Cross-border fertility services in North America: a survey of Canadian and American providers

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Objective: To identify the scope and volume of cross-border fertility services in Canada and the U.S. and to evaluate the three-way communication between patients and their service providers in 2008.
Design: Mail and on-line surveys of cross-border fertility care activity were sent to 34 Canadian and 392 American fertility clinics and clinicians.
Main Outcome Measure(s): Clinician and patient experience with assisted reproductive technologies.
Result(s): The most commonly reported cross-border treatment sought by Canadians was anonymous donor–oocyte in vitro fertilization (IVF; 363 out of 452, 80%). For patients entering Canada to receive fertility treatment, the largest demand was for IVF (106 out of 146, 73%). The majority of out-of-country patients received by U.S. clinics sought standard IVF (927 out of 1,809, 51%), most of these coming from Europe (25%) and Latin America (39%). The largest proportion of patients leaving the U.S. to receive IVF (41%) or donor-egg IVF (52%) traveled to India/Asia. Concurrence was seen between Canadian and U.S. clinics' ratings of key data that should be provided along with returning patients. Experience of earlier patients with individual centers and perceived safety and effectiveness of care are the key factors in choice of destination.
Conclusion(s): Anonymous donor–oocyte IVF is the main assisted reproductive technology sought by Canadians traveling to the U.S. India and Asia are the main destinations for U.S. women leaving the country for their fertility care. Three-way communication between patients and sending and receiving clinics is an important element of safe and effective care. (Fertil Steril® 2010;94:e16–e19. ©2010 by American Society for Reproductive Medicine.)

Key Words: Cross-border fertility care, anonymous donor–egg IVF, communication

Fertility patients seek assisted reproductive technologies (ART) abroad for a variety of reasons. While restrictive regulation in the home country may be the most powerful factor, other potential reasons to seek cross-border care include cost, perceived effectiveness, accessibility, and availability of donor gametes from a variety of ethnic groups (1). Crossing national borders to receive ART poses special challenges for the continuity, quality, and ethics of care. For infertility clinicians on both sides of this process, the migration of patients creates a shared responsibility, often without clear lines of communication. Procedures for quality assurance, communication, and shared management vary between countries and are developed on a case-by-case basis between international infertility providers.

In March 2004, the Canadian federal bill C-13, "Assisted Human Reproduction (AHR) Act," became law. The act has three main aims: to prohibit unacceptable practices, such as human cloning, to ensure health and safety for Canadians taking part in ART, and to control research in ART. Prohibited practices, including reimbursement for egg donation and surrogacy, are now the main impetus for cross-border care. The purpose of the present study was to investigate the extent of cross-border ART services involving Canadian and American infertility clinics and current practices of care collaboration and communication between patients and clinics in Canada and abroad. The study was designed to inform the development of communication and management tools with the aim of improving the quality care for fertility patients who cross borders. These "prompters" will be published elsewhere. The study's objectives were:

1) To identify the scope of cross-border services, defining what services are sought in Canada and the U.S., and where patients come from and go to for ART;
2) To estimate the volume of cross-border fertility services in Canada and the U.S.; and
3) To evaluate the three-way communication between patients and their two service providers.

MATERIALS AND METHODS

The study protocol and surveys were evaluated and approved by the Hamilton Health Sciences Research and Ethics Committee. The U.S. survey was also reviewed and approved by the Research Committee of the Society for Assisted Reproductive Technology (SART), a subsociety of the American Society for Reproductive

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TABLE 1

Canadian clinic responses to the question, "How many patients per year does your clinic send out of country for ART services?"

	To U.S.	To Latin America	To elsewhere[a]	To Europe	To India/Asia
Standard IVF	25	5	30	1	4
Anonymous donor–egg IVF	277	54	29	1	2
Known donor–egg IVF	2	0	0	0	2
Gestational carrier	6	0	7	0	0
True surrogacy	5	0	0	0	0
Donor insemination	2	0	0	0	0
Other	0	0	0	0	0

Note: ART = assisted reproductive technologies; IVF = in vitro fertilization.

[a] Destinations listed as "elsewhere" include Argentina, Australia, Cypress, Czech Republic, Egypt, Ethiopia, Greece, Italy, Mexico, Russia, Spain, and Ukraine.

Hughes. North American cross-border ART survey. Fertil Steril 2010.

