

Cross border reproductive care in six European countries

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BACKGROUND: The quantity and the reasons for seeking cross border reproductive care are unknown. The present article provides a picture of this activity in six selected European countries receiving patients.

METHODS: Data were collected from 46 ART centres, participating voluntarily in six European countries receiving cross border patients. All treated patients treated in these centres during one calendar month filled out an individual questionnaire containing their major socio-demographic characteristics, the treatment sought and their reasons for seeking treatment outside their country of residence.

RESULTS: In total, 1230 forms were obtained from the six countries: 29.7% from Belgium, 20.5% from Czech Republic, 12.5% from Denmark, 5.3% from Slovenia, 15.7% from Spain and 16.3% from Switzerland. Patients originated from 49 different countries. Among the cross border patients participating, almost two-thirds came from four countries: Italy (31.8%), Germany (14.4%), The Netherlands (12.1%) and France (8.7%). The mean age of the participants was 37.3 years for all countries (range 21–51 years), 69.9% were married and 90% were heterosexual. Their reasons for crossing international borders for treatment varied by countries of origin: legal reasons were predominant for patients travelling from Italy (70.6%), Germany (80.2%), France (64.5%), Norway (71.6%) and Sweden (56.6%). Better access to treatment than in country of origin was more often noted for UK patients (34.0%) than for other nationalities. Quality was an important factor for patients from most countries.

CONCLUSIONS: The cross border phenomenon is now well entrenched. The data show that many patients travel to evade restrictive legislation in their own country, and that support from their home health providers is variable. There may be a need for professional societies to establish standards for cross border reproductive care.

Key words: access / cross border reproductive care / ethics / public health

Introduction

An unknown, but probably substantial, number of couples travel to another country in order to obtain fertility treatments with assisted reproductive technology (ART), including IVF with or without ICSI, Preimplantation Genetic Diagnosis (PGD) and gametes or embryo donation as well as intrauterine inseminations (IUI). This phenomenon has had several names over the last few years, and we have settled for the neutral descriptive term of 'cross border reproductive care', in order to avoid stigmatization of the patients who do not see their quest for treatment as 'tourism', but as a forced necessity. We thus

avoid this term because of its negative connotation (ESHRE Taskforce on Ethics and law, 2008). The semantic arguments have been well rehearsed, and the terminology ranges from the derogatory 'tourism' via the politically charged 'exile' to our pragmatic choice (Pennings 2002, 2004, 2005, 2006; Matorras, 2005; Inhorn and Patrizio, 2009).

Cross border health care, and more specifically reproductive care, is of concern to patients, practitioners and policy makers (Commission of the European Communities, 2008) alike. This is because patients naturally prefer to obtain care near their home, practitioners often see the complications of treatment abroad returning to their doorstep,

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as with multiple pregnancies of a high order (McKelvey et al., 2009) and regulatory bodies feel that the task that has been devolved to them, often by a national Parliament, is at least symbolically prejudiced by this 'exile'. Furthermore, only limited data, on such movements or their reasons, have yet been published. There are several reasons to explain such movements, among which the most frequent are law evasion, difficulty of access because of either restrictive legislation or long waiting lists, and expected quality of care (ESHRE Taskforce on Ethics and law, 2008).

This practice of going to another country may be viewed as a local limitation of rights to access reproductive care or as the exercise of patients' autonomy (Pennings, 2006). Indeed, cross border medical care is encouraged by European Union policy plans (Commission of the European Communities, 2008), although there is no certainty as yet when and whether fertility treatment will be part of this planned package. It raises many questions, amongst which are the differences in national laws and their practical effect on clinical practice and especially safety of the patients. This topic is often discussed with spectacular press titles (Dawar, 2009). However, no data exist to date, apart from one study representing Belgium incoming flow of foreign patients over 5 years (Pennings et al., 2009). Thus, there is a clear need for quantitative and qualitative information. ESHRE, as the main European professional and scientific organization in infertility, is concerned by this public health problem and has initiated a Taskforce for this topic. Indeed ESHRE's main concern resides in the safety of the patients and the gametes donors, and the organization has a history of taking part in debates of international dimensions, as shown by its statement on the ban of reproductive cloning (ESHRE, 2003). As quantification of cross border reproductive care is lacking, the Taskforce initiated a large multinational prospective study.

