



**University of
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Department of Social and Cultural Anthropology

Social Science Report

Egg Donation and IVF with Donated Eggs

Lessons to be Learned from Other Countries

On behalf of

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Table of Contents

Introduction	4
Research methods	6
A. Overview of different regulations for fertility treatments with donated eggs	11
A.1 Factors describing different egg donation regulations	11
A.1.1 Legal regulations' situations	11
A.1.2 Access to IVF with donated eggs	13
A.1.3 Indications for IVF with donated eggs	15
A.1.4 Coverage of IVF with donated eggs	17
A.1.5 Preconditions for donating eggs	19
A.1.6 Donor's recruitment and types of donation	21
A.1.7 Donor's financial compensation and incentives	24
A.1.8 Advertisement for egg donation	27
A.1.9 Oocyte distribution, storage, and management	29
A.1.10 Modes of confidentiality and anonymity	31
A.1.11 Family issues	34
A.1.12 Informed consent and counseling	35
A.1.13 Impact of new technologies for oocyte cryopreservation	37
A.2 Indicators for the regulations' outcomes	41
A.2.1 Types of registering	41
A.2.2 Clinics number / number of treatment cycles	42
A.2.3 Treatment cycles per million (CPM) inhabitants and women of reproductive age	47
A.2.4 Waiting lists for treatment with donated eggs	50
A.2.5 Cross border reproductive care	50
A.2.6 Increase in the age of motherhood	53
A.3 Characterization of countries' profiles	55
A.3.1 Belgium: individual autonomy and contractual processes in the making of parents	55
A.3.2 Finland: equality of treatment and donor's rights	55
A.3.3 France: the limits of altruism	56
A.3.4 Spain: a platform for egg donation "tourism"	56
A.3.5 United Kingdom: a pioneer country where the public has its say	57
A.3.6 USA: privacy, reproductive liberty, and ability to pay	57
B. Challenges in relation to donating and using human eggs	58
B.1 Lacking donors, lacking eggs	58
B.1.1 Oocytes as scarce resource	58
B.1.2 Varying the conditions of donation	59

B.1.3 Varying the modes of recruitment	64
B.1.4 Varying oocytes sources	66
B.2 Accessing IVF with donated eggs: who should decide whose rights?	69
B.2.1 Reproductive rights	70
B.2.2 Protecting which family ?	71
B.2.3 Questioning age limits	72
Conclusion	77
Bibliography	79
Annex 1: Glossary	94
Annex 2: List of acronyms	98

Introduction

Point of departure

In Switzerland, the Reproductive Medicine Act (RMA¹ SR 810.11) which entered into force in 2001, prohibits *egg donation*² and reproductive treatments with donated eggs. However, a parliamentary motion was submitted to the National Council in December 2012 (Curia Vista Initiative parlementaire 12.487) demanding that the existing ban be lifted. By 2011, the Swiss Society for Reproductive Medicine had already published an open letter addressed to the Swiss Parliament (De Candolle and De Geyter 2011) requesting, among other things, that egg donation be allowed. In January 2014, the preparatory commission of the large chamber of Swiss Parliament accepted the motion and in February 2014, the preparatory commission of the small chamber accepted the motion as well. Both commissions agree with the proposition of the motion, according to which it is now up to a working group of Parliament to elaborate a draft for the regulation of egg donation. The content and the progress of the parliamentary process is detailed step by step on the following web-page: http://www.parlament.ch/f/suche/Pages/geschaefte.aspx?gesch_id=20120487.

While prohibited in Switzerland, egg donation is a practice socially accepted and commonly performed in many other countries. In Switzerland, the ban on the procedure is justified by the will to avoid a separation in motherhood, between a woman who contributes genetically to the conception of the child, and a woman who carries the pregnancy and gives birth to the child, according to the roman principle that "*mater semper certa est*" (Manai 2008). Unlike egg donation, sperm donation is allowed. This difference raises an issue of equality between men and women, who do not have access to the same reproductive options in the Swiss context (De Candolle and De Geyter 2011). The prohibition also has an unwanted consequence: an increase in the number of women who seek treatment beyond the national borders in countries where egg

donation is allowed. The phenomenon, commonly known under the appellation of "reproductive tourism," raises concern among others about access, commercialization, and traceability. The fact that the treatment demand is answered by "circumventing" (Bergman 2011) the law, is also revealing a tension between individual reproductive rights and the values at the core of the national regulation. For these reasons, the prohibition of egg donation becomes more and more problematic and voices are being raised in favor of its authorization.

In anticipation of the elaboration of a Swiss regulation on egg donation, it is useful and relevant to look at the experiences of other countries regulating the procedure. What are the challenges they have met and still meet? What kind of answer did they elaborate? What aspect of the regulation seems to work well and what does not? What are the challenges raised by regulations on egg donation? These questions were formulated at the beginning of the project, with the underlying goal of finding what could be learned from other countries in order to help Switzerland to elaborate new regulations on egg donation. To answer these questions this report describes the experiences of a selection of countries with regulated egg donation, concentrating on the choices they made when establishing and revising their regulations and on what has resulted from these different policies, allowing so to identify and highlight their various stakes.

More basically, "what entails egg donation and why should we care?" is the underlying question which this report tries to answer. By examining the various aspects of regulations on egg donation and of the debates this procedure gives rise to, the report will highlight the complex issues countries have to face when regulating egg donation. While there is no easy solution and gaps between some sensibilities and perspectives may always remain, this report also brings to the fore the creativity and the variability of each set of egg donation regulations. The challenge of creating a new set of regulations on egg donation provides an opportunity for thinking anew about the assumptions that inform the RMA and this journey through other countries' regulations enables us to

¹ All acronyms used are spelled out in Annex 2

² The words in italics refer to the glossary (Annex 1).

imagine different futures for the field of reproductive medicine in Switzerland.

Description of egg donation, IVF with donated eggs, and egg cryopreservation

Before going further, a short description of the procedure of egg donation, and of what it entails, is needed. Within all existing noncoital techniques of reproduction, *insemination with donated sperm* is the oldest (Meirow and Schenker 1997). The first artificial insemination medically performed is reported in the medical literature at the end of the 19th century (Englert et al. 2004). It remained a rather clandestine activity during the first half of the twentieth century (Englert et al. 2004) and has become a main therapeutic option for male *infertility* at the end of the 1960s (Meirow and Schenker 1997). On the contrary *IVF with donated eggs* is much more recent. Relying on *in vitro fertilization* technology or *IVF*, egg donation implies hormonal and technical procedures enabling *oocytes* to be handled outside of the body. The first *live birth* of a child conceived with donated eggs was reported in Australia in 1983 (Trouson et al. 1983; Lutjen et al. 1984) and since then, the procedure has spread in many parts of the world, gaining progressively in popularity and legitimacy.

Schematically, reproductive treatment with donated eggs entails the donor woman's monitored ovarian hormonal stimulation, the retrieval of the donor's *oocytes* under sedation or anesthesia, and the *oocytes' fertilization* and development of the *embryos in vitro*. In parallel, the *recipient* woman undergoes an hormonal preparation in order for her uterus to be ready for the implantation of the embryos. Finally, embryos are implanted in the recipient's uterus to enable pregnancy to be established.

First intended for young women suffering from *primary or secondary ovarian failure or dysfunction*, the success of IVF with donated eggs for *age-related infertility* by women in their forties and fifties contributed widely to the rapid increase in the use of the treatment (Sauer and Kavac 2006). While the use of IVF using a woman's own eggs has been increasingly accepted and routinized since the birth of the first test-tube baby in 1978 in England, the use of IVF with

donated eggs, by women with *peri-menopausal* decrease of fertility and especially *post-menopausal* women, is still controversial in most western countries for both ethical and medical reasons (Sauer and Kavac 2006; Campbell 2011). Within debates on egg donation several other issues are also raised, such as the *commodification* of body parts, *cross border reproductive care* (CBRC) (Shenfield et al. 2010) – also commonly called “reproductive tourism” – donor anonymity, and motherhood. As *oocytes* are also being used for biomedical research, the issue of the financial compensation of donors has gained in importance (Robertson 2006; Isasi and Knoppers 2007; Mertes and Pennings 2007).

As eggs could not be very successfully frozen until recent developments in *egg cryopreservation*, fertility treatments with egg donation have required demanding *synchronization* strategies between the donor and the recipient to be performed (Cobo et al. 2011). However, in recent years, groundbreaking developments in *cryostorage* techniques – especially *vitrification* – have allowed the *oocytes* to be cryopreserved in an effective way and to be used in IVF treatment after thawing (Mertes et al. 2012). Drawing on recent statistics and scientific studies showing that success rates with vitrified *oocytes* are comparable to those with fresh eggs (Cobo et al. 2010; Rienzi et al. 2010) and that the procedure is “efficient, reliable, safe, and consistent” (Cobo 2011: 344), reproductive medicine professional associations consider that “this technique should no longer be considered experimental” (ESHRE Task Force on Ethics and Law 2012; ASRM and SART Practice Committees 2013a). In making use of *oocytes* independent from the time and place of their retrieval, the new cryopreservation technology opens up many new prospects, especially the possibility of creating “egg banks” facilitating egg donation procedure (Cobo et al. 2011) and of preserving fertility such as with the so-called “*social egg freezing*”, where women have their own *oocytes* stored for later use for themselves (ESHRE Task Force on Ethics and Law 2012; Cobo et al. 2013).

Research methods

Research objectives and questions

The point of departure for this report is an initial concern for presenting and analyzing data useful for the elaboration of a regulation on egg donation in Switzerland. This means that it is an applied research, characterized by “its requirements to meet specific information needs and its potential for actionable outcomes” (Ritchie and Spencer 2002: 306). In applied research, four kinds of questions can be asked: 1) contextual, aiming to identify the form and nature of what exists; 2) diagnostic, aiming to examine the reasons for or causes of what exists; 3) evaluative, aiming to appraise the effectiveness of what exists; 4) strategic, aiming to identify new theories, policies, plans, or actions (Ritchie and Spencer 2002). In this report the questions asked fall under the first category. The goal is to provide a detailed description of the phenomenon in question – namely regulations on egg donation – by exploring its multiple facets in order to provide a better understanding and greater illumination of the multiple aspects involved in the making of a regulatory framework for egg donation.

The **main question** of this report is: How is egg donation regulated in other countries and what are the issues raised by these regulations?

Secondary questions are the following:

- What are the factors taken into account in each regulation?
- What is the outcome of the choices made in each regulation?
- What are the main challenges faced by countries regulating egg donation?
- What kind of answers and strategies are brought to the identified challenges and what are their various aspects?
- What are the various logics underlying these challenges and at stake in related debates?

The **main objective** of this report is to describe in detail the experiences of a selection of countries with regulated egg donation, concentrating on the choices they made when establishing and revising their regulations and on what has resulted from these

different policies, allowing us to identify and highlight their various – social, legal, ethical, medical – stakes.

The **secondary objectives** are:

- To identify and describe the factors taken into account in each regulation and relevant to egg donation practices
- To identify and describe indicators in order to put into perspective the regulations in relation to existing practices
- To characterize each country’s profile
- To identify and describe two main issues met transversally by the countries and relevant for future Swiss regulations on egg donation
- To present the various aspects of these debates, and highlight them from a social science perspective by identifying the logics underlying them

Delimitation of the object of research

To answer the questions and objectives presented above, six countries were chosen, namely Belgium, Finland, France, Spain, United Kingdom, and the United States of America. These countries were chosen because of the duration of their experience, the variability of their regulations, as well as for the large body of published literature on them. European countries were preferred because of a common context with Switzerland. The choice to include the USA was based on offering contrast. In fact, European countries in general are characterized by a high level of regulation, which in turn can be more or less liberal or restrictive, unlike the USA, known rather for their absence of regulation at a federal level, and their market-driven approach to reproductive medicine.

No country has a specific regulation only for egg donation and reproductive treatments using donated eggs. That means that the examination of the various regulations takes into account only the aspects relevant to egg donation. While there are many other controversial *assisted reproductive technologies* (hereinafter ARTs), this report does not present aspects related to *surrogacy* and *embryo donation* because they raise other kinds of medical and ethical issues. However, as the vitrification technique allowing for the cryopreservation of eggs is currently so strongly related to the politics of egg donation, this report

explores also whether and how the selected countries integrate it into existing policies, even though data is still scarce because of the novelty of the technique.

Theoretical background

While this report is mainly descriptive, it is nevertheless important to situate the disciplinary perspective it is anchored in. Indeed, even in inductive research methods, “theories of the researcher provide sensitivity and focus which aid the interpretation of data collected during the research process” (Goulding 1999: 8). Social studies on ARTs represent an interdisciplinary field of research where broadly, sociologists, anthropologists, and psychologists, explore the social dimension of these technologies. They use different methods and draw on different kinds of literature, but all tend to grasp the impact of ARTs on social norms and categories, and on the lives and experiences of people, from lay people not directly concerned by ARTs, to donors, patients, doctors, scientists, and donor-conceived children. While drawing on literature in the broad field of social studies on ARTs, the theoretical framework of the report is situated in a more specific subfield at the crossroads of social and cultural anthropology, gender studies and Science and Technology Studies (STS). In anthropology, ARTs have been mainly analyzed in regard to kinship categories and identities, and combined with gender studies, which question the construction of masculinity and femininity. The field of STS exploring the production and circulation of scientific knowledge, and the relations between science and society, has been crucial to the field, for example by drawing attention to the problematic notion of “nature” and to the constructed and material dimension of scientific facts.

Social science studies define ARTs as “socio-technical products which are shaped by human and non-human factors, including the technical features of the ARTs themselves, as well as the economic, political, cultural, and moral environs in which they unfold” (Inhorn and Birenbaum-Carmeli 2008: 178). They focus attention on a two-way movement at the core of the production and circulation of these technologies. On the one side, ARTs are shaped by many social factors, such as those mentioned above. While on the other, they challenge

and have the potential to transform existing norms and social categories. In short, society impacts the development and use of ARTs, as much as these technologies change society. It is important to keep in mind this two-way movement which contributes to the complexity of egg donation practices and regulations, but also allows us to understand how ARTs and society evolve together, and transform each other.

By enabling human intervention at the core of procreation and consequently the creation of new human beings, families, and citizens, ARTs open up new choices, associated with utopian and dystopian vision of the future embedded in a rhetoric of hope and fear (Mulkay 1993; Bloomfield and Vurdubakis 1995). This means that since the birth of the first test-tube baby in 1978 in England, ARTs have raised many debates and been associated with the hope of alleviating the sufferings of involuntarily childless people, as well as with the fear of going too far and of troubling too many aspects essential to the workings of society. They have become more and more accepted as normal procedures, but at the same time have developed and expanded in a platform associated with genetics and *stem cell* research (Franklin 2013), raising as a result new challenges and displacing the sites of debate and controversy.

Their potential to transform ideas about “nature” and the relationships between human beings (Strathern 1992) makes them a “key symbol of our times representing the growing prominence of biotechnologies in the configurations of individual, familial and collective identities” (Inhorn and Birenbaum-Carmeli 2008: 186). This potential constitutes one important reason why the development of ARTs is concomitant with the creation of regulations to frame them in many countries. Regulations represent a site where it is possible “to care” about this potential, in order to promote some values or principles considered as fundamental in a given society, but also sometimes to prevent the application of some techniques considered to be morally unacceptable (Pennings 2009). At stake, the creation of new futures for individual, familial, and collective identities, whose definition is and will probably

remain a site of debate, which is part of our modern democracies.

Analytical method and research process

This report consists in a systematic review of the literature published on the topic of egg donation, that means on secondary sources. To deal with the collection of data and with the important amount of literature possibly relevant, as well as to organize it in meaningful categories, method is crucial.

This report presents the result of an explorative and qualitative content analysis. This method of analysis is used for the study of the informational content of written documents. It aims “to attain a condensed and broad description of the phenomenon and the outcome of the analysis is concepts or categories describing the phenomenon” (Elo and Kyngäs 2008). In the context of the report, the term “category” is preferred to “concept”, because the goal is not to formulate a new theory, but to organize the collected data in meaningful unit of analysis, or categories. While this method can be applied to any written documents, including transcription of interviews, it is limited here to published literature. It proceeds through the identification in each text of categories that are confirmed in a second step through comparison with other texts. The comparison and contrast between different situations, in this case, countries, is an integral part of the analytical process. As Forman and Damschroder write “content analysis requires both looking at each case (participant, site, etc) as a whole and breaking up and reorganizing the data to examine individual cases systematically, and compare and contrast data across cases” (Forman and Damschroder 2008: 46-47). This double process of exploring a case in depth, and at the same time comparing and contrasting cases, has been at the core of this report, allowing the author to enable the emergence of meaningful categories.

The approach in this report is explorative. But what does that mean concretely? The most convincing approach to explorative research comes from grounded theory, developed initially by the sociologists Glaser and Strauss in the 1960s. This approach aims at elaborating theory inductively based

on empirical data with systematization and rigor. It does not verify a preestablished big theory. Instead it consists of an iterative process shifting constantly between data collection and analysis, and testing continually hypothesis built on prior cases. According to this approach the analysis starts as soon as data are collected and the collection of data is directed by the provisional definition of categories, which is able to designate the characteristics of the situation under study (Laperrière 1982; Corbin and Strauss 1990).

As with a qualitative content analysis, systematic comparison is crucial to the research process. An important difference remains nevertheless. Accomplished, grounded theory is supposed to lead to an interpretative framework of the analyzed data, or to theory. This is not the case in this report, where the explorative approach of grounded theory was used, but not with the goal of elaborating theory, and rather with the goal of providing a detailed description allowing us to account for “complexities” (Clarke 2003) of the studied regulations, by showing its multiple facets. In this sense, it corresponds more to a “conventional content analysis”, which aims at describing a phenomenon and where categories are derived directly from texts during data analysis (Hsieh and Shannon 2005).

The list of factors (A.1) and indicators (A.2) presented in this report was established through the iterative process of shifting between data collection and building categories, first provisional, and then definitive, specific to grounded theory and content analysis approaches. In an early phase of the research, a first list was established based on a first immersion in the data and then through a careful analysis, some elements of the list were removed, transformed, or new elements were added. The challenge was to identify categories broad enough to be meaningful and able to gather aspects found in the different regulations, while also being precise and limited enough, to not become a “catch all” category. For example, in the first phase, the category of “biological and social parenthood” seemed relevant, but in the second phase of the work, it became too specific and was unable to include several aspects found in the data. It was then reformulated in a “family issues” category, which was better able to

include aspects related to the making of family, without being restricted to the question of “biological/social parenthood”. Another category which seemed important at the beginning was “possibilities for choice”. It aimed to describe what was not decided by the regulation and open to the patient’s and donor’s choice. However, through systematic examination of the data, it became clear that this category was not able to account for the elements presented in the regulations, which could all be included in other categories. While interesting, this category opened new questions for the research and was too diffuse to be of use.

The second part of the report (part B) is based on the same methodological and analytical framework. The two main challenges met by the studied countries were identified through the explorative analytical research process. Once these challenges were identified, a systematic review of the literature on these two topics was performed and part B presents the debates found in the literature. Three main themes emerged as central challenges faced by countries regulating egg donation: the question of anonymity and openness in regard to family issues; the fact that eggs are a scarce resource; and the question of access. But the in depth investigation of the very pertinent questions regarding *disclosure* and anonymity between donors, recipients, and future children was not selected for two reasons. The first reason is that these questions are not peculiar to reproductive treatments using donated eggs, but concern also sperm donation. Furthermore, the issue has already been discussed extensively in Switzerland when fertility treatments with donated sperm have been regulated and is not likely to change.