Medicine (ASRM). The chosen unit of observation for this survey was the "fertility clinic" rather than the individual clinician, with the aim of obtaining a representative and accurate summary of activity. Clinics in Canada were identified via the Canadian Fertility and Andrology Society's (CFAS) IVF Directors' Special Interest Group and the contact list of Assisted Human Reproduction Canada. Eight Canadian "satellite physicians" on this list were also contacted, because they may send patients abroad directly, without referring them first to the hub IVF center.

The U.S. portion of this survey was directed first through two members of the ASRM Executive Committee, then SART. The SART Research Committee reviewed the survey and made several helpful suggestions to improve its quality. Once approved, the survey was disseminated via the SART e-mail contact list to its 392 member clinics.

The questions included in the survey were specifically tailored to the objectives set. Throughout the drafting process, input was sought from clinicians and nurses in the field. Once finalized, each survey was piloted with three physicians and two nurses to estimate the time necessary for completion, to assess the level of comfort and satisfaction with format and content, and to ensure overall practicality.

For Canadian providers, numbered hard-copy surveys were used, allowing for focused follow-up of nonresponders. The first mail-out occurred on October 1, 2008, followed by a repeat batch for nonresponders 2 weeks later. A third contact was made, this time in person, at the CFAS annual meeting, November 23–26.

A broadcast e-mail of an online survey (Survey Monkey) was used for U.S. clinics. This was administered by the SART secretariat, in early October. Seventy responses quickly followed. SART also allowed a second e-mail, resulting in a further 55 responses.

RESULTS

Canadian Survey

Twenty-eight responses were received from 34 clinics/providers (82%). Fifty percent of these were received from the province of Ontario. The proportion of surveys completed by physicians (rather than nurses or administrators) was 71% for Canada and 59% for the U.S. The total number of reported Canadian IVF cycles was 6,927, approximately 75% of Canada's IVF volume (77% of the 9,019 stimulated cycles reported in the most recent Canadian ART Registry publication of 2006 (2).

The numbers of patients leaving Canada for ART are summarized in Table 1. The majority of patients sought anonymous donor–egg IVF: 363 out of 452 (80%). A relatively higher proportion of patients leaving for this treatment originated from the province of British Columbia (42%), and a lower proportion from Quebec (8%). For this question, 59% of responses were "estimates" and 41% were "formal data." Canadian clinics were also asked: "For how many women does your clinic provide satellite monitoring for their IVF treatment out-of-country [indicate numbers]?" A total of 346 cycles were reported as receiving some prior monitoring in Canada before leaving for U.S. clinics, 32 for women traveling to Mexico, and 53 for those going elsewhere.

The largest demand for ART care by patients entering Canada was for IVF: 106 out of 146 (73%). This represents only 1.5% of Canada's IVF activity. Fifty-four percent of these patients came from the U.S. For this question, 35% of clinic responses were estimates and 65% were formal data. The remaining women entered Canada for donor insemination or known-donor IVF.

Canadian clinicians were asked how they advise patients regarding choice of destination clinic. Fifty-two percent always recommend a destination country, but only 21% always recommend a specific provider. When clinicians were asked, "What is the importance of the following factors in your recommendation to patients regarding out-of-country providers?," the following factors were considered to be "very important" by the 28 respondents: confidence in effectiveness (88%), confidence in safety (80%), past experience of patients receiving care at the destination clinic (64%), strong regulatory control (40%), and language (40%). The key factors perceived by care givers in determining patients' choice of destination clinic were also their confidence in effectiveness (88%) and safety (80%).