The initial purpose of the study was to get an estimate of the number of women/couples who cross borders for reproductive treatment, and of the reasons for them to make such a choice. It was not the intention to analyse the results of the treatments. In practice, it is almost impossible to obtain an estimate of the proportion of patients exiting their own country, as no data are kept in countries of origin. There is one Italian estimate of this phenomenon (Osseatorio Turismo procreativo, 2006), prompted by the restrictive change of legislation in 2004, which started an exodus of patients to less restrictive countries for treatment (Ferraretti et al., 2009). We therefore chose to study recipient countries, and the reasons patients had decided to go abroad. Additionally the help and support from their own country was investigated.

Materials and Methods

A collaboration between two ESHRE groups, the European IVF Monitoring (EIM) and the Taskforce on Ethics and Law was started in 2008, with three members of each group planning the study, and designing two questionnaires.

On the basis of the knowledge of the two ESHRE groups and their national contacts, it was found feasible to conduct this study in the following six countries: Belgium, the Czech Republic, Denmark, Switzerland, Slovenia and Spain. In each country the contact and information to ART centres were performed by a local national coordinator, as listed in the acknowledgement. Those centres that agreed to participate received the

summarized protocol, the forms and instructions. They were asked to enrol all women coming from abroad for an ART or IUI cycle during one calendar month. The patient form consisted in a simple, one-page questionnaire (Supplementary data), containing the main socio-demographic characteristics (age, marital status, sexual orientation, patient's and partner's education), the main reasons for crossing borders (law evasion, inaccessibility, quality of care), the type of treatments sought, the information received by the patients, and the degree of support/help from their doctor. We also enrolled the help of several colleagues (acknowledgement), who translated the instructions to participating collaborators and the questionnaires in all languages of the recipient countries and of the expected cross border patients.

More specifically, we asked whether the type of treatment sought was illegal in their home country, or illegal because of their specific socio-demographic characteristics, inaccessible because of waiting list times, distance or cost, or whether they expected better quality of care or had previous treatment failure. In the case of gamete/embryo donation, we also asked specifically whether the reason for crossing borders included a wish for anonymous, identifiable or known donation. Whenever appropriate, patients could tick more than one answer. Almost all questions were closed questions. In addition each clinic was asked to complete a short questionnaire, recording the total number of treatment cycles performed during the same month. The survey was conducted between October 2008 and March 2009.

The patients' forms contained no patient or centre identification. The study was approved by appropriate ethics committees, according to the rules of each specific collaborating country. Patient participation was anonymous.

Data were entered at ESHRE Central office, and analysed at INSERM (Institut National de la Santé et de la Recherche Médicale) with the SAS software system, version 9.1 (SAS institute inc. Cary, NC, USA). In this article, results are presented by country of origin and by country of destination.

Statistical methods include variance analysis to compare the quantitative variables like age across the countries and χ^2 to compare the distribution of categorical variables between the countries, with continuity adjustment in case of low calculated numbers.

Results

General description

In total, 1230 forms were received by ESHRE Central office, from 46 clinics participating in the six countries of cross border reproductive care destination (Table I): 29.7% from Belgium, 20.5% from the Czech republic, 12.5% from Denmark, 16.3% from Switzerland, 15.7% from Spain and 5.3% from Slovenia. In Slovenia all clinics collaborated (3/3) and in Denmark 21/24, in Belgium 50% of clinics (9/18), and only a few self-selected centres participated in the three other countries. Patients came from 49 countries, among which four countries were particularly represented, with more than 100 forms returned to ESHRE's Central Office from each: Italy (31.8%), Germany (14.8%), the Netherlands (12.1%) and France (8.7%). The following countries returned more than 50 forms each: Norway (5.5%), the UK (4.3%) and Sweden (4.3%). The remaining 42 countries of origin represented < 19% of returned forms ($n = 233$). Table I provides an overview of all 1230 women. It also shows that, of the participating individuals, the majority of Italians went to Switzerland and Spain, the majority of Germans to the Czech Republic, most Dutch

and French patients to Belgium with a smaller proportion choosing to go to Spain and most Norwegians and Swedes going to Denmark.

Socio-demographic characteristics

The mean age (Table II) of the participants was 37.3 years (range 21–51 years). The proportion of women aged 40 or over was 34.9% for the whole sample, and reached 51.1% for participants from Germany and 63.5% from the UK, compared with 32.2% from Italy and 30.2% from France.