Data collection and description of the data set

Data on an issue of high political relevance and at the frontier of biomedical research and social science is potentially endless. For this report, data collection was ended when saturation was reached. The principle of “data saturation”, developed in grounded theory (Charmaz and Mitchell 2001), means “that no additional data are being found whereby the sociologist can develop properties of the category. As he sees similar instances over and over again, the researcher becomes empirically confident that a

category is saturated” (Glaser and Strauss 1999: 61). It means that data collection was limited to the point when no new data could be found in regard to a specific point or question.

Several kinds of data were collected for this report, covering the whole spectrum from life science, social science and humanities, to actual regulatory documents and its derivatives. Two different categories of documents can be distinguished. The first one includes the documents used to describe and characterize each country’s regulation. These documents are situated at an empirical level and serve to explore the concrete aspects of each regulation and resulting outcomes.

Concretely, this first category of documents includes:

- Regulatory documents such as acts, laws, but also guidelines, or recommendations, available on official websites of the State, medical societies, or health governmental organisms
- Statistics available on official websites
- Booklets intended for patients
- Registers
- Newspapers
- Reports carried out in other countries on behalf of the government
- Reproductive clinics’ websites
- Secondary literature presenting empirical results on actual practices related to egg donation.
- Secondary literature presenting the history of the current regulations
- Secondary literature presenting the issues, outcomes, and debates raised by current regulations

The second category is comprised by documents used to put into perspective and problematize the main issues faced by the countries from a social science perspective. They are situated at a theoretical and analytical level and enable us to identify the various logics at stake in the debates. They include secondary literature in the field of social studies on ARTs which problematize critically issues raised by the development of ARTs and analyze them theoretically. They also include literature on the ethics of egg donation, presenting the debates from an ethical perspective.

The search for scientific literature was performed systematically according to two logics. Firstly, it was performed per country according to a contextual logic. The goal was to collect all the relevant data in regard to a specific country and its regulations. Secondly, data collection was performed transversally according to a thematic logic. For example, the topics of egg freezing, cross border reproductive care, older motherhood, anonymity, and reproductive treatment coverage were particularly searched. As the categories became stronger through the systematic comparison between cases, research became more and more oriented to a specific site, according to the principles of “theoretical sampling” (Corbin and Strauss 1990).

Research portals included Google Scholar, PubMed, ScienceDirect, Elsevier, and Jstor. The journals the most consulted were Reproductive BioMedicine Online; Human Reproduction; and Fertility and Sterility. No limitation in terms of date was entered, but the most recent available literature was systematically taken into account and preferred when possible.

Besides the systematic research of literature on portals, data were also collected by following lines of inquiry according to a snowball principle. It was performed by looking at the bibliography of articles and tracing an author, or a theme, by bouncing from one article to the next. This strategy turned out to be especially useful when a subject was poorly studied or information was hard to find, as well as to understand the connections relevant to a specific aspect under study.

More generally, except for the regulatory documents themselves, secondary literature presenting empirical results, was preferred. However, when information was missing and not found in the literature, research was performed directly on the reproductive clinics’ websites, for example.

Overview of the report

The report is divided into two main parts. The first part (part A) examines the specific configuration of egg donation in the selected countries and the second part (part B) discusses two main challenges other countries meet and from which Switzerland might want to learn.

Part A is divided into three chapters and aims first (A.1) at describing relevant factors determining the profiles of several egg donation regulations; second (A.2.) at identifying indicators that seem helpful to assess and compare the outcome of the studied egg donation regulations; and third (A.3.) at characterizing each country’s profile with regard to egg donation regulation. In order to situate each factor and indicator and to bring to the fore the stakes and debates associated with them, a short thematic introduction drawing on medical and sociological literature is presented. The first part of this report (A) can be read transversally per theme or per country. The first two chapters (A.1 et A.2) privilege a transversal reading through factors and indicators. The third chapter (A.3) privileges a reading per country and is set up as a synthesis of all factors (A.1) and indicators (A.2.) peculiar to each country.

Part B examines two thematically “controversial issues” which proved to be a major challenge for all the egg donation regulations studied for this report. Chapter B.1 presents the first basic challenge that is common to all countries, which concerns the way they deal with the fact that eggs are a “scarce resource”. In this sense, eggs can be compared to organs for transplantation. This chapter examines the kind of solutions different countries have chosen to deal with this constraint and will present an overview of the possible strategies for dealing with this imbalance, focusing on the donor’s side.

The second basic challenge identified is presented in chapter B.2. and relates to the question of access to fertility treatments with donated eggs. Who should benefit from these treatments? On what grounds do countries decide? In order to answer these questions, this chapter examines how access to IVF with donated eggs is regulated and presents the various logics at stake. It shows how the question of access is correlated to the status of infertility as a medical condition and to reproductive rights. These questions are studied by focusing on the recipient’s perspective.

A. Overview of different regulations for fertility treatments with donated eggs

In Western countries, the development of ARTs has raised great hopes – of alleviating the burden of infertility and giving life – as well as mistrust and fear – for going too far and “against nature.” These procedures have raised new ethical concerns along with the development of different types of regulation to frame them. European countries adopted very different approaches to regulate these technologies, a phenomenon defined by Pennings as “legal mosaicism” (Pennings 2009). While most regulations agree on common moral values such as “the protection of human life, the non-commercialization of the human body and reproduction, and responsible parenthood” (Pennings 2009: S15), many disagreements emerge when these principles must be interpreted and applied. Each regulation itself is “rarely a monolithic and coherent set of rules” (Pennings 2009: S16) and is rather the result of multiple – economic, political, religious, ethical, social – influences and negotiations. The following part (A) gives an overview of this legal mosaicism by exploring the regulations for fertility treatments with donated eggs in the selected countries.

A.1 Factors describing different egg donation regulations

A factor is defined as “a circumstance, fact, or influence that contributes to a result or outcome” (Oxford Dictionaries). In the context of this report, this term refers to the various elements taken into account in each regulation and contributing to the working of the system of egg donation. These elements determine the profiles of the egg donation regulations studied herein.

A.1.1 Legal regulations’ situations

Fertility treatments with donated eggs can be regulated through the establishment of binding laws regarding ARTs in particular or all new biomedical treatments in general, but regulation is also possible via specific directives and guidelines issued by governments or medical societies. Their force can be more or less

important, depending on the possible means of pressure (sanctions, e.g.) at individual governments’ disposal. The goal of this section is to introduce the regulation and policy frameworks governing treatment with donated eggs by country. For that purpose, the current regulation in effect and its number of revisions will be briefly described. Guidelines and/or directives will also be mentioned when present, above all for the USA, where there is no federal legal regulation on ARTs, or for the UK, where guidelines published by the HFEA are very important.

Belgium

Since the birth of the first Belgian IVF-conceived baby in 1983, ARTs have not been legally regulated (Schiffino and Varone 2006). Only in 1999, when the College of Physicians in Reproductive Medicine was created with the mission of controlling the quality of services and of registering ART activity, licenses and registers for ARTs activities became mandatory (Schiffino and Varone 2006; Schiffino et al. 2009). In May 2003, the first law on research using embryos (Loi relative à la recherche sur les embryons in vitro, M.B. 28.05.2003) was adopted, and in July 2007 a law on medically assisted procreation and spare embryos and *gametes* entered into force (Loi relative à la procréation médicalement assistée et à la destination des embryons surnuméraires et des gamètes, M.B. 17.07.2007).

Finland

Finland was the last Nordic country to implement a legal regulation on ARTs. Since 1980, several bills were proposed to introduce legislation. For the most part, physicians were opposed to government regulation (Nordic Committee on Bioethics 2006). During that time, reproductive treatments were regulated by general health care legislation and professional ethics codes (Burrell 2012). It took two decades of debate for The Act on Assisted Fertility Treatment (1237/2006) to be entered into force in September 2007. The authority responsible for registering donations of gametes and licensing and controlling reproductive treatments is Valvira, the National Supervisory Authority for Welfare and Health.

France

In France ARTs have been regulated by the Laws on Bioethics since 1994. The principle of their revision is inscribed in the law itself in such a way that it can be updated in accordance with innovations in science and technology. The law has already undergone two revisions, the first one in 2004 (n° 2004-800, 08/06/2004) and the second one more recently in 2011 (n° 2011-814, 07/07/2011). However, the decree that would implement this revision was still lacking at the time of the drafting of this report (Fédération française des CECOS 2013). Despite this fact, since the new law acknowledges the possibility of cryopreserving oocytes, this new medical and technical procedure is already starting to be used in fertility clinics (Boyer et al. 2012; Boyer et al. 2013). Following the possible changes brought by the last revision, especially the possibility of “social egg freezing”, the Comité Consultatif National d’Ethique (CCNE) requested in March 2013 to organize “Etats Généraux” in order to allow a thorough public discussion on the medical and so-called social uses of ARTs (AFP and Bonaventure 2013; Assemblée Nationale 2013; Dupont 2013).

Spain

Spain was the first European country to pass a regulation dedicated only to ARTs. The Spanish legislators wanted mainly to regulate gamete donation, which challenges the traditional family law (Garcia-Ruiz and Guerra-Diaz 2012). The first law (law 35/88) was adopted in 1988 and allowed controlled activity in the field (Veiga 2006). A first revision occurred in 2003 (law 45/2003) addressing especially the problem of surplus embryos and in 2006, the law (14/2006) was revised for the second time, introducing among others new registration requirements (Melo-Martin 2009). The National Committee of Human Assisted Reproduction (CNRHA) was constituted six months after the implementation of the first law. It is responsible for the update of the law and research on ARTs and holds an advisory role within the Health Ministry (Boada et al. 2003).

United Kingdom

After the birth of Louise Brown, first “test-tube baby”, in 1978, a committee chaired by the philosopher Mary

Warnock was created to think about the ethical implications of IVF. The Warnock Report was published in 1984 and its recommendations translated into a law in 1990. The Act 1990 was recently replaced by the Act 2008 to integrate the new EU requirements³. In the meantime, many amendments were implemented: the Human Reproductive Cloning Act 2001; the Human Fertilisation and Embryology Act 2003; in 2004 the amendment on disclosures about donor information; and finally in 2007 an amendment on quality and safety for human applications (Fox 2009). As a consequence of the Warnock Report, the Human Fertilisation and Embryology Authority (HFEA) was established in 1990 together with the HFEAct 1990 and became effective August 1, 1991 (Merricks 2014). This body publishes a code to help centers and clinicians to understand the law. The code presents the regulatory principles about licensed activities along with guiding notes for practitioners of IVF.

The National Institute for Health and Care Excellence (NICE), a non-governmental body sponsored by the Department of Health, publishes clinical guidelines that are not mandatory for *Primary Care Trusts* (PCTs), although the government strongly expects them to be implemented. The first clinical guidelines were published in 2004 (CG11) and was replaced in February 2013 by a new version (CG156). PCTs are public authorities responsible for “planning, securing, funding, and coordinating all of the NHS services in a defined geographical area” (PCT Network Website). They have the power to decide how to allocate NHS resources. It should be noted that a new system entered into force on April 1st 2013 and PCTs were abolished and replaced by Clinical Commissioning Groups (CCGs) and Local Area Teams (LATs)⁴.

³ In 2004, the European Parliament and the Council introduced the Directive 2004/23/EC requiring EU countries to implement new measures and procedures concerning mainly the donation, testing, preservation, and registration of tissues and cells in order to ensure the safety and quality of medically assisted reproduction. Following the launch of this Directive most EU countries took the opportunity to change their regulation.

⁴ Since literature on the new system was not published at the moment of drafting this report, reference will be made to the PCTs system in force before April 2013.

USA

In the USA, ARTs have not been subject to federal regulation and are consequently rather market driven. However, three potential sources of regulations for ART and more specifically treatments with donated eggs can be identified (Terman 2008). Firstly at a federal level, there is the National Organ Transplant Act (NOTA), implemented in 1984, which makes it illegal to buy or sell organs, but does not apply to human gametes (Terman 2008), and the Fertility Clinic Success Rate and Certification Act of 1992. This act mandates fertility clinics to report success rates on an annual basis, but “ [...] does not mandate specific medical practices or place any restrictions on oocyte donation or the compensation of oocyte donors” (Levine 2010: 27). Secondly, at the state level, there are various regulations which focus mainly on issues related to health insurance (Levine 2010). Some states have also instituted laws defining legal parenthood and associated rights and responsibilities (Terman 2008) and the issue of informed consent has been addressed by California and New York through laws defining what an egg donor must be told before the procedure and mandating signed consent agreements (Sargent 2007). In absence of state laws, some important aspects of egg donation and IVF with donated eggs are discussed in courts and cases established as legal precedents (Sargent 2007). Finally, auto-regulation within the scientific community provides the main source of regulation. The *American Society for Reproductive Medicine* (ASRM) and the *Society for Assisted Reproductive Technology* (SART) are the two main professional associations involved in this. They publish mandatory guidelines for affiliated clinics. However several studies show that the level of adherence to these guidelines is low (Abusief et al. 2007; Kramer et al. 2009; Levine 2010; Hawkins 2013; Avraham et al. 2014).

A.1.2 Access to IVF with donated eggs

Ginsburg and Rapp (1995), anthropologists whose works have been fundamental to the field of reproductive studies, propose the concept of “stratified reproduction”, borrowed from Shellee Colen (1995) to “describe the power relations by which some categories of people are empowered to nurture and

reproduce, while others are disempowered” (Ginsburg and Rapp 1995: 3). By taking place at the core of reproduction and making possible the creation of new children, parents, families, and citizens ARTs provide a very good example of stratified reproduction (Inhorn and Birenbaum-Carmeli 2008). Access to ARTs is framed by each national, legal, and political context in many different ways and reflect inequalities based on class for example, but also on family models and values important to each society. Some groups of people are legitimated and empowered to reproduce with the help of ARTs, while others are prevented from doing so. Access can be determined implicitly or explicitly by criteria such as the civil status, the sexual orientation, minimal and maximal age limits, the ability to pay, mental and physical health, life expectancy, and other personal conditions. In this section, access will be examined only as defined in the various legal regulations.

In the context of reproductive medicine in Europe, the distinction between medical indications and so-called social or elective uses of ARTs has been or still is under debate in several countries (for ex. see de La Rochebrochard and Rozée 2010), but an international trend to broaden the use of ARTs in a way not restricted to medical indications – often in order to make the practices more equitable and accessible – can be observed (Burrell 2012). The so-called social or elective uses of ARTs refer to reasons other than the medical ones. For example, persons in same-sex couples or single women who are often not infertile in a medical sense may use ARTs as a means to achieve pregnancy and have their desired baby without a sexual relationship with a man. For example, the technique ROPA (Reception of Oocytes from Partner) has been developed in Spain and allows partners – fertile or infertile – of same-sex couples to become both biological mothers to the resulting child, one giving her eggs, and the other carrying the pregnancy (Marina et al. 2010). In practice, the border between medical indication and so-called social or elective uses is often not easy to establish. For example, the age up to which age-related infertility is understood as a medical indication to ARTs, as opposed to an elective use, is a central question. Or a single or lesbian woman can have fertility problems and thus medical indications

for ARTs, even if in some countries she is prevented from access because of the so-called social or elective dimension of her case. What is at stake is the use of invasive and sometimes risky medical procedures in healthy people, issues of access and equality, as well as the definition of infertility itself.

Two related aspects will be presented further. Firstly, medical indications are part of access, but will be examined in the next section (A.1.3). Secondly, another factor concerns the coverage of the recipient's treatment, the ability to pay and the difference between private sector – where criteria are in general less strict (ESHRE 2008) – and public sector. This will be examined in section A.1.4.

Belgium

In Belgium access to reproductive treatment relies on a principle of strict equality of persons and couples, independent of their intimate life, meaning that single and lesbian women have access to ARTs. However access is restricted in relation to women's age. The law states that oocytes may be retrieved up to 45 years of age and embryos may be implanted until the age of 47. In order to access ARTs a convention must be prepared and signed by the authors of the parental project. This term designates any person – single person or couple – who took the decision of having a child through ARTs with one's own gametes or not. This liberal framework is counterbalanced by the possibility of any clinic or medical staff invoking a conscience clause. If they do so because they find that the case is ethically problematic, they have to justify their decision officially (M.B.17/07/2007, art.5). The conscience clause is a "mechanism to reconcile legislation with ethical pluralism" (Pennings 2007: 21) to prevent the liberal framework of the law from becoming interpreted as an unequivocal right to access by patients. The risk is that it becomes used by physicians in an arbitrary and discriminatory way (Pennings 2007).

Finland

The Finnish law on ARTs rests on a principle of equality between individual persons and couples. Since the Act entered into force, the principle that the child must have a father and a mother to ensure his or her well-being was replaced by the principle that

married couples, or men and women living in a relationship comparable to marriage, single women and lesbian couples, can access ARTs (Act 1237/2006, section 3). However, since surrogacy is prohibited, single men and gay couples cannot access ARTs. According to the law no age limits have to be respected as long as the woman's health is not endangered.

France

In France access to ARTs is limited to living heterosexual couples of reproductive age, medically diagnosed with infertility or at risk of transmitting a serious disease to their offspring. That means that single and lesbian women have no access to fertility treatments with donated eggs. The law does not specify a clear age limit for women, but the social security establishes a clear limit at the 43rd birthday (de La Rochebrochard and Rozée 2010; Rozée 2011). This restriction relies on a strict distinction between medical and social uses of ARTs, implying that ARTs are not considered as a new mode of procreation, but aim at compensating for infertility in a strict medical sense (Leonetti 2011). Consequently, egg donation is considered as a last resort after the failure of other reproductive treatments. Until 2011, the law requested couples to have lived at least two years together (art.33). This requirement was cancelled with the last revision in 2011, still awaiting the implementing decree.

Spain

Since 2005 (Law 13/2005), the rights of same-sex couples are considered as equal to those of heterosexual partners and same-sex couples have the same access to ARTs including IVF with donated eggs (Marina et al. 2010), meaning that any woman over 18 and in full mental capacity can access ARTs independent of her sexual orientation or marital status (Ley 14/2006 art.6.1). In the language of the law, there is no explicit age limit specified; instead the provision of information about late pregnancy risks is required (Ley 14/2006, art.6.2) In practice, access to ARTs is granted up to age 40 in the public sector and up to age 50 in the private sector (Castilla 2009; IGAS 2011⁵).

⁵ Alerted by professionals in the field of reproductive medicine and the Agence de Biomédecine (ABM), the ministry of Health and Sports gave the Inspection Générale des Affaires Sociales (IGAS) the responsibility of carrying out an in-depth study of the situation of egg donation in France.

United Kingdom

According to the Act 2008, all couples and single individuals can access ARTs. The HFE Act 2008 dedicates a section to reproductive treatment with another woman as parent. IVF or donor insemination can both be performed. There is no age limit explicitly specified in the Act, but in practice women should not be older than 48 when placed on waiting lists, and not over 50 when they undergo treatment (University Hospitals Coventry and Warwickshire, NHS trust Website). Besides, the individual Primary Care Trusts (PCTs) of the *National Health System* – replaced in April 2013 by Clinical Commissioning Groups (CCGs) and Local Area Teams (LATs) – have different *eligibility* criteria according to their location and their own local distribution of health resources. For example, they may restrict access according to weight, lifestyle choices, alcohol consumption, or smoke. They may also refuse couples who already have children or require that couples are together for three years. Since this “postcode lottery” is related to the infertility treatment coverage, it will be examined under point A.1.4.