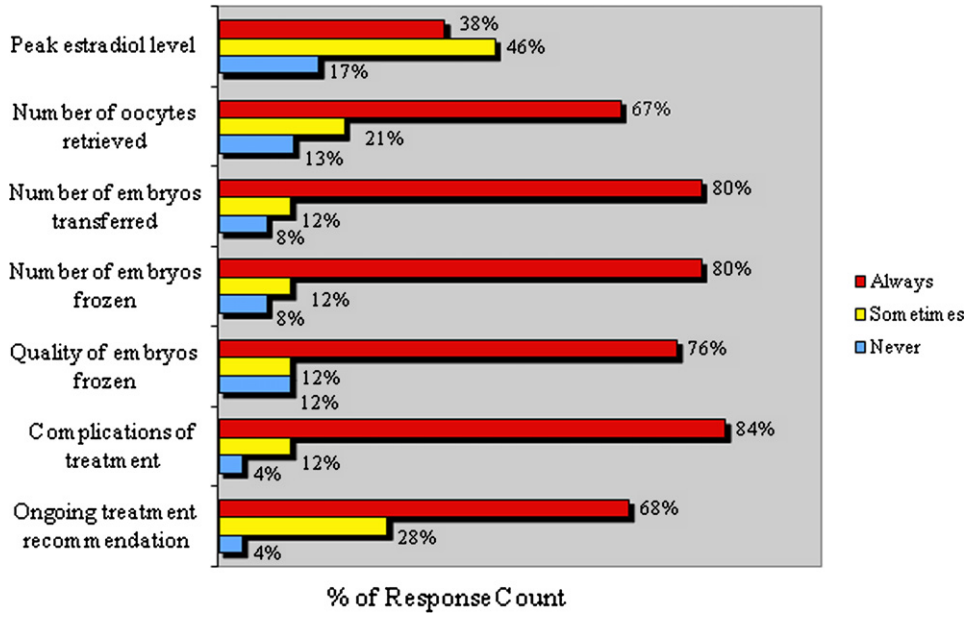
When asked about information that they send with patients traveling abroad, only 29% of respondents feel that a referral letter was always necessary. Eighty-eight percent always provide information requested by receiving clinic. Regarding information coming back with returning patients, receiving clinics are most interested in complications of treatment, number of embryos transfered, and, somewhat less so, ongoing treatment recommendation (Fig. 1).

U.S. Survey

A total of 125 responses were received from the 392 registered SART clinics (32%). Fifty-five percent of responding clinics were from the southern and western U.S., and 45% were from the Midwest and Northeast. Although only 18% of the responses came from clinics in the Northeast, those clinics were responsible for 37% of the total IVF volume. Respondents reported providing a total

FIGURE 1

Information that Canadian clinicians would like to receive with returning patients.



Hughes. North American cross-border ART survey. Fertil Steril 2010.

of 35,387 stimulated IVF cycles per year, representing 41% of the total 85,326 SART-reported stimulated cycles for 2006.

Responses to the question, "How many patients per year does your clinic receive from outside of the U.S. for the following ART services?" are summarized in Table 2. A total of 1,399 women entered the U.S. to receive various types of IVF, representing 4.0% of the total number of cycles provided by respondent clinics. A significant number of patients come into the U.S. to receive standard IVF (927 out of 1,809, 51% of all incoming patients). The largest national sources are Europe (25%) and Latin America (39%). Interestingly, responding U.S. clinics reported only 83 women coming to them for cycles of anonymous donor–egg IVF from Canada, although Canadian clinics reported sending 261 women for cycles of this treatment. This discrepancy may reflect the overall response rate to the survey.

The majority of women entering the U.S. for anonymous donor–oocyte treatment come from Europe (45%) and Latin America (22%). For this question, 45% of clinic responses were estimates and 55% of responses were formal data. Data for patients leaving the U.S. to receive ART are summarized in Table 3. The largest proportion seeking IVF (54 out of 156, 41%) or donor-egg IVF (13 out of 25, 52%), travel to India/Asia. For this question, 54% of clinic responses were estimates and 46% formal data.

In answer to the question, "How important do you think the following factors are in a non-U.S. patient's decision to come for care?," the following were considered to be "very important": confidence in treatment effectiveness (64%), safety (55%), and information from former patients (56%). When asked, "What information would you like to receive from the referring clinic pertaining to the patients you see from outside the U.S.?," 84% of U.S. clinicians

TABLE 2

U.S. clinic responses to the question, "How many patients per year does your clinic receive from outside of the U.S. for the following ART services?"

	From Canada	From Europe	From India/Asia	From Latin America	From Australia/New Zealand
Standard IVF	115	235	190	363	24
Anonymous donor–egg IVF	83	197	30	97	28
Known donor–egg IVF	18	5	4	8	2
Gestational carrier	13	96	12	26	11
True surrogacy	2	0	0	0	0
Donor insemination	88	44	3	73	7
Other	13	5	7	14	4

Note: ART = assisted reproductive technologies; IVF = in vitro fertilization.

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TABLE 3

Responses from U.S. clinics to the question, "How many of your clinic patients leave the country per year for the following ART services?"

	To Canada	To Europe	To India/Asia	To Latin America	To Australia/New Zealand
Standard IVF	13	37	64	27	15
Anonymous donor–egg IVF	4	5	13	0	3
Known donor–egg IVF	0	0	1	0	1
Gestational carrier	0	4	7	0	0
True surrogacy	1	1	1	0	0
Donor insemination	0	1	0	0	6
Other	0	0	0	0	13

Note: ART = assisted reproductive technologies; IVF = in vitro fertilization.