Civil status was also very different according to the countries of residence (Table III). In total, 69.9% of women were married, 24.0% cohabiting and 6.1% single. Most Italian women were married (82.0%), although 50% of French women and 34.9% of Dutch women were cohabiting. Of women from Sweden, 43.4% were single. Many same sex couples had travelled from France, Sweden and Norway.

Furthermore, 57.9% of the women and 53.3% of the partners had a university degree and 29.3% (31.7% partners) had secondary education.

Reasons for crossing borders

Reasons varied from one 'outgoing' country to another. Legal reasons were predominant for patients coming from Italy (70.6%), Germany (80.2%), France (64.5%) and Norway (71.6%). Difficulties accessing treatment were more often noted by UK patients (34.0%) than by patients from other countries, and expected quality was an important factor for most patients (Table IV).

Furthermore, on average 17.9% patients indicated a 'wish for anonymous donation', in particular the French (42.1%), British (26.4%), Germans (25.4%), Swedes (18.9%) and Norwegians (16.4%).

Distribution of treatments sought

Among the responders (98.7% of all women answered this question), 22.2% of patients were seeking IUI only (Table V), 73.0% ART only whereas 4.9% were seeking both. The figures varied by country of origin, with a majority requesting IUI from France (61.7%) and Sweden (62.3%), and a majority requesting ART from other countries.

Table I Percentage of patients crossing borders to the six treating countries.

Country of residence	Received forms		Forms per treating country (%)					
	n	%	Belgium	Czech republic	Denmark	Slovenia	Spain	Switzerland
Italy	391	31.8	13.0	2.6	0.3	1.0	31.7	51.4
Germany	177	14.4	10.2	67.2	11.9	0.0	10.7	0.0
Netherlands	149	12.1	96.6	0.0	0.0	0.0	3.4	0.0
France	107	8.7	85.0	7.5	0.0	0.0	7.5	0.0
Norway	67	5.5	0.0	1.5	98.5	0.0	0.0	0.0
UK	53	4.3	7.55	52.8	11.3	0.0	28.3	0.0
Sweden	53	4.3	0.0	5.7	92.4	0.0	1.9	0.0
Other Europe	173	14.0	12.1	38.1	5.2	34.7	9.8	0.0
Outside Europe	46	3.7	54.3	35.2	4.3	0.0	6.5	0.0
Not specified	14	1.1	78.6	7.1	0.0	7.1	7.1	0.0
Total clinics:			9	6	21	3	5	2
Total forms: n	1230		365	252	154	65	193	201
%	100		29.7	20.5	12.5	5.3	15.7	16.3

Table II Age of the women crossing borders from the seven most represented countries.

	Women's age (%)					Range
	Mean \pm SD years	<35 (%)	35–39 (%)	40–44 (%)	\geq 45 (%)	
Italy	37.4 \pm 5.0	27.3	40.5	24.7	7.5	21–50
Germany	38.8 \pm 5.0	21.0	27.8	40.3	10.8	23–49
Netherlands	35.4 \pm 5.1	44.3	34.9	17.4	3.4	23–51
France	36.6 \pm 5.8	32.1	37.7	20.8	9.4	21–49
Norway	35.8 \pm 4.6	38.8	43.3	16.4	1.5	21–47
UK	40.8 \pm 5.4	11.5	25.0	32.7	30.8	21–49
Sweden	37.4 \pm 5.5	26.4	32.1	37.7	3.8	24–45
Total	37.3 \pm 5.1	29.5	35.6	26.8	8.1	21–51

Table III Civil status and sexual orientation according to patients' residence.

Country of residence	Civil status (%)			Sexual orientation (%)
	Married	Cohabiting	Single	Homo/Bisexual
Italy	82.0	17.2	0.8	1.5
Germany	72.0	25.7	2.3	11.2
Netherlands	62.3	34.9	2.7	8.5
France	33.6	50.0	16.4	39.2
Norway	47.6	28.6	23.8	21.3
UK	62.0	30.0	8.0	0.0
Sweden	32.1	24.5	43.4	32.7
Total (%)	69.9	24.0	6.1	9.7

Table IV General reasons for travelling (%) according to the country of patients' residence.