USA

ARTs are mainly regulated through market and there is no legal restriction on access. Additionally, the USA have a long tradition of individual liberty and free enterprise (Robertson 2006) and the rights of privacy and reproductive liberty are protected by the US constitution (Meyer 2009). However, since reproductive treatment is generally not reimbursed and oocytes sold at very high prices (Levine 2010), access depends mainly on the recipient couples’ ability to pay (Thompson 2005).

A.1.3 Indications for IVF with donated eggs

In medicine, “indication” means “a condition which makes a particular treatment or procedure advisable” (Medterms Medical Dictionary). Medical indications include “infertility,” defined by the WHO as “a disease

of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse” (Zegers-Hochschild et al. 2009). They include also the risk of transmitting a serious genetic and/or infectious disease to the resulting progeny.

Historically, the first indication for the use of donated eggs in IVF was ovarian failure or surgically inaccessible ovaries by young women (Sauer and Kavac 2006), as well as total and definitive ovarian failure, such as in *Turner syndrome* or *early menopause* (Le Lannou 2010). As a reproductive technology, IVF with donated eggs does not directly treat or cure infertility, but rather allows the bypass of dysfunctional ovaries by substituting functional oocytes from another woman. The success of this procedure in older women opened an important pathway of understanding reproductive aging. It allowed scientists to discover that eggs age in a way the uterus does not. If hormonally stimulated a woman can still carry a pregnancy beyond menopause. These important findings contributed to the broadening of the indications for egg donation and a remarkable increase in its use (Sauer and Kavac 2006). Aging is a normal process every human being is confronted with, but has a deep impact on female fertility. Female fertility declines significantly with aging, often long before menopause, and age entails the “risk of poor performance at each stage of [IVF] treatment” (Bhattacharya 2013); therefore, age becomes the primary factor explaining the failure of IVF with one’s own eggs, and justifying the search for IVF with donated eggs. After 42, statistically the results with *autologous* IVF are so low that egg donation becomes the only option for inducing a pregnancy (Belaisch-Allart 2010). It must be noted, that the broadening of indications for IVF with donated eggs has increased the demand for eggs while there is already a shortage in donors.

Belgium

Access to ARTs is not limited to medical indications and is based on the elaboration of a “convention” by the authors of the parental project (M.B.17/07/2007, art.7). When necessary, the determination and treatment of the causes of infertility or hypofertility are

This report presents detailed data on France, but also, as a comparison, on other countries, such as Belgium and Spain. This is why the report will be cited for these countries, even if it deals mainly with France.

left to the medical body in accordance to scientific data and rules of the profession (M.B.17/07/2007, art.6). Age-related infertility is not explicitly defined as an indication, but the law states that oocytes may be retrieved up to 45 years old and embryos may be implanted until age 47. Egg donation entailing sex selection or demonstrating any eugenic character are prohibited (M.B.17/07/2007, art.52), but egg donation can be used to avoid the transmission of a serious genetic disease.

Finland

The law regulates “fertility treatments,” defined as “treatment in which a human gamete or an embryo is placed in a woman for the purpose of a pregnancy” (Act 1237/2006, sect.1). Medical indications are not mentioned in the Act. The decision to provide fertility treatment is left to the physician after ensuring that the conditions have been met (Act 1237/2006, sect.11). In section 8, several limits to the provision of fertility treatments are mentioned. They include among others, when “pregnancy would pose a substantial risk to the health of the woman or the child due to the age or health of the woman” (Act 1237/2006, sect.8). According to this logic reproductive aging is understood as a condition legitimizing the need for fertility treatment with donated eggs, as long as it does not endanger the recipient’s or child’s health.

France

IVF with donated eggs is strictly restricted to medical indications. A study of the Groupe d’Etude du Don d’Ovocytes (GEDO) states that in 2002, the indications for 53% of IVF with donated eggs was *premature ovarian failure*, including, 54,3% *idiopathic* early menopause, 18,5% ovarian failure after medical treatment (chemotherapy), 11,7% Turner syndrome, 15,5% primary *amenorrhea*. 31% was needed because of IVF failures, 7% for genetic indications, and finally 10% because of ovarian failure without previous IVF attempt (Letur-Könirsch 2004; Letur-Könirsch et al. 2005). Avoiding the transmission of a serious genetic disease can also be an indication for IVF with donated eggs (Le Lannou et al. 2010). IVF with donated eggs is increasingly considered the first option for poor response to standard IVF treatment, that is to say after several failures with IVF. This contributes to the

increase in the demand for donated eggs, the difficulty being to establish criteria to define “poor response” (Le Lannou 2010). If too high, the risk is excluding women who have no other option, and if too low, the risk is increasing demand too widely, especially considering there are already not enough donors.

Spain

In Spain, the basic principle is that ARTs can be used only when they do not put at risk the physical and psychic health of the woman undergoing treatment (Ley 14/2006, art.3.1). The law does not specify indication for IVF with donated eggs and thus does not differentiate between fertile and infertile women. As a consequence, a specific technique called ROPA for Reception of Oocytes from Partner has been developed, providing a good example of a non-medical indication for reproductive treatment with donated eggs. This technique assists female same-sex couples who both want to be related biologically to the child (Marina et al. 2010). Technically, it is comparable to IVF with donated eggs. One of the partner provides the eggs, which will be fertilized with donor sperm. The other partner receives the embryos and gestates them. If one of the woman has problems with her oocytes, it gives a medical indication for the use of IVF eggs provided by her partner. However, at an ethical level, the question of whether it is acceptable to perform ROPA – an expensive and sometimes risky procedure – when both women are fertile has been raised. One of the medical team performing this technique in Spain responds affirmatively to this question in a published article (Marina et al. 2010) on the principle of equal access and as an acknowledgment of the desire of two women to participate biologically to the creation of a child, and on the basis that they themselves paid for their treatment, which was performed in a private center.

United Kingdom

The HFE Act does not specify medical indication and does not restrict access to reproductive treatment to them. However, NICE guideline (2013) indications for IVF with donated eggs are medical and include premature ovarian failure, *gonadal dysgenesis* including Turner syndrome, bilateral *oophorectomy*, ovarian failure following chemotherapy or radiotherapy, certain cases of IVF treatment failure, and when there

is a high risk of transmitting a genetic disorder to the offspring.

USA

According to the last guidelines of the American Society for Reproductive Medicine (ASRM and SART practice committees 2013b) indications for IVF with donated eggs include women with *hypergonadotrophic hypogonadism*, advanced reproductive age, *diminished ovarian reserve*, known to be affected by or the carrier of a significant genetic disorder, having a poor oocyte and/or embryo quality or multiple previous failed attempts to conceive through ARTs. These indications include age-related infertility as a legitimate indication for IVF with donated eggs. However the ASRM and the American College of Obstetricians and Gynecologists Practice Committees (2008) recommends that women over 45 undergo medical evaluation including cardiovascular testing before undergoing IVF with donated eggs.

A.1.4 Coverage of IVF with donated eggs

Who should pay for ARTs in general and more specifically for IVF with donated eggs? Under what conditions? Which of the possible conditions that call for IVF with donated eggs can be considered like any other diseases? Are they a private or a public matter? These questions raise sensitive and complex issues about reproductive rights and equality in the sense that without coverage only richer people can afford treatment. The special status of what is expected from ARTs – a priceless child – increases the difficulty to settle arguments. The inability to conceive without medical assistance, as well as specific risks associated with the transmission of genetic conditions are not life-threatening diseases, even if parenthood is socially very important at both individual and societal levels. In the context of limited resources fertility treatments coverage is related to the question of whether a community should pay for expensive medical technologies from which benefit only a relatively small number of people, and whose cost-effectiveness is uncertain and difficult to calculate (Neumann 1997; Katz et al. 2002; Devlin and Parkin 2003; Navarro et al. 2008; Mladowsky and Sorenson 2010).

Historically, reasons advanced for not covering ARTs including IVF with donated eggs include the fact that not being able to procreate is a private matter, that ARTs are experimental and have a bad cost-effectiveness ratio, that there are more important uses for society's scarce resources, and the fear for attracting too many people if it is covered (Neumann 1997). On the other side, the reasons advanced for covering ARTs are that not being able to procreate is a disease and hence should be covered by the medical insurance, that the creation of inequality dependent on the ability to pay for expensive procedures creates unfair *two-tier medicine* (Zweiklassenmedizin), that it is contradictory to cover pregnancy, prenatal and postnatal care, but not helping to conceive, and finally that the lack of coverage could lead to the promotion of ARTs only for women who have better chances of success in contradiction with an equality principle (Neumann 1997; Castilla et al. 2009).

There is no international consensus on the way ARTs should be subsidized (Navarro et al. 2008). Models can vary between systems where ARTs are fully covered by public health insurance, systems where ARTs are provided only on a fee-for-service basis (Navarro et al. 2008), and systems where reimbursement is unrestricted with co-payment like in Australia (Connolly et al. 2010). However, internationally the general trend is that ARTs services are less funded by public funding, and more by users themselves than most other health services (Devlin and Parkin 2003). More generally, health insurance coverage of ARTs is usually associated with an increased use of them, but also with lower multiple births rates, which is one of the main source of costs due to pre-natal treatment, pre-term births and related complications (Katz et al. 2002; Garceau et al. 2002; Navarro et al. 2008; Connolly et al. 2010).

One important question regarding the coverage of treatment with donated eggs is related to age. Coverage is often limited to women under 40 on grounds of reduced success rates and increased costs associated with older pregnancy, consequently excluding women most likely to meet fertility problems and to need reproductive treatment (Mladowsky and Sorenson 2010). When reproductive

treatment with donated eggs is allowed, it means that older women have to pay by themselves. Coverage is part of access and a crucial question concerns inequalities produced by its lack. For example, even in countries with generous coverage, people may pay themselves to avoid long waiting lists, or being rejected because of age among others or go abroad to access treatment at their own expense. This section aims at answering which country pays what and whether people pay privately even when reimbursement is implemented.

Belgium

Since 2003, social security covers the totality of reproductive treatment (Schiffino and Varone 2006; Pennings and Devroey 2006). Restrictions concern mainly age – women are reimbursed up to age 42 – and treatment *cycles* are limited to 6 (Schiffino et al. 2009; Brigham Berg et al. 2013). In order to avoid multiple pregnancies, the reimbursement of reproductive treatment is correlated with the number of embryos implanted according to the age of the women and the number of attempts.

Finland

In Finland, Kela, the Social Insurance Institution of Finland, provides a partial reimbursement for Finnish residents. It covers approximatively one fourth of the infertility examinations and IVF/ICSI treatment (Felicita Clinic Website). The main restrictions concern the age of women – over 43 no treatment is covered – and the number of treatment – limited to three. However, according to the clinic's websites (Fertinova and Väestöliitto Fertility Clinics Websites), donor egg treatment is not eligible for the same direct reimbursement scheme and patients must ask for reimbursement after the treatment.

France

In coherence with its legal framework restricting ARTs to strictly defined medical uses, France offers one of the most generous coverage of reproductive treatment performed in public clinics. It relies on a principle of equity, meaning that people should access ARTs independently of their financial income (Reineke 2008; Thépot 2011). Each medical examination and treatment is fully covered (IGAS 2011) up to 4 IVF cycles and age

42. ARTs are mainly performed in public centers. According to the regulation of the European parliament on the coordination of social security systems, social security also partially reimburses egg donation treatments in foreign clinics, on the grounds that it is justified medically (Le Lannou 2010).

Spain

The *Systema Nacional de Salud* covers a maximum of 3 cycles only for medical indications up to age 40 (Brigham Berg et al. 2013), even though in the private sector the age limit to treatment is 50 (Castilla et al. 2009), implying that older women have to pay for their treatment by themselves. While full coverage for ART treatments including IVF with donated eggs is available in the public sector, most egg donation treatments are carried out in the private sector where there is no reimbursement (Castilla et al. 2009), but these treatments in private clinics are mostly sought after by foreign women and couples (Luceno et al. 2010).

United Kingdom

In 2000, NICE was asked to produce clinical guidelines on infertility with the goal of providing patients with fairer and faster access to services. The NICE guidelines published in 2004 recommended that three full cycles of IVF be covered by the National Health System (NHS) for all infertile couples in which the woman is aged 23-39 and who don't have any children living with them. One year later, in April 2005 the secretary of state for health proposed that at least one of the three cycles be offered. But a survey of the UK Department of Health showed that only nine out of 151 PCTs in England actually reimburse these three cycles (Buxton 2008) and a HFEA report (2011a) showed that 4 IVF cycles out of 10 are funded by NHS.

Additionally, according to their budget PCTs adopt their own eligibility criteria for reimbursement. Depending on the location, women over 35 are judged to be too old to access reimbursed treatment, while in other places they are judged as being too young (BBC News 2007). This inequitable coverage and consequently uneven access to ARTs is called "the postcode lottery", meaning that depending on one's own location, the coverage will be different (Horsey

2008; Lewis-Jones 2008; Robert 2008). As mentioned above, it should be noted that the PCT system was abolished and replaced by Clinical Commissioning Groups (CCGs) and Local Area Teams (LATs) in 2013.

The last NICE guidelines (2013) extend the population whose reproductive treatment should be covered by NHS. It recommends that women aged 41- 42 shall be offered one full IVF cycle and women under 40 three cycles. It also correlates the coverage to the number of embryos transferred according to women's age in order to support avoiding multiple births.

USA

There is no public health insurance system in the USA. Some private insurance companies offer fertility coverage but the amount of insurance coverage can vary widely (Jain et al. 2002; Sargent 2007). Fourteen States have laws requiring that health insurance cover infertility diagnosis and treatment (Levine 2010). Regarding specifically IVF with donated eggs, the prices can vary widely, as the eggs of donors with specific characteristics such as high level of education, physical features in line with dominant beauty standards or particular ethnic traits are highly valued and get premiums (Robertson 2006; Levine 2010; Keehn et al. 2012). Thus access to IVF with donated eggs is logically even more dependent on the ability to pay than a classical IVF.

A.1.5 Preconditions for donating eggs

Who can become an oocyte donor? As the procedure is invasive, demanding, and entails the creation of a potential new human being, every regulation of fertility treatments with donated eggs dedicates an important part of its rules to the preconditions for donating eggs. They aim at protecting the donor, as well as ensuring the health of the potential child and the success of the treatment. They concern for example mental and physical health, as well as the quality of oocytes, the goal being to obtain the best oocytes in the least invasive way and with as few side effects possible. As the quality of oocytes decreases with aging, the age of the donor constitutes an important criterion. Another condition some countries address is the requirement – legal in France, but recommended in

other countries – of having already had a child or children. It is based on a cautionary principle aiming at preventing physiological and psychological risks in young women who may be more vulnerable to external pressures and might not appreciate the scope of their decision (Le Lannou 2010; IGAS 2011). It must be noted that while many *screening* measures are taken to ensure the health of the resulting child by screening donors, little is known about long-term effects of donation on the health of donors themselves (ASRM Practice Committee 2008).

Another precondition regulated by countries is whether the donor can be known or related to the recipient. Some countries require anonymity, while some others accept various possibilities. This point will be examined in sections on the recruitment of donors (A.1.6) and on modes of confidentiality and anonymity (A.1.10). This section focuses only on living donors. *Egg retrieval* from fetal and deceased women, as well as the later use of eggs from deceased women will be addressed in sections A.1.6 and A.1.8. From an ethical perspective, the basic requirement is that the donor is fully informed about the procedure and associated risks, and able to give informed consent. This point will be further discussed in section A.1.11.

Belgium

The Law M.B.17/07/2007 on medically assisted reproduction states that donors must submit themselves to all required exams and give all the medical information needed in order to ensure the health of the future child. In practice other conditions are also implemented. On several clinics' websites, it is specified that the donor must not be a minor but not older than 35, except in the case of known donation when the recipient and the donor know each other. In this case the donor can be up to 40, under the condition that the recipient is aware of the age-related decrease in success rates and agrees with it (ULB Erasme; CRG UZ Brussel c). In response to questions asked by a member of parliament, the report of the Conseil Supérieur de la Santé (CSS 2010) details the conditions under which egg donation is and should be performed. It estimates that the donor should not be younger than 21 and not older than 39 and recommends that the recipient should be told when the donor is over 35. It

should be noted that the average age of donors in direct or known donation is 37 (IGAS 2011). This means that when donors are known or related to the recipient, they are usually older than in spontaneous and anonymous donation, but also that if a donor older than 35 and is brought by a recipient couple, she will not be accepted into a regular donation program (CRG UZ Brusell c). While not a legal requirement, some centers require a previous birth, as well as the consent of the partner (CSS 2010). Egg donation can only be performed after a psychologist verifies the motivations of the donor and ascertains that she freely gives her consent (CSS 2010).

Finland

According to the Act, donors must be over 18 and pass a physical examination ensuring that the donation does not threaten their health, and cannot threaten the health of the resulting child through the transmission of a serious genetic disease (Act 1237/2006 sect.13). There is no legally fixed age limit, but on the clinics' websites the upper age limit is set to age 35 or 36 (Fertinova Website; Vaestoliitto Website). Gametes can only be used with the donor's consent and the consent can be withdrawn at any time including with embryos resulting from the donation (Burrell 2012).

France

Until the revision of 2011, still awaiting an implementing decree, donors must have already had at least one child (Cornet 2007). This requirement is unique in Europe. The idea underlying this rule is that only a woman who has already procreated can be able to understand the suffering associated with infertility and can donate for altruistic reasons (Le Lannou 2010; IGAS 2011). It aims also to protect donors from possible future infertility problems with the knowledge that children conceived with their eggs are alive (Sacoun 2010). In contrast, younger women are presumed to be interested mainly in economic compensation and to be more vulnerable to external pressures (Le Lannou 2010). This requirement has changed with the last revision of the Laws on Bioethics, but remains controversial and is not implemented yet. The average age of egg donors is 32 and the age limit is fixed at 37 (IGAS 2011). The donor does not need not be married, but when she is, her husband must sign,

too. This consent is revocable at any moment prior to using oocytes. Concerning safety, since 2004, donors are serologically tested at the time of donation (Cornet 2007).

Spain

According to the law 14/2006, donors must be over age 18, in good psychophysical health and have full mental capacity. They must accept physical and psychological examination in order to ensure that they do not suffer from any genetically heritable disease. Donors can come from foreign countries but they must submit themselves to the same requirements. Donation is only revocable if the eggs are still available and the donor must reimburse the costs incurred by the recipient center during the donation (Ley 14/2006 art.5.2).

Concerning age, the average age of donors is 26. 60 to 80% of the donors have never given birth (IGAS 2011). The law states that they must be at least age 18, but no explicit age limit is fixed. In practice, centers look for younger donors to ensure better success rates. In Ginefiv, the average age is 21-26, in Cefer 29 is the maximum, and in Eugin it is 26-27. On average, donors in Spain are younger, and more likely to be single and childless than in other countries (Garcia-Ruiz and Guerra-Diaz 2012).

United Kingdom

According to the HFEA code of practice on donor recruitment (HFEA Code of Practice 11), donors are selected after a questionnaire and a personal interview on the basis of their age, health and medical history. The goal is to identify persons for whom the treatment could represent a risk such as ovarian hyperstimulation syndrome, or who might represent a risk for others. In particular, donors are screened in order to avoid the risk of transmitting a serious physical or mental disability or any other serious medical condition. Before donating eggs, the donor must say whether or not she wants to be informed of a possible unsuspected genetic condition. The HFEA guideline states that if the donor cannot provide enough information about herself to conclude that there is no significant risk, she should not be accepted.

