongoing resource requirements to maintain standard.
- Overall opinion on value of JACIE implementation.

Survey results

Twenty-six centres have so far returned Survey 1 and 22 returned Survey 2.

Survey 1: common difficulties

The results of the survey were as follows:

- At least 18 months is needed for preparation in the majority of cases (6 months 4%; 1 year 19%; 18 months 42%; 2 years 31%).
- Twenty-two centres had additional staff other than the Programme Director to manage project implementation, but these staff were only part-time in 13 centres and only 11 had any experience in quality management.
- The area of greatest difficulty for most centres (Table 4) was in the clinical programme (clinical programme 62%, bone marrow collection facility 42%, peripheral blood stem cells collection facility 12%, processing facility 15% (some centres ticked more than one choice).
- Most difficulty was found in implementing the QMS, AE reporting system and other documentation. Twenty-four centres already had written policies and 88% had SOPs, an audit system and an AE reporting system, but in all cases further development was needed to bring these aspects of QMS up to the required standard. Lack of a culture of QM was cited as an important problem.
- The extra resources most frequently required were a quality manager (62% centres) and a data manager (35%). Only 19% needed to improve their facilities.
- Some financial support was provided in addition to departmental budget in 69% cases, either from hospital resources (35%), external grant (27%) or, in one case, from pharmaceutical companies.

The results of the survey are consistent with the findings of the inspectors that the most common deficiencies are

Table 4 Difficulties experienced by centres in preparation for accreditation, as reported in survey 1

	<i>Level of difficulty experienced</i>			
	<i>High (%)</i>	<i>Medium (%)</i>	<i>Low (%)</i>	<i>NA (%)</i>
Interpretation of JACIE standards	5	60	30	5
Staff motivation and commitment to accreditation	20	50	25	5
Interaction between units	15	30	50	5
Preparation of documentation	30	50	15	5
Absence of quality management culture and understanding	35	40	20	5
Drafting of the QMP	25	50	20	5

Abbreviations: JACIE, joint accreditation committee ISCT-EBMT; QMP, quality management plan. Results are expressed as percentage of responding centres. NA: this question not answered.

inadequacies in the QMS. The survey also indicates that these arise from lack of trained staff and absence of QM culture, particularly in the clinical setting. There is clearly an important need for training of clinical staff (doctors and nurses) in quality management. It is also important for centres to have a designated quality manager who has appropriate experience in QMS. One of the major aims of JACIE over the next 1–2 years is provision of more educational material such as model documents and a guide to implementing QMS in a transplant centre.

Survey 2: Impact of implementing JACIE

All responding centres indicated that they had benefited from implementing the JACIE standards. As shown in Table 5, the areas of greatest perceived benefit were in procedure and practices, staff motivation, control of AEs, and coordination between different areas of the programme. Significant benefits were also perceived in patient satisfaction, facilities, patient care and safety and training of new and existing staff.

Improvements clearly depend on the level of existing services, so that failure to demonstrate improvement in, for example, facilities or data management may reflect good pre-existing resources. In other areas, for example, AE reporting, the systems for monitoring performance were only set up as part of implementing JACIE, so that it is difficult to monitor improvements without an established baseline for comparison. Indeed implementation of JACIE may have the paradoxical effect of seeming to increase AEs because these were not previously adequately reported.

Nevertheless it seems clear that there are definite benefits in many areas of the programme, with a high degree of consistency in replies. The areas where little or no benefit was noted were in costs, compliance with requirements of health insurers/social security and in government recognition. It is evident, as discussed below that implementation and maintenance of a quality system increases the running costs of a programme. Regarding compliance with requirements of health insurers/social security and government

Table 5 Effect of implementation of JACIE

<i>Level of improvement</i>	<i>High (%)</i>	<i>Medium (%)</i>	<i>Low (%)</i>	<i>None (%)</i>	<i>NA (%)</i>
Control of incidents, events and adverse reactions	41	59			
Data management	23	64	9		5
Internal coordination	50	32	9		9
Patient satisfaction	23	36	18	14	9
Staff motivation	55	45			
Costs	9	18	23	45	5
Facilities		50	18	32	
Patient safety and care	27	55	9	5	5
Procedures and practices	50	45	5		
Training of new/existing staff	41	45	9		5
Compliance with health insurers'/social security demands	14	9	23	45	9
Government recognition	18	27	27	23	5

Level of improvements in programme functioning experienced by centres, as reported in Survey 2. Results are expressed as percentage of responding centres. NA: this question not answered.

recognition, this is likely to change in the near future with the impact of the tissues and cells Directive on the requirement to implement inspection and accreditation programmes in member states.

Eighty-one per cent of the centres reported that implementation of the QM system had highlighted a need for changes in the implementation of the transplant programme. The most common areas cited were a need for improved coordination between the different facilities, that is, clinical, collection and processing, and a need for more systematic audit and AE reporting. Other items were a need to improve patient medical records and to improve donor evaluation procedures.

All centres felt that accreditation was worth the effort invested. The majority (59%) replied 'The effort is a huge strain on resources but on balance it is worth it' whereas eight said 'There is no doubt that accreditation is worth the effort invested' (one failed to comment). With the implementation of the EU Directive on safety of tissues and cells (Directive 2004/23/EC) it is likely that collection and processing facilities will increasingly view compliance with JACIE standards as important in providing evidence that they are complying with the requirements of the Directive.