	Legal reason	Access difficulty	Better quality	Previous failure
Italy	70.6	2.6	46.3	26.1
Germany	80.2	6.8	32.8	43.5
France	64.5	12.1	20.6	18.7
Netherlands	32.2	7.4	53.0	25.5
Norway	71.6	0.0	22.4	16.4
UK	9.4	34.0	28.3	37.7
Sweden	56.6	13.2	24.5	5.7
Total %	54.8	7.0	43.2	29.1

With regards to gametes and embryo donation, 18.3% of patients were looking for semen donation, 22.8% for egg donation and 3.4% for embryo donation. There were considerable differences according to the country of origin. French, Norwegian and Swedish women looked for semen donation more often than others, whereas German and British women were seeking oocyte donation (OD) more frequently. In several cases, patients were considering more than one option.

Information, costs and reimbursement

For 91.4% of all patients, the information about the clinic they attended was obtained in their language, and considered satisfactory. Most patients declared having received information on cost (93.7%). However, the percentage was slightly lower in Belgium (88.0%) and Switzerland (88.2%).

Cost itself could not be quantified because of a large amount of missing information and inconsistencies, but in general, patients who sought treatment outside their country were poorly reimbursed (Table VI). Only 13.4% received partial reimbursement and 3.8% total reimbursement. The most generous country was the Netherlands, with a partial or total reimbursement of 44.4 and 22.1% of patients, respectively.

Selection of centres/destinations by patients

The two main sources of information to select their centre (Table VII) were the internet (41.1%) and patients' doctors (41.1%). Friends and relatives were also frequently consulted (24.2%). In contrast, patients' organizations were far less frequently utilized (5.0%). There were considerable differences between the different countries of origin: the internet was a frequent source in Sweden (73.6%), Germany (65.0%) and the UK (58.5%) whereas patients' doctors were more often cited by Italian women (55.2%).

Patients' doctors help

Among the patients who answered this question (92.3% of total), a majority (59.0%) received some help from their own doctor, for drug prescription (16.7%), cycle monitoring (16.7%) or both (25.6%). This varied across the countries, with a high level of medical support in Germany (81.7%), France (79.0%), Switzerland (86.4%), and a low level in the Netherlands (35.0%), the UK (45.3%) and Sweden (31.4%).

Treatments sought in the recipient countries

Patients sought mostly IUI (Table VIII) in Denmark (56.5%) and Switzerland (54.1%), whereas they requested ART in Slovenia (100%), the Czech Republic (98.4%) and Spain (98.4%). Oocyte and embryo donation were mainly provided by Spain (62%) and the Czech Republic (52%). Denmark (40.9%), Switzerland (27.4%) and Belgium (20.5%) received many patients seeking sperm donation.

Discussion

This prospective study is the first to present a set of hard data concerning cross border reproductive care at a European level and includes several countries known to be recipients of foreign patients.

We collected information about 1230 cycles conducted over a 1 month period in 44 clinics in six countries, which may represent around 12 000–15 000 cycles annually in those clinics taking into account seasonal variability and annual closures. As the selected countries were chosen because they are assumed to be popular countries of destination, simple extrapolation of our findings to estimate the whole European activity is inappropriate. However, a

Table V Sought treatment according to the country of patients' residence.

	Infertility treatment*		Specific treatments			
	ART	IUI	PGD-PGS	Donation**		
				Semen	Oocyte	Embryo
Italy	76.5	32.6	2.1	17.4	17.9	2.3
Germany	90.5	10.3	8.5	10.2	44.6	6.2
Netherlands	78.1	27.4	3.4	11.4	9.4	0.7
France	46.7	61.7	2.8	43.0	20.6	5.6
Norway	62.7	41.8	1.5	38.8	1.5	1.5
UK	90.6	9.4	3.8	15.1	62.3	11.3
Sweden	37.7	62.3	0.0	43.4	5.7	1.9
Total	77.9	27.1	3.2	18.3	22.8	3.4

Percentages are computed among the total number of women coming from each country.

*The sum of ART and IUI is over 100% because some patients (4.9%) sought both.

**Some patients sought more than one type donation.

Table VI Reimbursement according to the country of patient's residence.

	No	Partial	Total	Unspecified
Italy	74.9	10.7	0.3	14.1
Germany	81.9	8.5	2.3	7.3
Netherlands	16.8	44.3	22.1	16.8
France	77.6	12.2	3.7	6.5
Norway	79.1	10.4	1.5	9.0
UK	92.6	1.9	1.9	0.0
Sweden	73.6	3.8	0.0	22.6
Total	71.7	13.4	3.8	11.1

multiplication by a factor of two seems to be a minimum estimate or 24 000–30 000 cycles. If we then apply the treatment distribution of cycles observed in this study (75% ART, 25% IUI) and make the reasonable hypothesis that on average three cycles per patient are performed for IUI and two cycles per patient for ART, this leads to a minimum estimated number of 11 000–14 000 patients per year. This number confirms the importance of the cross border phenomenon, and also calls for the necessity of studying it more accurately. One possibility could be to incorporate patients' country of origin into the national registers so that this data might be summarized in the EIM database.