Regarding age, the decision is left to the centers, which are instructed to refer to relevant professional guidelines. Guidelines say that egg donors should not be 36 or over and must be at least 18. The donor consent can be withdrawn at any moment prior to using eggs. The same requirements apply for *egg sharers*.

USA

According to the last recommendations of the ASRM (ASRM and SART Practice Committees 2013b), donors must undergo a psychological evaluation and counseling. The preferred age of donors is between 21 and 34. If the donor is under 21, she must have a psychological evaluation. If she is over 34, the recipient must be informed of the impact of the donor's age on pregnancy rates. They have to be screened for genetic diseases and sexually transmitted infections. A long list of factors is established and donors concerned by one of these factors should not be accepted. The list includes, among other factors, previous drug-users, women who have had sex with men who have sex with men (MSM), and women with hemophilia who have received clotting factors in the preceding five years. A complete physical examination is required every six months during the time of being a donor.

A.1.6 Donor's recruitment and types of donation

The egg donation international situation is characterized by an increasing demand for oocytes for the needs of reproductive treatment, as well as for biomedical research (Mertes and Pennings 2007; Waldby 2008). At the same time, in many countries, the supply in oocytes does not meet the demand. To address this imbalance efforts towards recruiting donors and diversifying sources of donation are made. Various possibilities exist. Englert et al. (2004) describe schematically four main types of oocyte donors: 1) occasional donors who do not have ties to the recipient and donate without payment; 2) patients undergoing IVF treatment and agreeing to share oocytes; 3) related donors known and recruited by the recipient couple in their circle of friends and relatives; 4) professional donors who give oocytes in return for payment. Donors can be recruited by the recipient couples themselves, by the clinics, or by agencies. It has to be

noted that "oocyte donor recruitment is a critical, yet costly, and labor-intensive part of assisted reproductive technology programs" (Sachs et al. 2010: 311; see also Gorrill 2001). Modes of recruitment are closely associated with various types of possible donation, which will be described in relation to each other in this section.

Belgium

In Belgium, there is a persistent lack of donors and consequently a marked shortage in donated eggs for fertility treatments (CSS 2010). To diversify the scope of prospective donors, various types of donation are proposed. The first type is volunteer egg donation, which can be a known or named donation – the authors of the parental project choose and know the donor – or which can be an anonymous donation – the donor gives her eggs to the gamete bank on a spontaneous basis (CRG UZ Brussel Website c; CSS 2010). According to the UZ Brussel website the latter are very hard to find. In the case of anonymous donation, it can also be an anonymous donation with a presented donor (UZ Brusell Website c; CSS 2010). That means that the intended parents bring a related donor, the donor gives her eggs to the bank, and the couple receives eggs from another donor. This option is also called permuted donation. It has been performed in the fertility clinic of the Erasme Hospital in Brussel since its opening in 1989 (Englert et al. 1996). The goal is to avoid wasting a rare and precious good and use it in the most efficient way. It is based on a system where the oocytes of the donors are shared between several recipients for each cycle and no embryos are frozen. This means that while the recipient brings one donor to the clinic, she can nevertheless benefit from four embryo transfers (ULB Erasme; Englert 1996; Englert et al. 1996; Englert and Govaerts 1998). It has to be noted that most oocyte donors are chosen among relatives or close friends, and that more than half of them choose known donation program (Baetens et al. 2000; Pennings 2007). Older women are at a disadvantage because their peer group is older as well, and friends and family members may not be suitable as donors (Baetens et al. 2000).

The second type of donation is support or solidarity egg donation (CRG UZ Brussel Website c; Englert and

Govaerts 1998). In this case, two possibilities exist. The first one is known as egg sharing, meaning that a woman undergoing IVF treatment can donate half of her own harvested eggs to another woman if she has enough eggs according to medical criteria (CRG UZ Brussel Website; CSS 2010). *Egg sharing* has been performed only in the Centre for Reproductive Medicine of the Free University Brussel, and its success has dropped since IVF coverage by the health insurance was implemented (Pennings and Devroey 2006). The second method is called the “bridging formula” and functions on an exchange principle (CRG UZ Brussel Website). For example the wife of a man who needs *sperm* will donate her eggs to the bank. Nothing in the law excludes the possibility of intergenerational donation, for example, when a daughter gives oocytes to her mother (IGAS 2011). By way of example, in the Edith Cowell clinic, 87% are direct donation including 16% when the donor is a sister, 4% a distant relative, 70% a close friend, and 10% a distant friend. 6% are permuted donation and 7% anonymous donation (IGAS 2011).

Finland

The situation in Finland is characterized by a lack of donors and consequently not enough eggs to meet the demand. It is possible to use imported gametes if the donor has given consent and is registered in the Lutoeri gametes and donors register (Burrell 2012). An oocyte donation program has been implemented in 1991 at the Fertility Clinic, the Family Federation of Finland, Helsinki, before entering into force of law (Söderström-Anttila and Vilksa 2007; Söderström-Anttila et al. 2010). The clinic recruited volunteer women under 35 through the media and most reproductive treatments were performed anonymously on an altruistic basis (Söderström-Anttila 1998). Data from 2000 to 2004 show that out of 92 oocyte donors, 66 were anonymous and 26 non-anonymous, including 10 sisters and 16 non-relative donors (Söderström-Anttila and Vilksa 2007). The passing of the law in 2007 mandates the registration of donors, and facilitates anonymous donation with information available for the resulting child at age of majority, but does not exclude known donation, as demonstrated in a presentation by Dr. Söderström-Anttila (2010) where she mentions that donors can be altruist, related, or

IVF patients, and when known by the patients, can be brought to the clinic and then permuted with an anonymous donor.

France

The situation in France is characterized by the most severe lack of donors of any of the countries included in this report. This situation can be explained by different factors: first, by the very restrictive legal framework with its strict application of the principle of *altruism*⁶; second, by organizational factors related to institutional and administrative procedure and functioning; and finally, by the lack of official information about egg donation and fertility treatments with donated eggs addressed to potential donors, recipients and clinicians (IGAS 2011). Before the legal revision of 2011, a report was requested by the Ministry of Health and Sport and given to the *Inspection générale des affaires sociales* (IGAS 2011) in order to give an overview of the situation and improve the recruitment of donors, while maintaining the spirit of the law. According to the new law, three types of donors are considered. First, spontaneous donors who should represent the most important group, second, couples who benefit from a sperm donation and who could donate their oocytes as a counter-gift in the spirit of reciprocity, and third, couples undergoing ARTs treatments who could donate one part of their oocytes which could be vitrified. The law of 2011, still waiting for an implementation decree, abandoned the principle that donors must have already given birth to their own child(ren), in order to enlarge the number of donors by including younger women.

Until 2011, the main donation type in France has been relational, meaning that the donor is recruited personally by the recipient (Cornet 2007; IGAS 2011). Since egg donation in France is anonymous, recipient couples do not benefit directly from the eggs of their known donor, but by making her donate to the anonymous egg-pool of a fertility clinic they can expect their time spent on a wait list to be shortened. For that

⁶ In french, the term “*gratuité*” refers to the provision of eggs out of altruistic reasons and without any financial compensation. This term is hardly translated into English. In this report, the term “*altruistic*” will be used to refer to the “*principe de gratuité*”.

purpose, couples in need of IVF with donated eggs look for a donor among their relatives and friends through their own means, but also sometimes among unknown people to whom they promise a reward such as a car for example. The IGAS report (2011) warns against this type of concealed “compensation” which is not surveilled or controlled. The other risk concerns possible pressure on relatives and friends. This practice is inconsistent with the law, which explicitly states that access to IVF with donated eggs cannot be conditioned by the recruitment of donors, but in a context of very long wait lists due to a severe lack of donors, it can represent the only option for couples wanting to be treated in France.

The IGAS report (IGAS 2011) describes the structural conditions underlying the lack of donors. One of the main reasons is related to the difficult conditions under which medical teams work. Reproduction treatment with donated eggs is a peripheral activity, very demanding, time-consuming, and not very rewarding for them. Current activity relies on the volunteer work of very motivated teams confronted with insufficient financial and human resources. Another factor is administrative or bureaucratic and concerns the slowness and difficulty of the reimbursement of donor expenses, leaving them underfunded. They specifically point to the lack of information as much on the side of medical teams as on the side of recipients and potential donors. These factors demonstrate that in order to increase the number of egg donors, while respecting the altruistic ideal of the law, great change must occur at an organizational level, and this change must extend to the medical body to increase the feasibility of performing reproductive treatment with egg donation.

Spain

Spain is one of the rare countries that has enough egg donors at hand, which appears on their country website (for ex. Eugin Website) and is a good advertisement for foreign recipients. By way of example, there is an average of 8000 donors in Spain, compared to 150 donors in France and 1000 in UK (Le Lanou et al. 2010). The donor profile in IVI center in Sevilla is the following: a 25 year-old woman who has middle to high educational level, often working in the sanitary sector, and whose motivations are financial

compensation as well as altruism (IGAS 2011). Little is known about the recruitment practices performed in Spain, letting raise rumors of donors traffic from foreign countries never verified (IGAS 2011). However, it seems that in public centers recipients are encouraged to recruit donors in their circle of family and friends and to publish announcements on the Internet. Since only anonymous donation is authorized, they bring them to the donor pool and benefit from the oocytes of an anonymous donor. Private centers seem to recruit donors very easily, even from ethnic minorities (IGAS 2011).

United Kingdom

Since the passing of the law abolishing donor anonymity in 2005, the number of sperm and egg donors has increased, but in spite of this the number of people receiving treatment has decreased (HFEA 2011d). The HFEAct does not prohibit any form of donation. Egg donors can be known or unknown by the recipient. In the first case, recipients will search for donors among their friends and family; these donors can donate eggs directly or indirectly through “pooling schemes” introduced by some clinics. In the second case the clinic will match them with a recipient.

The UK is known for the practice of egg sharing where women undergoing treatment for themselves have the possibility to share their eggs with another woman in exchange of some benefit in kind (Ahuja et al. 2000; Rimington et al. 2003; Ahuja 2012). This practice started to be performed by Dr Kamal Ahuja and Dr Eric Simons in 1992 as an effort to increase the number of egg donors (Merricks 2014) and egg sharing now forms a nationwide network (Ahuja 2012). One of the advantages is that donors “recruit” themselves on the basis of their need for treatment and there is no need for advertising (Ahuja et al. 2000). The development of digital communities on Twitter and Facebook provide sharers and recipients new means to connect with each other (Ahuja 2012). A study performed by Dr. Ahuja at the London Women’s Clinic shows that since lesbian women have better success rates than their heterosexual counterparts because they usually do not have fertility problems (Anonymous 2009a; Goodchild 2009). They are thus increasingly searched as egg

donors for egg sharing arrangements (Anonymous 2009a; Goodchild 2009).

Shared eggs have been the biggest source of donated eggs during recent years (Ahuja 2012), but the introduction of financial compensation in the amount of 750£ in April 2012 changed the donor's profile. Data collected in 2013 show that 30% are now oocyte sharers, 10% are known donors, and 60% altruistic donors who receive the financial compensation of 750£ (Merricks 2014).

In 2011, a survey was launched by the HFEA to collect public opinion about sperm and egg donation, called "Donating sperm and egg: have your say". One of the question concerns family donation. According to the HFEA (2011c), donation between family members can take two forms. In the first case, eggs and sperm from close relatives who are genetically related can be *mixed* together (through insemination, IVF or ICSI). This refers, for example, to the creation of an embryo through the mixing of a daughter's eggs and a father or brother's sperm. This case constitutes an example of consanguinity and is not known to have ever happened in UK (HFEA 2011c). In the second case, eggs or sperm from a genetically related member of the family can be used *in place* of one's own eggs or sperm. In the context of egg donation, this refers mainly to a donation from sister to sister, or from a daughter to her mother. Taking into account the results of this survey, the HFEA allows both forms of donation between family members (HFEA 2011c). However, if the Act does not ban the *mixing* of egg and sperm between close family members genetically related, the HFEA guidance on "Donor recruitment, assessment, and screening" (HFEA Code of Practice 11) recommends that the mixing of gametes of close genetic relatives should not be performed for the welfare of the child. However, this restriction does not "include treatment that involves replacing the gametes of close relatives who are genetically related (e.g. sister to sister egg donation)" (HFEA Code of Practice 11, art.11.16).

The lack of donors has informed the emergence of Internet services aiming at connecting donors and recipients. With the goal of alleviating the lack of egg donors and raising awareness through the diffusion of

accurate and impartial information, the *National Gamete Donation Trust* (NGDT) was created in 1998. For example, they launched the project "Letter to My Donor" to raise awareness about donation, increase the social recognition of the high value of egg donation, and recruit more donors.

USA

Donors are recruited either by egg donation programs through independent agencies, or by infertile couples or single persons themselves (ASRM Ethics Committee 2007). The recruitment is mainly carried out through advertising on the Internet, but also in local newspapers and with posters. Ads can be found on the campuses of major universities, clinic websites, or websites like Craigslist (ASRM Ethics Committee 2007; Kramer 2009; Levine 2010). It is considered a time-consuming, expensive, and challenging process, with many interested potential donors dropping out the program before donating (Gorrill 2001).

Donors can be known or unknown and egg sharing is allowed. Usually anonymous or unrelated known individuals is preferred, but sometimes relatives are involved. The ASRM Ethics Committee published guidelines in 2012 regarding the use of family members as donors and surrogates (ASRM Ethics Committee 2012). They distinguish between two kinds of family donation: intragenerational – siblings or cousins of similar age – and intergenerational, for example when a daughter donates eggs to her mother. The main concern is for the welfare of the child and the possible pressure from the side of the recipient, as well as from the side of the donor. They conclude that intrafamilial gamete donation is ethically acceptable under the conditions that all participants are fully informed and counseled. However, they recommend that donation from children to parents should be approached very cautiously, and gamete donation from first-degree consanguineous relatives (for ex. sister to brother without donated sperm) should not be performed.

A.1.7 Donor's financial compensation and incentives

The practice of paying egg donors comes from the model of research clinical trials where subjects are

compensated (Sauer 1997). This issue is intensively discussed in the social sciences and medical literature. On the one side, critics point to the risk of financial coercion and exploitation, especially for women in financial need. Attractive financial inducement could in particular lead poorer donors to underestimate the physical and emotional risks associated with the egg donation procedure, and to hide important information relevant to their health or the health of the offspring (Levine 2010). The ethical question of whether making eggs a product to be sold devalues human life and is a threat to the ethical principles of autonomy, justice and consent is also widely discussed (Levine 2010; Shalev and Werner-Felmayer 2012; Waldby 2013). On the other side, supporters of egg donation compensation say that the eggs in themselves should not be paid for, but that the “time, inconvenience and discomfort” should be acknowledged and compensated (ASRM Ethics Committee 2007). Indeed, the egg donation procedure is invasive, demanding, and implies that the donor is treated with hormones, undergoes medical intervention – including the administration of anesthesia – to retrieve the eggs, must be regularly absent from work, and must travel, sometimes long distances (Shalev and Werner-Felmayer 2012). There are also possible side effects, even if they are not frequent, and long-term effects are understudied (Kramer et al. 2009). It is mainly for these reasons that the financial compensation of egg donors is considered by most as ethically acceptable (Robertson 2006; ASRM Ethics Committee 2007; Levine 2010). It has to be noted that in Europe, in general, the practice of egg donation relies on altruism and that the sale of body parts is prohibited.

Egg sharing is the procedure by which women who have enough eggs and are undergoing IVF treatment for themselves donate some of them. In exchange, clinics are allowed to offer benefits in kind in the form of reduced-price or free IVF treatment or reduction in waiting time. It remains a very controversial practice, with critics saying that it is a way of paying donors and of putting pressure on women who are already socially or economically disadvantaged and biasing their informed consent (Nisker 1997; Delbaere and Englert 2001; Englert et al. 2004). On the other side,

supporters say that it is a less harmful way of obtaining eggs, as women already undergo treatment for themselves, donation does not add any additional risk, and it allows women with limited funds to access IVF (Blyth 2002; Rimington et al. 2003). An increasing body of evidence shows that mild and minimal stimulation using a lower dosage of hormones (gonadotrophins) does not decrease the pregnancy rates in spite of a reduced number of oocytes collected (Zarek and Muasher 2011). The procedure could even generate better quality oocytes (Verberg et al. 2009a; Verberg et al. 2009b). But if the advantages for the women undergoing hormonal stimulation are very important – reduced costs, less injections and fewer hormones taken, better tolerability, decreased discomfort and risks of side effects – one disadvantage is that this procedure reduces the number of surplus embryos and thus the possibility of egg sharing (Verberg et al. 2009a; Verberg et al. 2009b; Zarek and Muasher 2011).

The form compensation takes is also under debate. There are several options. Compensation can be a fixed amount of money, can be based on documentary evidence (bills, receipts, etc), or can be dependent on other factors, such as the donor’s education level or physical characteristics, and/or based on the laws of the market.

Belgium

The principle of altruistic donation prevails and the commercialization of gametes is forbidden. Gametes can be donated only for free, but a financial compensation covering travel expenses and loss of salary, as well as hospitalization fees and charges, can be offered. For example, the Hospital Erasme gives a fixed compensation of 300 euros, but the average amount is 500 euros and can rise to 1000 euros (IGAS 2011).

Since 2003, when the decision was made to fully cover six IVF cycles with social security, the number of egg sharers has sharply dropped (approximately 70%) (Pennings and Devroey 2006), showing that without a financial benefit as an incentive, women are less willing to share their eggs and that women who

entered an egg-sharing program did it mainly because of restricted financial means.

Finland

According to the section 21 of the Act (1237/2006), no remuneration can be given, but a reasonable sum can be offered in compensation of the expenses and loss of income.

France

In France, egg donation is based on principles of altruistic, voluntary, and disinterested donation from one couple to another. France enforces a strict interpretation of the principle of altruism on which the law is based. The idea is that the donor should be compensated by the satisfaction of having committed an altruistic act, but this ideal is difficult to apply in practice (Le Lannou 2010). According to the IGAS report (2011), the goal is to reach financial neutrality, meaning that all the expenses of the donor in relation to the donation should be covered. For example donors should have their travel expenses reimbursed and have their treatment fully covered to reach this financial neutrality. However, in practice, the procedure to obtain reimbursement is very complicated and donors are financially losing. The IGAS report (2011) concludes that in order to recruit more donors, the reimbursement procedure should be simplified.

In 2011, two changes were introduced, but still await an implementation decree. The first one concerns the authorization of the absence from work for the reason of donation without a salary loss. The second one concerns the possibility of a counterpart for young donors, who can have part of their eggs stored by *vitrification* for later own use as a compensation for their donation.

Since IVF with donated eggs is fully reimbursed in France, there is no direct incentive for egg sharing. However, the IGAS report (2011) observed that egg sharing was proposed by medical teams to women having already had at least one child through IVF and wanting a second or third child, or to women having already had children without ARTs and seeking IVF in the context of a second marriage because of male infertility.

Spain

In December 1998, the Commission Nacional de Reproducción Humana Asistada (CNRHA) accepted that economic compensation was not inconsistent with the principle of altruism on which the law was based (SEF and ASEBIR 2012). But this economic compensation appeared in a legal text only with the law 14/2006 (SEF and ASEBIR 2012). The article 5.3 (Ley 14/2006) states that donation can never be regarded as a commercial or lucrative process and the only form of remuneration is compensation which should not constitute an economical incentive. Compensation aims at covering the physical burden, travel costs and loss of earnings arising from the donation procedure. The amount of money is defined by the Ministry of Health and should be periodically revised. The amount of the compensation should be the same in every clinic in order to avoid competition and excludes variations of the compensation according to the donor's characteristics for example (SEF and ASEBIR 2012). In practice the IGAS report (2011) observes that despite a fixed indemnity compensation of around 900 euros, the amount of the compensation can vary among clinics. It reports also that according to professionals working in Spain the financial compensation constitutes the main incentive for donors.