Hughes. North American cross-border ART survey. Fertil Steril 2010.

responded that track sheets from previous cycles should always be sent, whereas only 45% of Canadian clinics stated that they always provide these. Copies of recent laboratory results and the complete medical record were also given high rankings (85% and 67% of respondents stated that they would always wish to receive these, respectively). When out-of-country patients return home from the U.S., good concurrence was seen between Canadian and U.S. clinicians regarding importance of information to be transmitted. Complications and an ongoing treatment plan were ranked as most important.

DISCUSSION

Cross-border ART is an increasingly common and concerning practice. As the number of care givers around the globe has risen, many countries have defined legal and limits for domestic practice (1, 3–5). Restrictions or prohibitions of donor gamete use, gestational carriers, and even the number of oocytes that may be inseminated have pressured patients to seek reproductive care outside their borders (3). For example, Swedish law now dictates that sperm donors are identifiable to offspring. This has led to a shortage of potential donors in Sweden and a resultant annual migration of approximately 250 sperm recipients to Denmark, where anonymous sperm donation is still permitted (6). This type of movement across jurisdictions amplifies the potential for harm to the recipients of care, as well as to their gamete donors and gestational carriers.

Surprisingly little information is available on patient movement in North America. The current survey of fertility clinics in Canada and the U.S. provides at least some information about the scale and scope of cross-border care at national and international levels. The key findings of the survey were that ~80% of women leaving Canada for ART do so in search of anonymous-donor eggs. The proportion of women leaving for IVF treatments, including those requiring a third party, represents approximately 6% of the Canadian IVF volume (445 out of 6,927 annually). Many women receive some cycle monitoring before leaving Canada for oocyte retrieval or embryo transfer in the U.S. or elsewhere. The exact nature of this "satellite monitoring" was not further elucidated through the survey and deserves further attention. A better understanding of the "shared care" some women already receive may help to improve communication between other U.S. and Canadian clinics. Women entering the U.S. seeking IVF use donor eggs in only 34% of cases (472 out of 1,399). Four percent of the total U.S. IVF activity involves patients from other countries. Significantly fewer U.S. women travel abroad for ART, but those who do most commonly seek standard or anonymous donor–egg IVF in India and Asia. Confidence in effectiveness and safety, as well as the experience of earlier patients, are key elements in patients' choices of destination.

The major limitation to the validity of these findings, as with all surveys, is the potential for important differences between responding and nonresponding providers. The relatively high Canadian survey response rate (82%) makes this less of a concern than for the U.S. data (32% response rate). Another limitation is that the survey asked for estimates of volume where recorded data were not available. In addition, clinicians' opinions were sought, e.g., regarding patients' choice of destination, without establishing facts directly from those patients. A more in-depth qualitative research approach with individual patient interviews would be required to more accurately determine such motives. The results and conclusions of this survey should be taken with those caveats in mind. However, it is hoped that this report, and those accompanying it, will foster interest and debate in this area, and perhaps lead to a more formal data collection process. Defining and exploring the country of origin in the annual U.S. data collection process would provide valuable information on the current scale and future trajectory of cross-border ART on this continent.

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REFERENCES

1. Pennings G, de Wert G, Shenfield F, Cohen J, Tarlatzis B, Devroey P. ESHRE Task Force on Ethics and Law 15: cross-border reproductive care. Hum Reprod 2008;23:2182–4.
2. Gunby J, Bissonnette F, Librach C, Cowan L. Assisted reproductive technologies (ART) in Canada: 2006 results from the Canadian ART Register. Fertil Steril 2010;93:2189–201.
3. Inhorn MC, Patrizio P. Rethinking reproductive "tourism" as reproductive "exile". Fertil Steril 2009;92:904–6.
4. Pennings G, de Wert G, Shenfield F, Cohen J, Tarlatzis B, Devroey P. ESHRE Task Force on Ethics and Law 14: equity of access to assisted reproductive technology. Hum Reprod 2008;23:772–4.
5. Boggio A. Italy enacts new law on medically assisted reproduction. Hum Reprod 2005;20:1153–7.
6. Ekerhovd E, Faurskov A, Werner C. Swedish sperm donors are driven by altruism, but shortage of sperm donors leads to reproductive travelling. Ups J Med Sci 2008;113:305–13.