This study has some limitations, mainly due to the limited number of centres participating in some countries like Spain, where only 6 of the 131 centres participated. The voluntary nature of this study made this unavoidable, and indeed the national register required by Spanish legislation is only at embryonic stage as it was, until recently, lacking funding. One of the main strengths of this study, however, was the collection of individual patient data obtained from those seeking treatment abroad and this is the first study on a relatively large scale using this method.

The mean age of female patients crossing borders to obtain reproductive treatment was 37.3 ± 5.1 years, which is older on average than European patients treated with ART (Nyboe Andersen *et al.*, 2009). For example, 33.2% of Italian women were aged 40 or more in our study, whereas this age group of Italian patients represented 20.7% in the latest EIM report ($P < 0.05$). The same was true for German women (51.1 versus 11.1%, $P < 0.05$) and French women (30.2 versus 12.7%, $P < 0.05$). However, our data belies some of the misgivings expressed by the public, puzzled if not outraged when women over the age of 60 go for treatment abroad (Dawar, 2009) since no one was older than 51 years in our sample.

There may be several explanations for the increased age, according to the patients' country of residence. For example, in Germany, OD, a treatment generally required by older women, is forbidden by law (Beier and Beckman, 1991) and was sought by almost half the German women (Table V). In France, the law restricts ART access to women of 'reproductive age', which in practice means 43 and, in the UK, access to free NHS treatment is limited to women below 40. Furthermore, when patients look for 'better quality' abroad, it is mostly after previous failure at home, which results in them being older. Finally, they have on average a level of education higher than the general population, which is usually related to an older reproductive age (Eurostat, 2009).

Before reviewing the different reasons for crossing borders, we note that many patients (about one in three in our sample) stated more than one reason to travel abroad. An average of 29.1% of patients had previous failure of treatment (Table IV), with German and UK residents above the average (respectively, 43.5 and 37.7%). In the case of Germany, this higher percentage may be due to recent decrease in the funding of cycles through insurance regulations (Connolly *et al.*, 2009), as it may be cheaper to cross the border to the Czech Republic than to have a cycle in the private sector at home. In the case of the UK, regions have autonomy in prioritizing (or not) the funding of ART, resulting in vastly different waiting lists and inequity of access, particularly in the number of cycles reimbursed (Shenfield, 1997; Shapps, 2009). Interestingly, the Swedish, Norwegian and

Table VII Selection mode of the centre according to the country of patients' residence.

	Internet	Patients organization	Friends	Doctor	Unspecified
Italy	25.3	1.5	25.8	55.2	2.6
Germany	65.0	4.0	11.9	35.6	2.8
Netherlands	42.3	6.0	20.8	39.6	6.0
France	44.9	10.3	29.0	27.1	5.6
Norway	49.3	6.0	22.4	31.3	4.5
UK	58.5	18.9	15.1	28.3	3.8
Sweden	73.6	9.4	24.5	13.2	5.7
Total	41.1	5.0	24.2	41.1	3.7

Table VIII Treatment sought according to the recipient country.

Recipient country	Forms (n)	Infertility treatment*		PGD/PGS	Donation*		
		ART	IUI		Semen	Oocyte	Embryo
Belgium	359	71.9	33.4	5.2	20.5	6.8	0.3
Czech Republic	251	98.4	1.6	5.6	9.5	52.4	11.9
Denmark	154	46.8	55.5	0.6	40.9	1.3	0.6
Slovenia	64	100	0.0	0.0	0.0	0.0	0.0
Spain	190	98.4	5.8	2.1	4.1	62.2	4.7
Switzerland	196	59.7	54.1	0.5	27.4	1.0	0.5
Total	1214*	73.0	22.2	3.2	18.3	22.8	3.4

*The total number (1214) differs from the total of received forms in Table I (1230) as this information was difficult to ascertain in 16 cases.

French residents only mention this specific reason (previous failure) in 5.7, 16.4 and 18.4%, respectively, well below the average. Indeed, we know that reimbursement is generous in the Nordic countries, and good in France: the Swedish, Norwegian and French residents mention 'difficulty of access' in, respectively, 13.2, 0.0 and 12.1%, although the UK residents quote 34%.