United Kingdom

The question of paying or not for egg donation is an old question and was already being debated in the nineties (Craft 1997; Jonhson 1997; Sauer 1997). The HFE Act relies on the principle that egg donation is voluntary and unpaid. However, since 2011, the current HFEA policy on egg donors compensation is that egg donors can be compensated with a fixed amount of 750£ per cycle. This measure entered into force April 1st 2012 (Merricks 2014). Donors can also file a claim for additional compensation to cover higher expenses due to the donation, such as for travel, accommodation or childcare. If the donors are not permanent residents in the UK, they are compensated in the same way, but cannot claim excess to cover their travel expenses (HFEA Code of Practice 13).

The introduction of financial compensation has had a tremendous impact on the number and profile of egg donors. While there were very few voluntary egg donors before, data from 2012-2013 show that they have become the main type of donors. 60% are voluntary donors who receive financial compensation of 750£ in exchange for their donation, in comparison with 10% known donors, and 30% egg sharers (Merricks 2014). Through this change, clinics could drastically reduce their wait lists and even cover the demand for reproductive treatment with donated eggs (Merricks 2014).

Clinics are allowed to offer benefits in the form of reduced treatment costs or faster access to treatment in the case of egg sharing. Some clinics offer also freeze-and-share programs, meaning that women can have autcryopreservation expenses reduced or covered in exchange for their donation (Mertes et al. 2012; Attala 2008; Collins 2013; London Egg Bank Website).

USA

The ASRM Ethics Committee (2007) states that compensating egg donors is ethically justified. It acknowledges the “time, inconvenience, and discomfort” involved by the procedure. However, it also states that the compensation should not vary according to the quality and number of oocytes, children born from prior donations, and the donor’s ethnic or personal characteristics (ASRM Ethics Committee 2007). Two types of compensation are taken into account: monetary compensation and egg-sharing arrangements with reduced treatment costs. The normal amount of the compensation should range between 3000 and 5000 dollars. Over 5000 dollars, it requires a justification and above 10,000 it is considered as inappropriate.

Studies show that clinic websites do not fully comply with these guidelines. According to Keehn et al. (2012) 49% of websites do not respect ASRM’s guidelines intending to avoid the selection of particular human traits and 34% of websites offer to pay donors higher compensation for certain traits. Kramer (2009) found that financial compensation is usually between 8000 and 15,000 dollars per cycle and can rarely rise up to 100’000\$ and Levine (2010) found that half of the

advertisements for egg donation offered compensation exceeding ASRM’s recommended levels. Keehn et al. (2012) observed that some clinics pay a premium to donors who have already successfully donated eggs, which is considered ethically problematic because it could lead donors to repeat the procedure and selects fertility as a preferable trait. A geographical variation in payment where amounts are higher on the west and east costs has also been observed (Levine 2010).

Only two States – Louisiana and Virginia – explicitly prohibit or sanction the sale of human ovum, although egg donation can be financially compensated (Terman 2008). Without getting into more detail, the difference between egg donation for research and for reproductive purposes is an important and controversial issue in the USA. While the payment of egg donors for reproductive treatment has been generally left to supply and demand rules, the payment of egg donors for *embryonic stem cell* (ESC) and nuclear transfer research has been increasingly discussed (Beeson 2006; Robertson 2006; Ballantyne and de Lacey 2008; Klitzman and Sauer 2009). Recently, several states decided to publicly fund stem cell research and thus regulate the payment of donors. In 2005, the *National Academy of Science* (NAS) had already recommended that only the direct expenses of egg donors should be reimbursed (Robertson 2006). California and Massachusetts are two states at the forefront of ESC research and fund it publicly (Robertson 2006). In 2006, they adopted laws restricting the compensation of egg donors to direct expenses. The Assembly Bill 926 aims nevertheless to overturn this Californian Law and to authorize payment above direct expenses to acknowledge the “time, discomfort, and inconvenience” involved in the procedure.

A.1.8 Advertisement for egg donation

Advertisement is defined as “a notice or announcement in a public medium promoting a product, service, or event [...]” (Oxford Dictionaries). It belongs to the field of marketing and its use in reproductive medicine raises questions about biased information, undue inducement, risks, commercialization of treatment and of body parts

(Levine 2010; Shalev and Werner-Felmayer 2012; Waldby et al. 2013). Advertisement for egg donation can address two target audiences. The first one concerns advertisement intended to attract possible egg donors to donate. It is related to the question of incentives and of recruitment studied in sections A.1.6 and A.1.7, but concerns specifically the way the activity of providing eggs is promoted in public and social media. The second one concerns advertisement targeting possible recipients and how awareness of reproductive treatment with donated eggs is raised in public and social media. Since, in many countries the demand outreaches the supply, efforts to advertise are mainly geared towards possible egg donors. However, the privatization of reproductive medicine and the consequent competition among clinics has given rise to rather offensive advertising strategies for reproductive treatment with donated eggs (Castilla et al. 2009; IGAS 2011).

In Europe, advertisement for egg donation is usually prohibited based on the principle that body parts should not be commercialized (Directive 2004/23/CE European Parliament). However, information about the procedure must be provided to potential donors in order to recruit them, but also to potential recipients who must be aware of this treatment option. In the context of increasing cross border reproductive care, and accelerated development and access to various media, information circulates widely through the Internet, for example through forums, or patients association websites (Pennings et al. 2009; Merlet and Sénémaud 2010; Shalev and Werner-Felmayer 2012). Thus, the limit between informing and promoting can be easily blurred. In the USA, the situation is different. Reproductive medicine is market driven and advertisements targeting donors as well as recipients is commonplace (Hobbs 2007; Kramer 2009; Levine 2010; Keehn 2012).

Belgium

Aiming at recruiting more egg donors, the Center for Reproductive Medicine (CRG UZ Brussel Website d) at the UZ Brussel organized a campaign. It is called "There is more in you" and is available in different languages. It looks more like an information brochure than a real advertising campaign and targets "potential

donors" and "acceptor candidates". Its goal is to raise awareness about egg donation and to promote solidarity among patients (CRG UZ Brussel Website d)

On the websites of reproductive clinics there is information and not overt advertising, but there are, for example, pages dedicated to overseas patients (CRG UZ Brussel Website a) providing them with information about treatment, medical procedures, hotels, when they have to travel, and what part of treatment can be done in their home country. They are not especially intended for egg donation patients.

Finland

Advertising egg donation and reproductive treatment with donated eggs is not explicitly illegal. The only prohibition concerns donor remuneration (Act 1237/2006, sect.21). On the websites of fertility clinics – for example Fertinova, Felicitas, and Väestöliitto – advertisements for egg donation are not found. There is only basic information about reproductive treatment with donated eggs and about the conditions to become a donor, above all regarding the legal framework.

France

In France direct advertisement is forbidden (Cornet 2007; Merlet and Sénémaud 2010). Since the passing of the laws of 2004, the mission of promoting gamete donation is the province of the agency of biomedicine (Agence de Biomédecine or ABM). On their website, information about reproductive treatment abroad can be found (ABM Website a). It outlines the difficulties and risks of this procedure in an informative way. The agency has another website dedicated especially to egg donation and reproductive treatment with donated eggs where one can watch short films about experiences and experts' opinions (ABM Website c). An information brochure explaining the procedure and the legal framework is also available.

Until 2004, no information campaign promoting egg donation was organized. In 2008, an information campaign was launched aiming at recruiting egg donors and at sensitizing public opinion (Le Lannou 2010; Merlet and Sénémaud 2010). In February 2010, the campaign "Parfois le désir d'enfant ne suffit pas pour être parent" was implemented in order to recruit

more sperm and egg donors (ABM Website b). These campaigns had limited success (IGAS 2011). In 2012, a new campaign displaying three humorous short films was organized, reaffirming key concepts of the French regulation such as anonymity and altruism (ABM Website f). It circulated on video platforms such as Youtube and Dailymotion, blogs, and websites intended for men and women. In its conclusions, the IGAS report (2011) recommends an increase in the dissemination of information at the national level and a greater focus on specific groups (see also Cornet 2007). Following this advice, a new campaign called “Le don d’ovocytes près de chez vous” started in 2013 targeting women who are already aware and interested in donating, but need help to make an appointment with a reproductive clinic or center (ABM Website d).

Spain

In Spain, advertisement and promotion of egg donation are prohibited (Ley 14/2006 art.5.3) and the “voluntary, altruist, and disinterested” nature of donation is highlighted. However, the situation is characterized by a very competitive environment, where private centers predominate (80 to 90%). This situation entails commercial politics which can be rather offensive. On the Internet, there is a preponderance of clinic websites and advertisements for professionals (IGAS 2011).

United Kingdom

According to the HFEA code of practice on payment for donors, “advertising or publicity aimed at recruiting gamete or embryo donors or at encouraging donation should not refer to the possibility of financial gain or similar advantage” (HFEA Code of Practice 13). The National Gamete Donation Trust aims at raising awareness about egg donation and reproductive treatment with donated eggs. On their website, experiences and narratives of donors and recipients can be found.

USA

In the USA, donors are mainly recruited through advertisements on the Internet, as well as in newspapers on the campuses of major American universities (Kramer 2000), raising many debates about appropriate ways of recruiting and compensating egg

donors (Ballantyne and de Lacey 2008; Keehn et al. 2012). Donor recruitment through advertisement represents an enormous cost for the clinics with limited success – not all interested donors become active donors, and targeting the right audience is difficult (Gorrill 2001). Several studies criticize bias in the provision of information about egg donation and egg cryopreservation on the clinic websites, claiming it is skewed in order to recruit more donors. Critics also deplore the lack of adherence to ASRM/SART guidelines regarding several aspects such as financial incentives (Abusief et al. 2007; Levine 2010), the quality and accurateness of information provided (Abusief et al. 2007; Kramer et al. 2009; Avraham et al. 2014) and the donor’s age (Alberta et al. 2013). The role of the Internet as a source of information, recruitment, and connection is very important (Abusief et al. 2007; Holster 2008). It has to be noted that in spite of the inclusion of a monetary incentive, advertisement seeking egg donors are mostly formulated in emotional, not commercial, terms and stress the power of love (Hobbs 2007).

The situation in the USA is characterized by a privatized market and competition among clinics. On reproductive clinic websites, success rates, technological and medical excellence, and the quality of the selection process of egg donors are usually highlighted (e.g. California Fertility Partners Website; San Diego Fertility Center Website). Websites classifying clinics according to their multiple birth rates, live birth rates, and number of cycles can be found (e.g. FindTheBest Website).

A.1.9 Oocyte distribution, storage, and management

Once the oocytes are retrieved, they can be used fresh, or after cryopreservation (Cobo et al. 2011). They can also be distributed between several recipients or kept only for one recipient. This point is important for recipient couples or women who are sometimes worried about the fact that their child could have “half-sisters” or “half-brothers”. To avoid the risk of consanguinity existing between “half-siblings” without anyone knowing it, a limit is usually set to the number of children conceived from one donor’s gametes. This point is also important with regard to the

maximization of a scarce resource. A last point concerns the circulation of oocytes which can increasingly be imported and exported, due to progress in cryopreservation techniques. The changes brought by these recent developments to the conditions of oocyte distribution, storage and management will be examined in section A.1.13. In this section, it will only be mentioned when the possibility of importing/exporting gametes exist.

The Directive 2004/23/EC of the European Parliament and of the Council of 31 March 2004 sets standards for quality and safety for the donation, procurement, testing, processing, preservation, storage, and distribution of human tissues and cells. As this directive is not specific to the storage and management of donated eggs, it will not be examined in the framework of this report, based on the assumption that all regulations of EU-Member-States have to deal with these issues in a similar manner.

Belgium

Belgium developed a specific procedure to maximize the use of the scarce resource that is oocytes: this method is called permuted donation. The goal is to avoid wasting a scarce resource by avoiding the creation of surplus embryos and using all available fresh oocytes. Each recipient brings an egg donor who donates once. The eggs of the donors are shared between several recipients, so that each recipient can benefit from 3 to 4 embryo transfers. This system entails difficulties, especially of synchronization, but provides good rates of success (ULB Erasme Website; Englert et al. 1996; Englert and Goaverts 1998).

The law (M.B.17/07/2007) does not distinguish between eggs and sperm and uses the generic term gametes. However, Chapter 2, which addresses the cryopreservation of gametes, among other things, was written before the efficiency of vitrification of oocytes was recognized, meaning that this chapter implicitly concerns more sperm than oocytes, even if the generic term "gametes" is used. Information presented below is based on the law (M.B.17/07/2007) which theoretically concern eggs and sperm. The law distinguishes three cases where gametes can be retrieved. First, gametes may be retrieved for a

parental project or cryopreserved for later own use (M.B.17/07/2007, chap.2). Second, they can be integrated into a scientific research program (M.B.17/07/2007, chap.3). Third, they can be assigned to a gamete donation program in the provision of medically assisted procreation (M.B.17/07/2007, chap.3).

When gametes are cryopreserved for one's own use, they may be cryopreserved for a period of 10 years (M.B.17/07/2007, art.46). If they are not used, they can be assigned to a gamete donation program (M.B.17/07/2007, art.40). Post-mortem transfer is authorized from six months after death to two years if this is the object of a prior convention (M.B.17/07/2007, art.44). The law does not specify a deadline for cryopreserving gametes donated in the framework of a donation program and lets the centers set their own limits (M.B.17/07/2007, art.63). The number of women who give birth with gametes from one donor is fixed at six (M.B.17/07/2007, art.55).

Finland

The Act (1237/2006) refers to the generic term gametes and specifies when a distinction between oocytes and sperm is made. When the gametes have led to the birth of child(ren) in five recipients they cannot be used any more for another person (sect.4). Gametes must be destroyed if the donor withdraws her consent (sect.6; sect.16). The storage deadline is fixed at ten years. After that gametes must be destroyed (sect.6). A restriction on the use of gametes concerns posthumous use, implying that gametes must be destroyed after the death of the donor, as soon as the service provider is informed of his/her death (sect.6). Imported gametes can be used in treatment under the condition that the principles of the Act are respected (sect.3).

France

The law states that donated gametes from one donor can lead to the birth of ten children (art.L1244-4 modified by Loi n°2004-800, August 6th 2004). In practice, egg donors usually undergo only one cycle, but sometimes they donate a second time (CECOS Website). About ten oocytes are retrieved and then shared out between two or three recipients, typically resulting in one pregnancy (CECOS Website). In the

fertility clinic of the Tenon Hospital in Paris, six oocytes are given to each recipient couple per cycle, the additional oocytes being donated to another recipient couple, in order to optimize success rates (Cornet 2007). The cryopreservation of oocytes is changing these practices (IGAS 2011; Belaisch-Allart et al. 2013). This point will be examined in section A.1.13.

Spain

The law fixes the number of children conceived with the gametes of donor to six (Ley 14/2006, art.7). However, because of the lack of a registry at the national level, there is no real control (Luceno et al. 2010). In practice, the control relies on the donor who must report on whether or not she has already donated oocytes, and if she has, to which center, when and under what conditions (Ley 14/2006, art.5.7). The center is responsible for confirming this data and verifying the outcome of previous donations (Ley 14/2006, art.5.7). The law states that if the number of children exceeds this number, donor's gametes must be destroyed (Ley 14/2006, art.5.7). Postmortem use of gametes is only regulated in regard to sperm (Ley 14/2006, art.9). Gametes can be imported and exported in respect to the norms in force (Ley 14/2006, art.26.12).

UK

According to the HFEA guidance note on the storage of gametes and embryos (HFEA Code of Practice 17), gametes can be stored up to ten years, unless a demand for extending the storage period is issued. Storage is subject to consent; if such consent is withdrawn, centers have twelve months to inform intended recipients and destroy the gametes. Gametes cannot be kept frozen after a person's death. The HFEA guide of practice on consent to treatment storage, donation, and disclosure of information states that according to the HFE Regulation of 2009 on statutory storage period, a "mechanism for successive ten-year extensions of storage" is established, "up to a maximum of 55 years" (HFEA Code of Practice 5). It also makes clear that gametes can be imported from foreign countries under the condition of donor's consent.

One of the questions asked during the public consultation organized by the HFEA about egg and

sperm donation concerns the family limit created with one donor's gametes. The HFE Act states that ten families can be created at the most. It does not specify how many children within each family. Donors can decide how many families they want to help, up to the maximum of ten, and can express their wish for a smaller number of families. When gametes are imported from abroad, the limit of ten families must be respected. Generally less than 1% of donors create ten families and the majority contribute to the creation of one or two families with or one two children (HFEA 2011c).

USA

The ASRM Practice Committee (2008) on repetitive oocyte donation recommends a limit of 25 pregnancies with the gametes of one donor – sperm or oocytes – in a population of 800'000 to minimize risks of consanguinity. As scientific data on egg cryopreservation are limited, there is no recommendation about the effect of duration of storage on egg quality and pregnancy rates (ASRM and SART Practice Committees 2013a).

A.1.10 Modes of confidentiality and anonymity

Anonymity and children's right to know their genetic origins are very much discussed in the literature and in public debates. During the initial phase of usage for these reproductive technologies, anonymity has been the prevailing practice in order to legitimate gamete donation and prevent the intrusion of a third-party in the family. But non-anonymity is becoming increasingly common in European countries, among others under pressure from donor-conceived children and the human rights apparatus to know about one's own origins (Théry 2009; Delaisi de Parceval and Depabt-Sebag 2010; Brunet and Kunstmann 2013). Who has the right to know what? Who can say what under what conditions? Answers to these questions are difficult to determine since donor-conceived persons, parents, and donors do not have the same interests (ASRM Ethics Committee 2013a). They can include many options ranging from full anonymity to knowing the donor and various levels of disclosure integrating the right to privacy, autonomy and knowledge about one's own conception.

Anonymity and disclosure are related to confidentiality, which is defined as the “measures ensuring that all data collected including genetic information have been rendered anonymous so that the donor and the recipient are no longer identifiable” (Health and Consumer Protection 2006: 3). That means that systems of registering and traceability must be implemented to ensure good management of identifying data, which raises questions regarding the kind of information to be kept, for how long, by whom and how.

Belgium

The law (M.B.17/07/2007) promotes anonymous gametes donation where no identifying data can be transmitted. When eggs are donated to an anonymous program, the center has to anonymize all identifying data. However, non-anonymous donation or known donation is also possible – and actually represents the main type of donation (Baetens et al. 2000; Pennings 2007) – implying the possibility of transmission of information between recipients and donors. In this case, an agreement between donor and recipient must be signed.

Medical information relevant for the possible child-to-be and physical characteristics of the gamete’s donors must be collected (M.B.17/07/2007, art.64). This information can be given to the recipient woman or couple at the time of their choosing (M.B.17/07/2007, art.65) or for medical reasons to the donor-conceived person, his or her doctor, or the doctor of the recipient woman or couple. If the recipient couple or woman wants non-identifying information about the donor, they or she can make a request.