Ongoing resource requirements

All centres reported a requirement for additional resources on an ongoing basis. Eighty-two per cent (18/22) of the centres needed to employ additional staff on a permanent basis. Sixteen centres employed a new quality manager, full time in two cases and part-time in 14. One centre employed additional medical staff and one employed a full time transplant coordinator. Eighteen centres cited a need for ongoing training and extra effort by staff and seven centres reported using external consultation and independent audit as a means of improving their programme. Ongoing funding was obtained from departmental budgets and in many cases also hospital resources.

Comment on survey results

Despite the difficulties experienced by centres in implementing JACIE, there is no doubt that they felt the effort was worth it and that their programme had benefited from the process. There is also no doubt that additional resources are needed on an ongoing basis once the standards have been implemented. In the future there is a need to assess the effect of implementation on a more formal basis, using for example analyses of AEs and patient satisfaction questionnaires in order to allow a cost-benefit analysis of JACIE implementation. The resource implications experienced at one centre were reported in detail by Zahnd *et al.*⁹

Implications of EU Directive 2004/23/EC

The requirements of the Directive became law in EU member States on 7 April 2006. In order to support implementation of the Directive, two technical annexes

have been drawn up by the EU, which set out the detailed technical requirements of the Directive. The first covers donation, procurement and testing, and the second coding, processing, preservation, storage and distribution. Technical Annex 1 of the Directive was published as Commission Directive 2006/17/EC² on 8 February 2006 and Technical Annex 2 was published as Commission Directive 2006/86/EC³ on 24 October 2006. Updated information will be provided by the European Legal and Regulatory Affairs Committee on the ISCT website (<http://www.celltherapy-society.org>).

The current JACIE standards conform to the requirements of the Directive as regards donation, procurement and processing of stem cells, although JACIE is more detailed in many areas and JACIE standards also cover clinical transplant programmes. However, in some areas more explicit wording of the JACIE standards is required to fulfil the requirements of the Directive and appropriate changes have been incorporated into the third edition of the FACT-JACIE standards.

JACIE, FACT and the World Marrow Donor Association (WMDA) are working together to promote consistent interpretation of the requirements of the Directive by the regulatory authorities in the different member states. A detailed crosswalk comparing the requirements of the EU Directive and technical annexes with the FACT-JACIE standards and WMDA guidelines is in preparation (details will be available on the JACIE website).

Although support for accreditation among the professional transplant community is high, there are varying levels of engagement with JACIE by the regulatory authorities in different countries. It has proven very difficult to build up a standard picture of official support across the European Union owing to significant differences in regulatory structures, varying readiness to implement the Directive and political issues. However, it can be said that in a number of countries there has been support from the regulatory authorities, both direct and indirect, for the JACIE accreditation system. This is the case in Austria, Belgium, France, Italy, The Netherlands and the United Kingdom. In Spain, the National Transplant Organisation (ONT) has signed a formal agreement with JACIE and national scientific societies, which gives official support to voluntary accreditation by transplant units and will recognise accredited programmes as meeting quality and safety requirements. 31-10-2006 http://actualidad.terra.es/sociedad/articulo/ont_impulsa_acreditacion_centros_transfusion_1178645.htm.

Outside the EU, Swiss national law on regulating transplants already directly cites JACIE in relation to HSC transplants. A new law is currently being drafted that will require all HSC transplant centres to be JACIE accredited with effect from 1 January 2007. JACIE is currently cited as part of the law on compulsory health insurance requiring HSCT centres to be certified by the Swiss Transplant Workgroup on Blood And Marrow Transplantation in accordance with JACIE Standards. All 10 HSCT centres in the country have undergone inspection and the majority are now accredited.

Global harmonisation of standards

It is a fundamental aim of JACIE to ensure that the FACT–JACIE standards as far as possible are identical to other applicable national and international requirements, including those of the EU. This is particularly important to prevent difficulties in importing and exporting tissues across international boundaries, which could occur if there were to be differences in the standards adopted in different countries.

JACIE has worked together with FACT on the 3rd edition of the standards and guidance, a draft of which was made available for public consultation in February 2006 and which is expected to be published in late 2006. The new version will be issued as a joint FACT–JACIE document. JACIE and FACT are also working with national and international donor registries and the WMDA to promote the use of international standards for collection facilities for unrelated donor transplants wherever possible, without jeopardising the availability of HSC from unrelated donors.

One of the results of this collaborative approach has been the establishment of an Alliance for the Harmonisation of Cellular Therapy Accreditation, whose members include American Association of Blood Banks, ASBMT, EBMT, FACT, International NETCORD Foundation, ISCT (Europe), JACIE and WMDA.

Conclusion

The JACIE accreditation system is now firmly established in Europe and the experience of centres that have been inspected is that implementation of the JACIE standards has led to significant improvements in different aspects of their transplant programmes. JACIE has further assisted with a number of training courses for preparing centres for accreditation and is currently working on a practical guide to quality management in HPC units. JACIE has also developed a close working relationship with other organisations involved in cellular therapy, which will form the basis for a new global approach to harmonisation of standards and accreditation systems worldwide. This collaboration represents an innovative and proactive approach in solving the problems of international exchange of tissues and cells as these relate to the stem cell transplant community.

Acknowledgements

In 2004, the European Commission part-funded the JACIE Project under the Programme of Community action in the field of public health (2003–2008). The total project budget of €351,695 was also supported by the EBMT and ISCT, and a number of national haematology and HSCT societies. We would like to acknowledge the assistance of Sarah Craig, JACIE administrative officer, and Sara Notley, EBMT administrative officer in the work of JACIE and the preparation of this paper.

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