Vicinity of treatment is also a common factor between all patients. Ease of access via common borders explains why so many French women go to Belgium, mainly for sperm donation (Pennings *et al.*, 2009). It is, however, surprising to note the relatively small number of French women going to Spain for OD, however, this result is likely to also reflect the low proportion of participating centres in Spain: we had six participating centres, whereas 131 report to EIM (Nyboe Anderson *et al.*, 2009). Swedes and Norwegians go to Denmark (>90%), again within a short distance, and Germans go mostly (67.2%) to the Czech Republic. Furthermore 50% Italian women go to Switzerland for sperm donation.

Our findings show that the majority of patients cross borders for legal reasons (Table IV), with the exception of Dutch or UK citizens. Thus legal barriers are a major factor, either because of a specific ban on some techniques like gametes donation or PGD, or because of a prohibition on treatment of patients with specific characteristics like sexual preference or age. Italian law banned all donor gametes and PGD techniques in 2004 (Italian Law, 40-2004), sending a wave of patients to neighbouring countries: Switzerland received 51% of the

Italian patients, mostly for sperm donation and Spain received 31.7%, mostly for OD. German law bans OD and 44.6% of the German patients in this study were requesting OD (Table V), although French law bans 'private' advertising for recruiting, leading to a dearth of donors, and 20.6% of our French patients requested OD.

Another legal barrier, which increases the number of movements across border for donor insemination is the regulation regarding donor anonymity. Scandinavian patients often go to Denmark for donor insemination where anonymity is compulsory in the medical setting. In this study, 18.9% of Swedish and 16.4% of Norwegian patients stated they did not merely want donor insemination, but that they sought anonymous donation. Thus, for Sweden and Norway, this flow is most likely related to the legislation requiring non-anonymous donation (Swedish Insemination Act, 1985). Another important legal reason is related to the civil status and sexual orientation of the patient.

In Sweden only couples have access, whether homosexual or heterosexual, which explains the high proportion of single Swedish women (43.4%) seeking treatment abroad. Also, until recently, donor insemination was unavailable to lesbian couples in Norway (Norwegian Law, 1987), where the reversal of this ban thanks to legislation on non-discrimination on the grounds of sexual orientation in early 2009 has not yet been followed by improved access, explaining why 20% of Norwegian participants were lesbians. In France, assisted conception for single women or same sex couples is illegal (Law no.

94-654, 1994; Law no. 2004-800, 2004). Thus in our sample, almost 39.2% of the French women were lesbians and 16.4% were single. In contrast, none travelled from the UK for these reasons, as access to treatment for single or homosexual women has never been forbidden (HFEAct, 1990) and the legislation is one of the most open and tolerant to differences in Europe (HFEAct, 2008). Indeed, for the patients originating from the UK, legal reasons were the lowest of our sample, with only 9.4%. Furthermore, lesbian couples going through ART have recently have been given equal parenting rights and responsibilities to heterosexual couples (HFEAct, 2008).

Furthermore, examination of the data in more detail, shows an apparent inconsistency in the answers by single and lesbian women, who can only become pregnant with donor semen. However, 70 of them did not indicate this answer in the response questionnaire. Some of them may have had a known donor or other specific situation, but the simple explanation for most of them is that they may have had the impression they already responded by indicating 'artificial insemination' in their sought treatment.

Thus, statutory limits concerning access to ART vary widely between European countries, and this may partially explain some of the movements. Additionally some countries have regulations that limit reimbursement of ART to a maximum age. For instance, in France state funding to reimburse costs if women are aged 43 years or over, and in the Netherlands treatment is forbidden after 41 years (Pennings *et al.*, 2009).

The lack of access to donor gametes may also be linked to the regulatory limits of compensation to donors. Examples of this are the UK allowing a very limited compensation and France where compensation is forbidden whereas in Spain (about 900 euros) and the Czech Republic (~500 euros) more compensation is allowed (Garcia Vasco, 2007). The significance of this is supported by the observation that in our study 62.2% of foreign patients treated in Spain and 62.4% in Czech Republic requested OD. However, the degree of the compensation may not be the only cause of the high number of gamete recipients in these countries, since in Spain there is a strong tradition of donation reflected in the high rate of organ donation (EU/health stats).

For the Dutch patients the main reason was the search for 'quality' (53%) which may relate to ICSI with testicular sperm being only accessible in a research setting in the Netherlands, and in fact be also a kind of legal barrier.