Finland

Egg donation relies on the principle of confidentiality. Donors have the possibility to know whether a pregnancy and a live child resulted from their donation (Burrell 2012). Information on the donor collected during the physical examination are confidential and cannot be disclosed (Burrell 2012). That means that recipients cannot receive information about collected and recorded data on color of the donor’s skin, eyes, hair, as well as the donor’s height

and ethnic origin. Information about the couple cannot be transmitted to the donor either (Burrell 2012).

In the Luoteri registry, the name and social security number of the donor are kept as well as data on the donor’s code, details regarding consent given or withdrawn to confirm paternity, and specifics pertaining to the donation (sperm, eggs or embryos) (Burrell 2012). According to the Act (1237/2006, sect.23), donor-conceived children have the right to access identifying information about the donor at the age of 18. This point has raised fears that there will be a decrease in the number of egg donations (Tuomi-Nikula 2006).

France

Historically, anonymity was seen as a corollary from altruistic donation. It aimed at protecting donors and parents from unwanted intrusion in each other’s lives. This principle has its origin in the creation of CECOS by Georges Davis in 1973. It was then considered a way of legitimizing the practice of sperm donation (Leonnetti 2011; Brunet and Kunstmann 2013). Ever since then, the law has imposed anonymity. During the last revision in 2011, still waiting for the implementation decree, the question of whether anonymity should be maintained has been hotly debated (Théry 2009; Delaisi de Parceval and Depabt-Sebag 2010). Regarding egg donation, the choice to preserve anonymity is seen as a means of promoting the recruitment of donors, because in countries where anonymity is abandoned there is often a resultant decrease in the number of donors (Le Lannou 2010). This is not considered desirable in a country where there is already a severe lack of donors (IGAS 2011). The CECOS – Centres d’Etude et de Conservation des Oeufs et du Sperme humains – are responsible for the confidentiality of data.

Spain

Egg donation is anonymous in Spain. However, donor-conceived children have the right to obtain non-identifying information about the donor (Ley 14/2006, art.5.5). The recipient can also be informed about the age, origins, blood type, weight, and height of the donor. The degree of information varies from one center to another. For example, some centers provide

information about the education level of donors (IGAS 2011). According to article 5.5 of the law 14/2006, the identity of the donor can be disclosed only under exceptional circumstances such as “unequivocal danger to the life or health of the child born through assisted reproduction, or regarding procedural criminal law matters”. According to law 14/2006 (Ley 14/2006, art.5.5), gamete banks must guarantee the confidentiality of donor identity data.

United Kingdom

Information about the donor that must be registered are the following: physical description; year and country of birth; ethnic group; donor’s parents’ ethnic background; whether the donor was adopted or donor-conceived; donor’s marital status; how many children the donor already has and their sex; details of donor screening tests and medical history; goodwill message; a description of themselves as a person (HFEA Code of Practice 20).

The HFE Act requires centers to inform recipients about the importance of informing donor-conceived children at an early age that they were conceived with the gametes of another person (HFEA Code of Practice 20). In 2005, the UK adopted a legislation removing donor anonymity and the HFE Act 2008 expanded the right to access information. Under certain circumstances, 16 year-old donor-conceived children can access non-identifying information about the donor and their possible siblings, especially if they plan to marry or to have sexual intercourse with someone. 18 year-old donor-conceived persons have access to identifying information about the donor and the siblings (HFEA Code of Practice 20).

Parents can obtain non-identifying information about the donor from the clinic when they receive treatment, as well as information about offspring with the same donor (number, sex, year of birth). According to the guidance note 20 on assisted donor conception (art.20.1), “The centre should give people seeking treatment with donated gametes or embryos: (a) non-identifying information about donors whose gametes are available to them, including the goodwill message and the pen-portrait – self-description of personality and motivations – (if available) (b) information about

genetic inheritance and, in particular, the likelihood of inheriting physical characteristics from the donor, and (c) information about the age of the donor and the associated risk of miscarriage and chromosomal abnormalities”. Donors can also be provided with non-identifying information about donor-conceived offspring, such as number of children born from their donation, their sex and year of birth (HFEA Code of Practice 20).

The Donor Conceived Register, formerly called UK Donor Link (UKDL)⁷ was created in 2004 and is a platform where people conceived through donated gametes before 1991, that is to say before the passage of Act 1990 requiring registration, can look for information about their donor and siblings and if desired meet them, and vice-versa, while benefiting from support and counseling (Donor Conceived Register Website).

USA

The Ethics Committee of the ASRM (ASRM Ethics Committee 2013a) strongly encourages the disclosure of donor-conception to offspring, while recognizing that the recipient parents are the best placed to decide. They leave to the egg donation programs and egg banks the task of developing “flexible policies to accommodate the varying disclosure preferences of both donors and recipients” (ASRM Ethics Committee 2013a: 48). They also encourage egg donation programs and egg banks to anticipate the inquiries of donor-conceived persons and to decide in advance how information about the donor should be released.

The Ethics Committee of ASRM specifying the “interests, obligations, and rights of the donor in gamete donation” (ASRM Ethics Committee 2009) identified four levels of information sharing and recommend that at least the two first levels should be implemented:

- non-identifying information: medical and biographical information, like a letter intended for the recipients
- non-identifying contact for medical updates: anonymity is maintained but important information

⁷ Since the first April 2013, the UK Donor Link is closed and replaced by the Donor Conceived Register.

about donor or donor-conceived persons are exchanged via the egg donation program.

- non-identifying personal contact: between donor and child, when the latter reaches a certain age and if both parties agree to disclosure.
- identifying information: when the donor-conceived person reaches majority age and both party agree to the disclosure.

A.1.11 Family issues

Since egg donation involves a third party in the conception of the child, it entails a separation between the woman who gives her genes and the woman who carries and gives birth to the child. In Switzerland, for example, this separation of maternal functions provides a justification for the prohibition of egg donation according to the roman legal principle that *mater semper certa est* (Manai 2008). In order to make this separation invisible, donors and recipients are generally matched according to phenotypical resemblance criteria and similar blood types (Bergman 2010; Fortier 2009; Marre and Bestard 2009). However, if in general motherhood tends to be defined biologically, above all through birth (Iacub 2004), in each country, parenthood is also defined legally through the Civil Code. Legal parenthood has consequences for inheritance, nationality, financial responsibility, and parental responsibility for rearing the child. In Europe, there is a consensus about the absence of kinship relation between donor and offspring and about the impossibility of any liability case against the donor.

This section examines how family issues are regulated. It refers to filiation, but also to the making of resemblances, and to the choices left to recipients with regard to family models, for example, whether they want their oocytes to be used by a heterosexual couple or agree that they can be used by a single woman or women in same-sex couples. It will be mentioned in this section, when the creation of an embryo with donated sperm and donated eggs, that is to say non-genetically related to the recipient is prohibited or allowed.

Belgium

According to the law (M.B.17/07/2007), the rules of legal parenthood are in favor of the authors of the parental project. That means that no kinship relation can be established between the donor and offspring or in other words that the donor has no rights and no duty with regard to the offspring and that there is no difference legally between a couple who has children without medical assistance and a couple who has children with donated eggs. The legal mother is defined as the woman who gives birth to the child. The medical staff matches donors and recipients according to physical resemblance criteria, but donors have the possibility to choose the type of recipients she would like her eggs to be donated to. For example, she can say that she does not want their oocytes to be used by a single woman or a lesbian couple. The possibility of a double donation is legally not excluded.

Finland

The Act (1237/2006) prohibits the selection of donors according to physical features or characteristics (Burrell 2012). The reproductive gynecologist chooses the donor according to a principle of physical resemblance “unless otherwise requested by the person receiving treatment” (Act 1237/2006, sect.5). This exception remains unclear, but probably refers to the possibility for the recipient to say that resemblance is not important and any donor can be chosen. Donated sperm and donated oocytes can be used in the treatment of one recipient (Burrell 2012). Donors can also choose if they want their oocytes to be used by a single or lesbian women and must give their consent for it (Burrell 2012).

France

The civil code (art.311-19) states that no kinship relation can be established between the donor and the children born from their donation, meaning that the donor has no right and no duty towards the resulting child. Likewise, no liability case can be made against the donor. The medical staff matches couples and donors according to morphological criteria such as color of skin, eyes, weight, height, ethnic origins, hair color and texture, blood type (IGAS 2011). In order to avoid the creation of embryos not related genetically to at least one of its parents, IVF with donated eggs is

authorized only if the male gametes come from the couple (Reineke 2008), entailing that a double donation – the creation of an embryo with donated sperm and donated egg is forbidden even though embryo donation is authorized.

Spain

According to the Law 14/2006 (art.7-8), the recipient couple or woman do not have the right to “refute that the child born is theirs”. Even in case of the revelation of the identity of the donor, no legal kinship relation can be established between the donor and children born from the donation. According to the article 6.4 of the law 14/2006, the medical staff must guarantee the closest phenotypical and immunological similarity and donors cannot be personally selected by recipients.

United Kingdom

The HFE Act 2008 defines the mother as “the woman who is carrying or has carried a child as a result of the placing in her an embryo or sperm and eggs, and no other woman, is to be treated as the mother of the child”, meaning that the legal mother is the woman who carries the pregnancy and gives birth even though she may not have a genetic connection to her child. Donors have no financial or legal obligation towards any child conceived with their eggs, and have no rights either. If the Act 1990 privileges marital relationships, the Act 2008 brings some change, as same-sex couples can be the legal parents of the child.

According to the code on the practice of donor recruitment (HFEA Code of Practice 11), donors can specify conditions regarding the use of their gametes, but only as long as they do not go against the Equality Act 2010 asserting equality regarding the following criteria: age, disability, gender reassignment, marriage or civil partnership, religion, race, pregnancy and maternity, sex, sexual orientation. The possibility of double donation is not legally excluded.

USA

According to the ASRM Ethics Committee (2009) donation usually severs all legal rights and duties regarding the donor-conceived child. The Uniform Law Commission and the National Conference of Commissioners on Uniform State Laws published the

Uniform Parentage Act in 2002. Article 7 proposes a regulation on the status of the “child of assisted reproduction”. The act can then be adopted by the states. It clearly excludes the egg donor from claiming maternity. Historically, various rights and obligations have been discussed in the courts, and family has been steadily defined by individuality and choice (Dolgin 1999). Double donation is possible.

A.1.12 Informed consent and counseling

As the procedure of egg donation is invasive, demanding, and implies a reflection on the meaning of genetic inheritance and on family and motherhood models, as much on the donor’s side as on the recipient’s side, a tradition of counseling has been developed. Counseling should be confidential, non-directive and non-judgmental. It aims at helping people to clarify their feelings, thoughts and priorities, identify their strengths, as well as to feel empowered and more self-confident (BiCa 2006; Infertility Network UK Website). Whether this is an obligatory step to access treatment or an optional condition is differently assessed within regulations.

Written informed consent is usually the basic requirement for the donation, use, and storage of gametes, as much as for any other medical treatment. It relies on the provision of comprehensible and complete information for the parties involved and on the premise that the person donating is in full capacity of discernment according to legal criteria, and consents to reproductive treatment voluntarily and without coercion. In the *bioethics* literature, three features characterize this condition: 1) disclosure, meaning relevant information provided by a clinician, 2) ability to understand this information, 3) voluntariness, meaning ability to make a decision freely (Silkern et al. 2013). Although the provision of information aiming at a written informed consent and offer of counseling are theoretically different and are usually thought of as having to be carried out by different and independent professionals, they are often considered to be the basis of any reproductive treatment in regulations, meaning probably that counseling can be considered part of the path to an informed consent in order to be sure that

patients fully understand the implications of the treatment options (BiCA 2006).

Belgium

Liberal access to reproductive treatment in Belgium relies in part on a permanent contractual process and the requirement of conventions which must be signed by the authors of the parental project (M.B.17/07/2007, art.7). In case of egg donation, the law requires a convention between the donor and the center where the donor shows her willingness to be submitted to all required medical tests, and to give all the information requested, as well as to have her gametes destroyed if they do not meet the safety criteria (M.B.17/07/2007, art.59). Once the donation procedure has started, it becomes irrevocable and the donor cannot withdraw her consent (M.B.17/07/2007, art.59).

The law requires that counseling shall be proposed and donation shall be accessed only after a favorable opinion is issued by a psychologist on the recipient's, as well as on the donor's side (IGAS 2011). The report of the Conseil Supérieur de Santé (CSS 2010) recommends that even if the consent of the donor's partner is not legally required, he/she should be aware of the donation procedure and support it.

Finland

According to the Act, reproductive services providers have an obligation to provide information on the legal status of the child to be born, on the impact of biological origins, and on the right to obtain information (Act 1237/2006, sect.9). Gametes cannot be used without the donor's written informed consent. If the donor withdraws her consent, the centers must destroy the gametes as soon as they learn of this change. Donors should be offered counseling on the complexities of gametes donation before giving their consent. Imported gametes donated by foreign donors are submitted to the same requirements

France

In France, a psychological interview is offered as a kind of support for donors and recipients but is not compulsory. The IGAS report (2011) recommends that it should become an obligatory step. Written informed consent is required from the donor and if she is in a

couple – married or not – from her partner too (art.L-1244-2). This consent can be withdrawn at any time until gametes are used in treatment. The same rules apply to the recipient couple.

Spain

According to the law 14/2006 (art.5.4), before the contract between the authorized center and the donor can be signed and formalized, the donor must receive information about the objectives and consequences of donation. The article 6.2 specifies the kind of information which must be given to the donor and recipient. If the donor is married, her husband must also sign the consent (Ley 14/2006, art.6.3). The possible risks that donors may undergo during treatment and pregnancy must be mentioned. Specific information on the risks entailed when women are of advanced reproductive age must be provided for the recipients as well. On the website of the SEF (Sociedad Espanol de Ferdilidad) the various consent form and contracts are available.

One of the issues raised by counseling in Spain is related to cross border reproductive care. Since most reproductive treatment with donated eggs is performed on foreign patients (Castilla et al. 2009; De Mouzon et al. 2010), patients may not benefit from the best counseling support, whether in Spain or in their home country (Hunt 2013a, 2013b).

United Kingdom

The HFE Act requires that no reproductive treatment or donation of gametes should be undertaken without the recipient – alone or with the other intended partner (man or woman) – being offered the opportunity of counseling. Centers are not required to obtain the consent of the donor's partner or spouse but should encourage donors to seek their support (HFEA Code of Practice 3; HFEA Code of Practice 5). Egg donors must be provided with information about the following subjects: screening and the possibility of discovering an unsuspected condition; the procedure itself; legal parenthood; disclosure of identifying and non-identifying information; possibility of consent withdrawal (HFEA Code of Practice 11).

HFEA strongly recommends counseling to donor-conceived registered applicants, referring to donor-conceived children or other eligible persons wanting to access information about the donor. NICE guidelines (NICE 2004) recommend also that counseling to donor-conceived register applicants should be offered, ideally, by a professional independent of the treatment unit.

Written informed consent is required for the procurement, storage and use of gametes. If a person is deceased or unable to give informed consent, gametes or embryos should not be used unless an individual has specified what they wanted to be done with their gametes or embryos while they were still able to do so. The consent can be changed or withdrawn at any time before the gametes are used in treatment. It has to be noted that the egg donor has the possibility of withdrawing from donation process after the preparation for egg retrieval has begun without being financially charged (HFEA Code of Practice 11). The consent should include the number of families who can have children with donated gametes, if less than the legal limit, and specify the period of storage, if less than the statutory period of storage of ten years (HFEA Code of Practice 5).

In the case of the egg sharing program, two agreements are required by the HFEA. First, an agreement between the center and the gamete providers must describe in detail what is expected/offered in exchange for the donation. Secondly, an agreement between the center and the recipient must also be written. If the donor's consent is withdrawn after the preparation for the treatment has started, the center should bear financial losses (HFEA Code of Practice 12).

USA

ASRM Guidelines for gametes and embryo donation (ASRM and SART Practice Committees 2013b) recommend strongly that women or couples who apply for treatment with donated eggs, as well as egg donors and their partners, if applicable, should undergo psychological counseling by a mental health professional. In the case of suspicion of possible child abuse threatening the wellbeing of the future child, centers may require patients to see a counselor. In the

case of direct donation by a close relative, a psychological assessment and counseling are even more strongly recommended. The ASRM Ethics Committee (2013a) on "Informing offspring of their conception by gamete or embryo donation" also recommends that counseling and informed consent about disclosure should be crucial steps for the donor, as well as for the recipient. Arizona and New York States have started to try to standardize the provision of information by physicians (Silkern et al. 2013).

A.1.13 Impact of new technologies for oocyte cryopreservation

New technologies for oocyte cryopreservation constitute a turning point for egg donation practices. IVF with fresh oocytes was for a long time far more successful than IVF with stored oocytes and oocyte cryopreservation was performed only as a fertility preservation strategy for cancer patients with limited success rates due mainly to technical difficulties and the cellular structure of the oocyte itself (ASRM and SART Practice Committees 2013a; Cobo et al. 2013). However, the recent development of vitrification techniques whose success rates in reproductive treatment are similar to those with fresh oocytes and open up a wide range of new possible applications (ASRM and SART Practice Committees 2013a; Cobo et al. 2013). It is notably increasingly used as a new reproductive option by healthy women for the prevention of age-related infertility – they have their oocytes stored for later used for themselves (Lockwood 2011; ESHRE Task Force on Ethics and Law 2012; ASRM and SART Practice Committees 2013a; Cobo et al. 2013; Mertes 2013). It also provides new options for people who do not want to have their embryos cryopreserved for moral reasons or in case of failure to obtain sperm for IVF (Lucena et al. 2006; Dondorp and De Wert 2009).

In making the use of oocytes independent from the time and place of their retrieval, vitrification also opens up many new prospects regarding egg donation practices (ASRM and SART Practice Committees 2013). It could reduce the demand for egg donation, as more women would have their own oocytes containing their own genetic material preserved (Dondorp and De Wert

2009; Bellaisch-Allart et al. 2013). At the same time it could extend the number of oocytes available for donation by diversifying sources and modes of donation, for example with freeze-and-share programs (ESHRE Task Force on Ethics and Law 2012; Mertes et al. 2012). With the constitution of oocyte banks, there would be no cancellation rates of patients and the donor could be chosen among a larger number of donors without waiting for the perfect match (Cobo et al. 2011; Cobo et al. 2013). Additionally, for safety purposes, a quarantine could also be implemented, as it is already the case with sperm donation (Lucena et al. 2006; Cobo et al. 2011; Belaisch-Allart et al. 2013). Finally, the simplification of the synchronization procedure would render egg donation more affordable and economical and organizationally less demanding for donors and recipients (Lucena et al. 2006; Cobo 2011).

Because of the novelty of the procedure these significant changes are for the moment mostly prospective, and data are still scarce. Many questions such as who should pay for egg cryopreservation, what age would be most appropriate for freezing eggs from a cost-benefit perspective (Stoop 2010; Mertes and Pennings 2011; Mertes et al. 2012), and how to provide appropriate information about this option (Avraham et al. 2014) are still open. Studies about these questions are increasing. After reviewing the different situations in each country included in this report, it can be said that egg cryopreservation is only partially a legal problem; perhaps more compellingly, it raises ethical and societal debates and changes clinical practice.

Belgium

Scientific research exploring the ethical, psychological, and social dimensions of autocryopreservation is important in Belgium. The first study investigating the attitudes and intentions of women of reproductive age towards egg freezing possibilities for themselves (Stoop et al. 2011) was performed there. A questionnaire was completed by 1049 women between 21 and 40 exploring their fertility awareness, and attitudes towards autocryopreservation and reproductive treatment with donated eggs. Results show that 31.5 % women would consider themselves potential “social oocyte freezers” if the option was

available, 51.8% do not consider this option, and 16.7% have no opinion. The authors conclude that “oocyte freezing for women who are temporarily unable to enjoy motherhood, owing to their relational and professional situation, potentially has the same positive psychological effect [as for men who have banked their sperm] and may be crucial to preserving fertility for many women” (Stoop et al. 2011).

At the ESHRE conference, on July 9th 2013, another study was presented (Stoop et al. 2013). Drawing on telephonic questionnaires with 140 women having considered or performed egg freezing for Anticipated Gamete Exhaustion (AGE), it shows that a significant percentage of women who banked their eggs do not think that they will use them, but had a positive experience nevertheless, even if they would have preferred to have done it at a younger age. Women who considered egg banking and did not do it for various reasons would also have preferred to undergo treatment at a younger age.

Belgium based scholars, Heidi Mertes and Guido Pennings have written about the ethical stakes of elective oocyte cryopreservation (Mertes and Pennings 2011; Mertes et al. 2012; Mertes 2013; Pennings 2013). Mertes (2013) explores how women are portrayed in the debates on so-called social egg freezing. Observing that women turn to oocyte cryopreservation on average at the age of 38, which is rather high (Mertes et al. 2012), she deduces that women do not plan to postpone motherhood when they are young and that “[...] freezing oocytes is more an emergency intervention than part of a well designed life plan to “have it all” “ (Mertes 2013: 145). However this may change with increasing awareness of this reproductive option.

Finland

In the framework of this study no available literature has been found on autocryopreservation in Finland.

France

During the last revision of the laws on bioethics, René Frydman, “father” of the first French test-tube baby, proposed that women without children could also donate their oocytes. In exchange for their donation

and to prevent the risk that they might remain without children, they would be given the possibility to freeze part of their eggs for later use at the time of donation. This proposition was adopted and constitutes an important modification of the law, even if the implementing decree is still lacking, and entails that egg vitrification can be performed in clinics (Boyer et al. 2013). Before the last revision, vitrification was understood as research on an embryo and thus prohibited (Boyer et al. 2013). By providing a new reproductive option to healthy women for the prevention of age-related infertility – which is generally understood to be the result of social choices, rather than medical factors, like cancer – this new possibility challenges the medical exclusivity of access to ARTs and is highly debated.

In 2012, le Collège National des Gynécologues et Obstétriciens Français (CNGOF 2012) responded favorably to the idea of auto-cryostorage of oocytes for all women, as a way of preventing infertility and allowing the creation of oocyte banks. It states that vitrification allows an efficient treatment of infertility after 40 and allows couples to keep their genetic capital. However, the CNGOF asserts that information about decreases in age-related fertility and risks about late pregnancies for the mother and for the child should be distributed more broadly and systematically. Following this opinion the CCNE decided to open the debate on social uses of ARTs. On the contrary, CECOS (Fédération française des CECOS 2013) finds that the cost-benefit ratio is not convincing, that this procedure medicalizes reproduction excessively, and that it could promote late pregnancies. It concludes that autocryopreservation for all women is “not appropriate and premature”.

More generally, supporters of autocryopreservation argue that it should be considered a part of efforts to prevent infertility in general (Frydman quoted in Chabas 2013), that it could avoid the creation of surplus embryos, could prevent ineffective treatments with older oocytes and thus would have a better cost-benefit ratio. It would also have an impact on the demand-supply balance of donated eggs. In fact, women would much less need egg donation, and eggs that are not used would increase the stock of available

eggs for donation (Belaisch-Allart 2012; Bellaisch-Allart et al. 2013; Chabas 2013). Additionally, offering this option only to women who donate their eggs without having already had a child is considered unfair and goes against the principle of equity regarding health care (IGAS 2011). On the contrary allowing this possibility would increase equality with men who can already freeze their sperm for social reasons (CNGOF 2012; Belaisch-Allart 2012; Belaisch-Allart et al. 2013).

Critics of autocryopreservation argue mainly that it medicalizes reproduction, promotes late pregnancies and gives too much false hope to women (Fédération française des CECOS 2013). Questions about the appropriate time to store eggs – if they are stored too early, there is the risk that the eggs will be useless and if it is too late, that the eggs’ quality is bad, reducing the chances of success – or who should pay (Boyer et al 2012; Belaisch-Allart et al. 2013), still need answers and further research.

Spain

The advantages of oocyte cryopreservation were already being discussed as early as 2003 (Fosas et al. 2003). The idea is that an oocyte bank would make it easier for a specific couple to choose the most specific donor and that it would simplify the donation process. For safety purposes, it makes it possible to repeat the HIV blood test in the donor after the window period of viral infection has transpired, which is not possible with fresh oocytes. At that time, the only problem concerned the efficiency of this technique compared with fresh oocytes (Fosas et al. 2003). However, this difference is no longer relevant, as today both techniques lead to approximately the same success rates (Cobo et al. 2011; Cobo et al. 2013). The new law 14/2006 authorizes the cryopreservation of oocytes for reproductive purposes. The maximal period for freezing is not legally fixed (it had been 5 years) and is left to medical judgment (Ley 14/2006, art.11).

United Kingdom

Freeze-and-share programs have been developed at the London Bridge Fertility Gynecology and Genetics Centre which already performed egg sharing programs (Attala 2008; Mertes et al. 2012). Recently, another egg bank associated with the London Women’s Clinic

opened in London offering oocyte freezing and “freeze and share” programs (Beauchamp 2013). Working on the model of the sperm bank (Collins 2013), it aims at increasing the number of egg donors and would generate a stock of eggs, following which potential recipients could be matched to donors according a large range of characteristics without waiting. Donors are in their early twenties and recipients are around 42-44 (Collins 2013). Vitrification allows also the importation of frozen eggs from abroad to increase egg supply, as shown by an example where a clinic was granted permission to buy eggs from Russia (Hyder 2010).

USA

In the USA, as elsewhere, autocryopreservation is highly publicized as a form of “social egg freezing”. For example, women’s experiences narrating how they froze their eggs are spreading in magazines and the journalist Sarah Elizabeth Richard’s book “Motherhood rescheduled: the new frontier of egg freezing and the women who tried it” (2013) is publicly discussed. Some programs like “Extend Fertility” (Extend Fertility Website) are dedicated to this procedure. However, the ASRM guideline on “mature oocyte cryopreservation” (ASRM and SART Practice Committees 2013a) estimates that data on “ the safety, efficacy, cost-effectiveness and emotional risk of elective oocyte cryopreservation” are not sufficient to recommend oocyte freezing only to prevent age-related infertility. They especially criticize the false hope that could be given to women and fear that this technique would promote the postponement of childbearing. Above all, they recommend that special information should be given about the correlation between age and success rates.

A.2 Indicators for the regulations' outcomes

This chapter presents some indicators to assess the outcome of a regulation on egg donation. An indicator is defined as "a thing that indicates the state or level of something" (Oxford Dictionaries). There are two types of indicators: the first two indicators (A.2.2 and A.2.3) are standard factors used in registers, where data on ARTs such as the type, the number of cycles and their outcome are recorded. They were chosen to give an overview of the importance of ARTs activities and especially egg donation in each country. The following indicators (A.2.4, A.2.5 and A.2.6) are focused on the consequences of egg donation regulations. They are used to assess and compare the outcome of the studied egg donation regulations.

This part draws mainly on data stemming from registers. In order to situate the different registering policies of the studied country, a first section (A.2.1) is dedicated to a short presentation of the type of register used in each country. For comparative purposes, data presented in the ESHRE report (2008) and in the ESHRE Registers 2009 (Ferraretti et al. 2013) were chosen. When the difference between older and newer figures is significant, it is mentioned.

A.2.1 Types of registering

Registering ARTs activities and success rates provides a unique way of standardizing data and making them comparable. According to Luceno et al. (2010), registers describe the quality and quantity of ARTs. They usually include data on the success rates, along with data on the number of treatments, and general data about patients. Registering can be organized at different levels, such as by a national health authority, a national professional organization, or a healthcare insurance agency. Systems of data collection can vary, too, making comparison more difficult (Luceno et al. 2010). The degree of involvement – mandatory or voluntary – and coverage – total or partial – are also variable. In the literature, the risks of over-estimating good results when registering – in the sense that only clinics that achieve good results are inclined to report them, biasing the general results – is discussed (Bossler et al. 2009).

It has to be noted that registering ARTs data is required by the European Directive 2004/23/EC for safety and traceability purposes, leading EU-Member-States to revise or implement regulations on registering. It is important to keep in mind that the type of data demanded by the EU directive is only partly the same as the type of data ARTs professionals and clinics are collecting. Indeed, Directive prescriptions are aimed at traceability for safety reasons, while other registers, like ESHRE or FIVNAT, aims to assess efficiency and to provide a statistical overview of reproductive medicine activity.

Belgium

Six years after the birth of the first Belgian test-tube baby in 1983, the first registration of ARTs was implemented by the Belgian Register for Assisted Procreation (BELRAP), a "legally registered non-profit organization" (De Neubourg et al. 2013: 3), on a voluntary basis. In 1999, the College of Physicians in Reproductive Medicine was created with the mission of controlling the quality of services and of registering ARTs activities. Following the Royal Decree of 15/2/1999, registration became obligatory for all ARTs cycles (De Neubourg et al. 2013). According to De Neubourg et al. (2013) who study the history of the Belgian Register, "registration of ART in Belgium developed from a voluntary, retrospective gynecologist-based data collection system towards an obligatory, prospective, online, statistically oriented cycle data entry system" (De Neubourg et al. 2013: 2716). The EU tissue directive was implemented over the period 2004-2010 (De Neubourg et al. 2013).

Finland

The Act requires ARTs services providers to report information about their activities to the competent authorities (sect.26), in this case Valvira, the National Supervisory Authority for Welfare and Health. This authority is responsible for registering donations of gametes and licensing and controlling reproductive treatments. It is a centralized body working under the Ministry of Social Affairs and Health and is responsible for the Luoteri donation register. According to the website *Statistics Finland*, data are obtained from all the

ARTs service providers. Statistics on ARTs can be found only in Finnish.

France

In France, two agencies have successively been responsible for registering data. First, FIVNAT was created in 1986 by pioneers in the field to evaluate the developments of ARTs. Affiliated centers had to report data on each attempt, each embryo thawing, each pregnancy and each born child, annually. In 2006, following the revision of 2004, the Agence de Biomédecine (ABM) replaced the FIVNAT register and is currently responsible for the surveillance report at a national level. On their website they say that only the collection of individual data allows a deep analysis of success rates (ABM Website e).

Spain

Despite attempts to implement an ARTs register at a national level (Luceno et al. 2010), to date, a national register about ARTs and gamete donation is still lacking. As a consequence, for example, there is no control about the number of donations performed by a donor, each clinic having its own way of monitoring it (IGAS 2011). The *Sociedad Espanola de Fertilitdas* (SEF) is responsible for collecting data on ARTs, but it is very incomplete and no overall figures are available, because reporting is optional and only between 25% and 40% of the authorized clinics collaborate (Castilla et al. 2009). The only register which is obligatory is the Fivcat.net register implemented in Catalonia. Additionally, there is a problem of standardization between the SEF register and the Fivcat.net register. The first one collects data per clinic, while the latter collects data per cycle. Interestingly, the study of Luceno et al. (2010) shows that the clinics that do not contribute on a voluntary basis to an ARTs register are the clinics that perform high numbers of donor egg treatments.

UK

The Act implemented in 1990 required the HFE Authority to register information and keep a database on ARTs services and treatments in the UK. Since that time, data reporting has been obligatory for ARTs licensed services providers (HFEA Website a and b). It has allowed this country to monitor ARTs activities

since very early in their use, enabling practitioners to adapt their behaviors continually based on scientific data. Data are collected per cycle performed. Statistics can be found on their website (HFEA Website a and b; HFEA 2011a).

USA

In the USA, a federal act was passed in 1992, mandating that fertility clinics report data on success rates to the Centers for Disease Control and Prevention (CDC). To do so, the CDC collaborates with the two main professional associations, the American Society for Reproductive Medicine (ASRM) and the Society for Assisted Reproductive Technology (SART). Statistics are published annually and can be found on the CDC website.

A.2.2 Clinics number / number of treatment cycles

The number of clinics and the number of cycles performed annually are standard collected data. They provide information about the importance of ARTs activities in general, and not specifically of reproductive treatment using donated eggs. The following numbers are taken from the 2009 results from European registers by ESHRE presenting data from 34 of 47 countries (Ferraretti et al. 2013). Treatment cycles include IVF, ICSI (Intracytoplasmic Sperm Injection), FER (Frozen Embryo Replacement), ED (Egg Donation), IVM (In Vitro Maturation), PGD (Preimplantation Genetic Diagnosis), FOR (Frozen Oocyte Replacement).

In this section, the proportion of egg donation cycles to the overall number of treatment cycles will also be specified. An upward trend can be observed, as the number of egg donation cycles reported by 22 countries in 2009 was 21,604; that is, 7,995 more than in 2008 (Ferraretti et al. 2013). As data on USA are not included in the ESHRE report examining only the European situation, numbers from 2010 are used for this country. Three graphs are included after the presentation of data in order to give a clearer overview of the numbers.

Belgium

According to ESHRE Registers 2009 (Ferraretti et al. 2013), there are 18 public clinics – all of them reporting – providing a total of 27,674 treatment cycles/year, including 1463 ED cycles. A sharp increase in egg donation has been observed, with 60 donations performed in 1990, 450 in 2001, and 552 in 2003 (IGAS 2011). However, drawing on the study of Belgian registers, De Neubourg et al. (2013) find that oocyte donation remains a marginal activity, representing only 4.4% of egg retrieval cycles and the Conseil Supérieur de la Santé (CSS 2010) even observed a recent decrease in the number of egg donation procedures.

Finland

According to ESHRE Registers 2009 (Ferraretti et al. 2013), there are 19 public and private clinics – all of them reporting – providing a total of 8637 cycles/year, including 404 egg donation cycles.

France

According to ESHRE Registers 2009 (Ferraretti et al. 2013), there are 106 clinics – all of them reporting – providing a total of 74,475 cycles/year, including 641 egg donation cycles. The monopoly is in the hands of public centers (IGAS 2011). The IGAS report (2011) states that in 2008 145 children were conceived and born through 265 egg donation cycles, which corresponds to 2.4% of all births through ARTs in France. It also observes that since 2004 there has been an increase in egg donation cycles, while other ARTs remain stable.

Spain

According to ESHRE Registers 2009 (Ferraretti et al. 2013), there are 166 clinics – 109 of them reporting – providing a total of 54,266 cycles/year, including 10,982 egg donation cycles. 80 to 90% of the clinics are private centers (IGAS 2011). The IGAS report (2011) estimates that there are more than 7000 donations yearly. In 2007, 7295 egg donations were listed, but they say that this number is probably a great underestimation. According to Luceno et al. (2010) data from voluntary register on egg donation are not reliable because reporting is not mandatory. They

calculate that in 2005, a total of 17,279 egg donor cycles were performed out of 37,279 total IVF cycles, making Spain the third ranking country in Europe for IVF cycles and the first European country to perform treatments with donated eggs (Luceno et al. 2010).

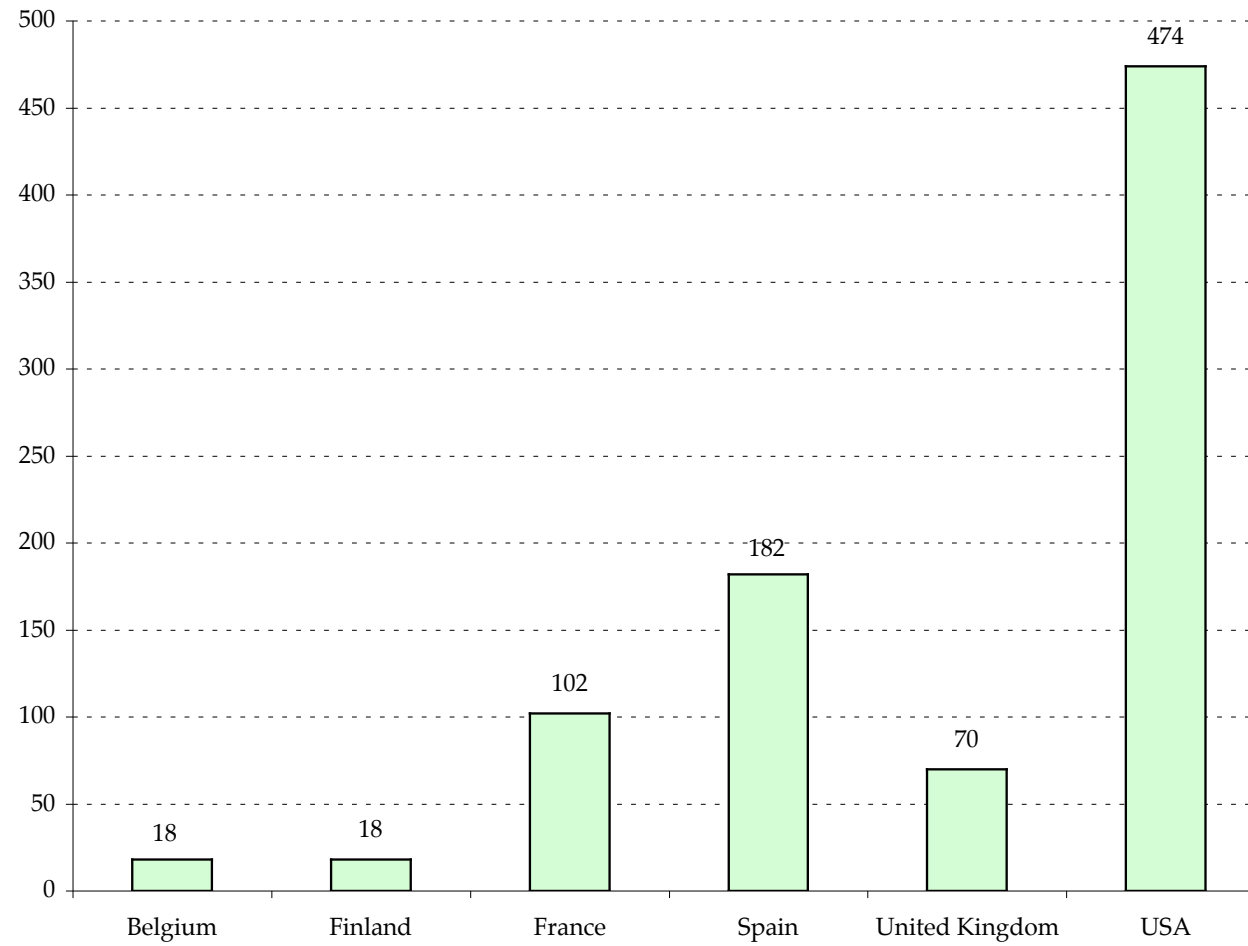
United Kingdom

According to ESHRE Registers 2009 (Ferraretti et al. 2013), there are 70 clinics – all of them reporting – providing 44,314 cycles/year, including 1737 ED cycles. According to HFEA report 2011, the number of IVF cycles performed each year has increased steadily since 1991. They also state that about 450 babies are born each year in the UK from donated eggs.