Finally, from the ethical, political and public health points of view, one needs to consider justice and safety. Even if local access is preferable on the grounds that patients are nearer their usual support system, like friends and family, the evidence that they cross international borders in large numbers may have little effect on national policy. Indeed 'at present, the movements by patients to other countries can be seen as a form of civil disobedience, which intends to change the existing legislation' but which also 'may have the opposite effect: politicians may accept the movements of some citizens to clinics abroad as a safety valve which decreases the pressure for law reform internally' (ESHRE Taskforce on Ethics and Law 15, 2008). Many may have to wait a long time before they see improved access at the national level.

Clearly there is inequality of access to fertility treatments in Europe, and although cross border movements can increase the autonomy of our patients, it must be stressed that in many instances it is only

available to those with the financial means of travelling (ESHRE Taskforce on Ethics and Law 14, 2008), apart from the cases where patients state that a private cycle (including travel) abroad is cheaper than at home. This may be particularly so when they go to some Eastern European countries not included in our study, or further a field, like India. Nevertheless, this also raises further ethical issues specific to low income countries, with the danger of this cross border influx may 'aggravate the already existing brain-drain of health care professionals to private hospitals' (ESHRE Task Force on Ethics and Law 16, 2009).

Conclusion

This study is the first analysing cross border reproductive care movements between several European countries. The study documents a considerable flow of patients crossing borders between European countries. In relation to quantity, 1230 cycles were recorded during a single month in the participating centres, implying that the annual number of cycles reached a minimum of 24–30 000 cycles.

The main reasons for travelling were legal restrictions based on prohibition of the technique *per se*, or because of inaccessibility due to the characteristics of the patients (like age, sexual orientation or civil status).

This phenomenon raises many broad social, ethical and political problems, which require a coordinate effort from various stakeholders like patients' organizations, professional societies and policy makers both at the national and European levels. If patients cross border in order to avoid 'unfriendly' legislation, some might argue that only 'legal uniformity' at European level would solve the problem, if indeed crossing borders is seen as a problem. This infringement on national law making is, however, rather far from any spirit of European policy making, which favours devolution in many cases, and which is in fact only starting to reflect on health issues, including their reimbursement. Such partial control may however come in the possibly near future, as seen by the example of the European Commission Tissue directive (COMMISSION DIRECTIVE, 2006) which certainly has affected the practical management of the reproductive field.

We plan to gather more data in the future, with the help of the EIM database, and the collaboration of individual national societies. Meanwhile, and while waiting for larger more comprehensive meaningful numbers, ESHRE wishes to reflect on the means of increasing the safety of crossing border for our patients, with either the establishment of a Code of Practice, or certification of centres. This ongoing process is already planned and will be reported in due course.

Supplementary data

Supplementary data are available at <http://humrep.oxfordjournals.org/>.

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References

- Beier HM, Beckman JO. Implications and consequences of the Embryo Protection Act. *Hum Reprod* 1991;**6**:607–608.
- COMMISSION DIRECTIVE 2006/86/EC of 24 October 2006 implementing Directive 2004/23/EC of the European Parliament and of the Council as regards traceability requirements, notification of serious adverse reactions and events and certain technical requirements for the coding, processing, preservation, storage and distribution of human tissues and cells. <http://eur-lex.europa.eu>.
- Commission of the European Communities. Proposal for a Directive of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare, Presented by the European Commission on 2 July 2008, Copyright: European Communities, 2008; Directorate-General for Health and Consumers, European Commission—B-1049 Brussels. http://ec.europa.eu/dgs/health_consumer/index_en.htm.
- Connolly MP, Griesinger G, Ledger W, Postma MJ. The impact of introducing patient co-payments in Germany on the use of IVF and ICSI: a price-elasticity of demand assessment. *Hum Reprod* 2009; **24**:2096–2800.
- Dawar A. Pregnant woman, 66, set to be the oldest woman to give birth in England. www.guardian.co.uk/uk/2009/may/16/66-year-old-mother.
- ESHRE statement on reproductive cloning. www.eshre.com.
- ESHRE Task Force on Ethics and Law 14. Equity of access to ART. *Hum Reprod* 2008;**23**:772–774.
- ESHRE Task Force on Ethics and Law 15. Cross border reproductive care. *Hum Reprod* 2008;**23**:2182–2184.
- ESHRE Task Force on Ethics and Law 16. Providing infertility treatment in resource-poor countries. *Hum Reprod* 2009;**24**:1008–1011.
- EU/health stats. [Ec.europa.eu/health/ph_threats/human.organs/.fact_figures](http://ec.europa.eu/health/ph_threats/human.organs/.fact_figures) (28 January 2010, last date accessed).
- Eurostat year book 2009 (population) www.ec.europa.eu/research/rtdinfo/49.
- Ferraretti AP, Pennings G, Gianaroli L, Natali F, Maggi MC. Cross border reproductive care: a phenomenon focusing the controversial aspects of reproductive technologies. *Reprod BioMed Online* 2010;**20**:261–266.
- Garcia Velasco J. Egg donation in Spain. *Focus in Reproduction* May 2007, p.26–30. www.eshre.com.
- HFEAct. 2008. www.dh.gov.uk/en/./Legislation/Actsandbills/DH_080211. [dh.gov.uk/en/./Legislation/Actsandbills/DH_080211](http://www.dh.gov.uk/en/./Legislation/Actsandbills/DH_080211).
- Human Fertilisation and Embryology Act 1990. www.hmsa.gov.uk/acts/acts_1990/Ukpga_19900037.
- Inhorn MC, Patrizio P. Rethinking reproductive 'tourism' as reproductive 'exile'. *Fertil Steril* 2009;**92**:904–906.
- Italian Law n 40, art. 4 (Access to the ART techniques), clause 3.
- Law no. 94-654, July 29th 1994 relating to the donation and use of elements and products of the human body, to assisted reproductive techniques and to prenatal diagnosis, www.legifrance.gouv.fr/loi/bioethique 1994.
- Law no. 2004-800, August 6th 2004 relating to bioethics, www.ladocumentationfrancaise.fr/bioethique/loi-bioethique-2004.
- Matorras R. Reproductive exile versus reproductive tourism (Letter). *Hum Reprod* 2005;**20**:3571.
- McKelvey A, David AL, Shenfield F, Jauniaux ER. The impact of cross-border reproductive care or 'fertility tourism' on NHS maternity services. *BJOG* 2009;**116**:1520–1523.
- Norwegian Law on the Human-Medical use of Biotechnology. 1987. www.norden.org/da/publikationer.norden.org/da/publikationer.
- Nyboe Andersen A, Goossens V, Bhattacharya S, Ferraretti AP, Kupka MS, de Mouzon J, Nygren KG, and The European IVF-monitoring (EIM) Consortium, for the European Society of Human Reproduction, Embryology (ESHRE). Assisted reproductive technology and intrauterine inseminations in Europe, 2005: results generated from European registers by ESHRE: ESHRE. The European IVF Monitoring Programme (EIM), for the European Society of Human Reproduction and Embryology (ESHRE). *Hum Reprod* 2009;**24**:1267–1287.
- Ossevatorio Turismo procrativo. Turismo procrativo: sempre piu coppie cercano la cicogna all'estero. Conference, 30 November 2006, Roma, CECOS, Italy.
- Pennings G. Reproductive tourism as moral pluralism in motion. *J Med Ethics* 2002;**28**:337–341.
- Pennings G. Legal harmonisation and reproductive tourism in Europe. *Hum Reprod* 2004;**19**:2689–2694.
- Pennings G. Reproductive exile versus reproductive tourism. *Hum Reprod* 2005;**20**:3571–3572.
- Pennings G. International parenthood via procreative tourism. In: Shenfield F, Sureau C (eds). *Contemporary Ethical Dilemmas in Assisted Reproduction*. Abingdon, Oxon: Informa Health Care, 2006, 43–56.
- Pennings G, Autin C, Decler W, Delbaere A, Delbeke L, Delvigne A, De Neubourg D, Devroey P, Dhont M, D'Hooghe T et al. Cross border reproductive care in Belgium. *Hum Reprod* 2009; doi:10.1093/humrep/dep300.
- Shapps G. The IVF postcode lottery: Don't promise what you can't deliver. *Bionews*, 09 August 2009, www.bionewswww.bionews.
- Shenfield F. Justice and access to fertility treatments. In: Shenfield F, Sureau C (eds)., *Ethical Dilemmas in Assisted Reproduction*. New York and Carnwath USA: Parthenon, 1997, 7–14.
- Swedish Insemination Act No 1140/1984. 14. National Board 1985, www.norden.org/da/publikationer.norden.org/da/publikationer.

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