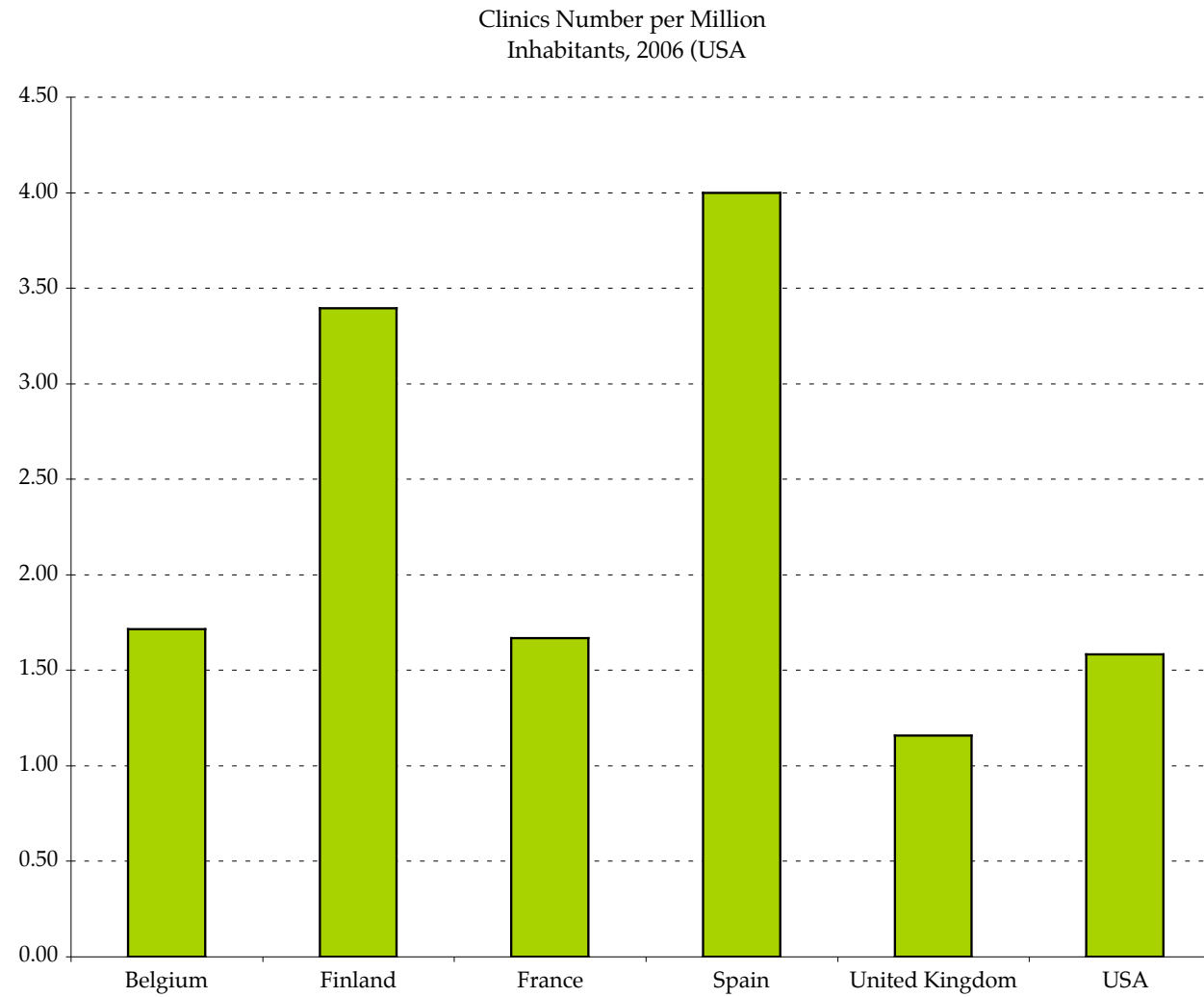
USA

In 2010, the National Report counts 474 clinics, including 443 reporting clinics, performing 147,260 cycles/year (CDC 2010).

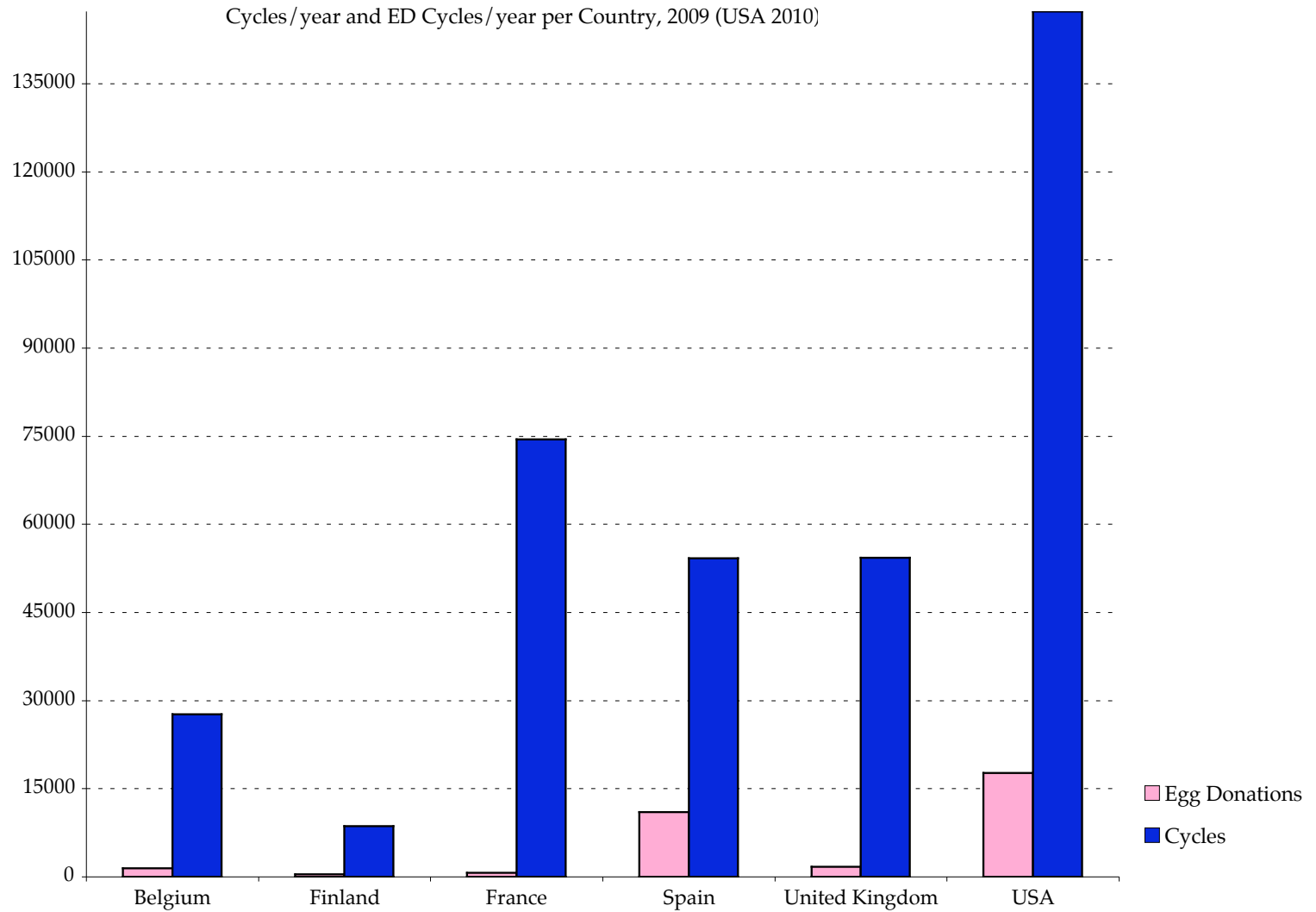
Clinics Number per Country



⁸ Sources: ESHRE 2008 (data from year 2006)



⁹ Sources: ESHRE 2008; USA (online: http://www.census.gov/popest/data/historical/2000s/vintage_2006/index.html – access 18.07.2014)



¹⁰ Sources: Ferraretti et al. 2013 and CDC 2010 for USA.

A.2.3 Treatment cycles per million (CPM) inhabitants and women of reproductive age

The number of treatment cycles per million inhabitants (CPM) is one way to quantify the importance of ARTs in a given society. In order to have more representative figures, the measure of cycles per million women of reproductive age (by convention between 15 and 45) is also used¹¹. Two graphs summing up the presented data are included at the end of this section.

Belgium

According to ESHRE (2008), in 2006 2177.5 CPM were performed, meaning 9400 CPM women between 15 and 45 years. ESHRE data of 2009 (Ferraretti et al. 2013) indicate that 2574 CPM were performed, meaning 13,173 CPM women between 15 and 45 years. On average there is one center for 500,000 inhabitants, while the worldwide average is one center for 700,000 inhabitants (Schiffino et al. 2009).

Finland

According to the ESHRE final report (2008), in 2006, 1655.5 CPM were performed, meaning 7005 CPM women between 15 and 45 years. In 2009, 1645 CPM, meaning 8967 CPM women between 15 and 45 years (Ferraretti et al. 2013).

France

According to the ESHRE final report (2008), there were 1086.7 CPM, equivalent to 4,400 CPM women between 15 and 45 years. In 2009, there were 1153 CPM and 6022 CPM women between 15 and 45 years (Ferraretti et al. 2013).

Spain

According to the ESHRE final report (2008), there were 1106.3 CPM, meaning 5000 women between 15 and 45 years. In 2010, the fivcat.net (specific to Catalonia) reports that there are 1900 CPM, which is triple the number of cycles in 2001.

United Kingdom

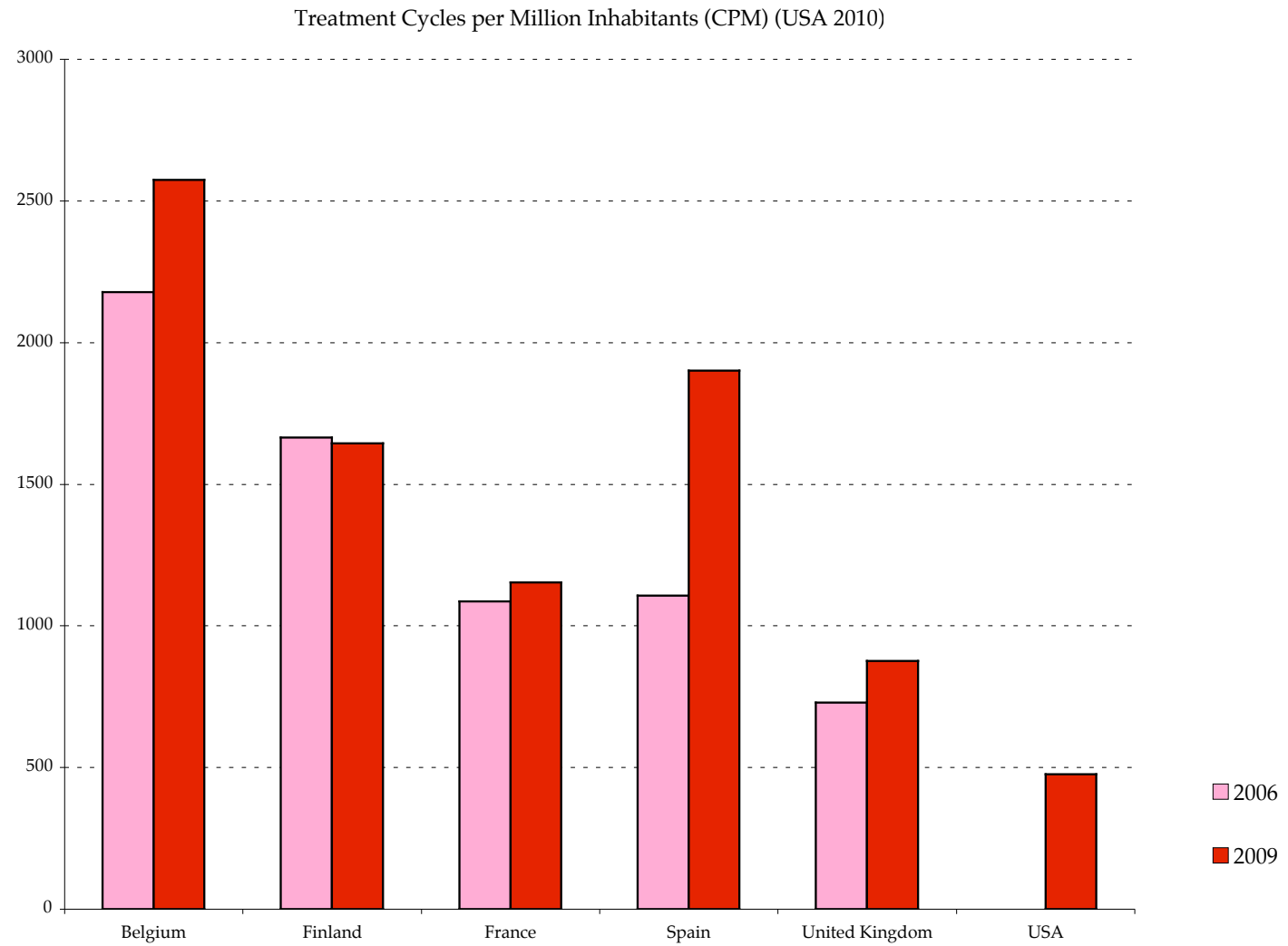
According to the ESHRE final report (2008), 728.9 CPM were performed in 2006, meaning 3000 women between 15 and 45 years. In 2009, there were 876 CPM, corresponding to 4386 CPM women between 15 and 45 years (Ferraretti et al. 2013).

USA

The National Summary Report on ARTs (CDC 2010) do not use CPM and CPM women of reproductive age measures. In 2010, 147,260 cycles were reported for a population of 308,745,538 habitants, meaning 476,962 CPM. Since the repartition of ARTs clinics has been geographically very unequal – the greatest number being on the East and West coasts and in big cities – it would be more significant to calculate this ratio for specific states.

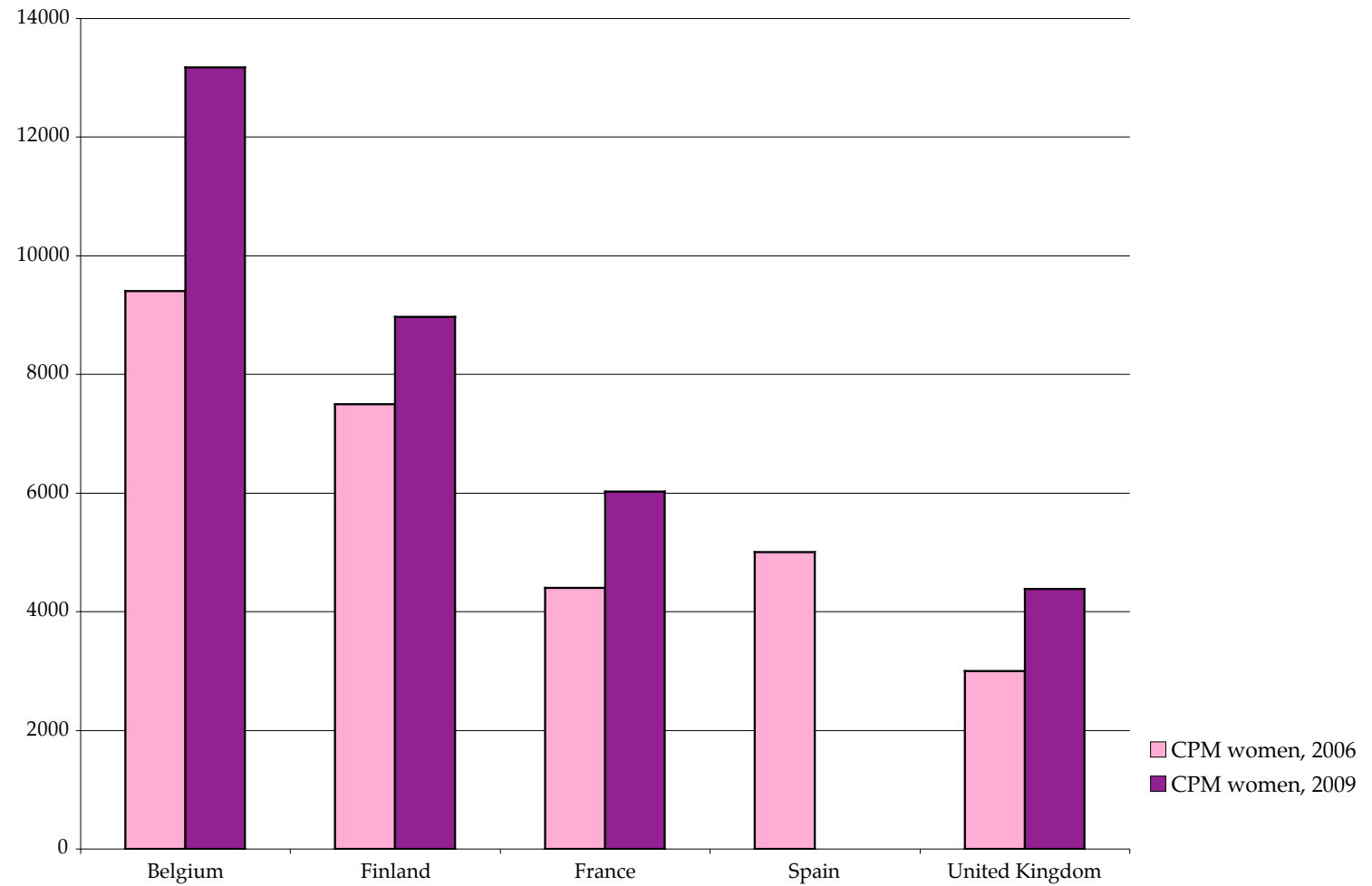
¹¹Data from Ferraretti et al. (2013) are in CPM (cycle per million) women between 15 and 45 years. Data from ESHRE (2008) are in cycles per thousand females of reproductive age. For the sake of clarity, only "cycle per million (CPM) women between 15 and 45 years" is used.

Graph 4¹²



¹² Sources: ESHRE 2008; Ferraretti et al. 2013; CDC 2010

Cycles per million women of reproductive age, 2006, 2009 (no data for Spain 2009, no data for USA)



¹³ Sources: ESHRE 2008; Ferraretti et al. 2013

A.2.4 Waiting lists for treatment with donated eggs

The waiting time for treatments with donated eggs is significant as an indicator, in the sense that it allows us to estimate the difference between the theoretical accessibility of the procedure and the supply/demand ratio. Long waiting times are generally correlated to several factors, the main one being the difficulty in recruiting donors, along with administrative and institutional hurdles.

Belgium

There are waiting lists for treatment with donated eggs in Belgium. By way of example, on the website of the CHIREC website, it is indicated that the waiting time for sperm donation is from 3 to 15 months depending on one's sexuality (heterosexual couples with male infertility having priority) and on whether or not the couple brings a sperm donor to increase the pool, which shortens the waiting time. It is much longer for IVF with donated eggs because of the lack of donors.

Finland

According to a presentation given by Viveca Söderström-Antilla (2010), the waiting time for egg donation can vary between four and 24 months.

France

According to the IGAS report (2011), 1500 to 1600 couples are waiting for egg donation in France. They estimate the real demand between 1500 and 6000 couples. Waiting time ranges between 12 months to 5 years. The wait is especially long for people with specific phenotypical characteristics. Bringing a donor oneself shortens one's waiting time by two (about 24 months) but is against the spirit of the law, which states that access to egg donation should not be conditioned by whether one can offer a donor. These numbers indicate that there is a wide gap between supply and demand, explaining the increasing search for cross border reproductive care.

Spain

The situation in Spain is characterized by a very short wait time in private centers, which is a good

advertisement for them, and shows that they are able to find enough donors (IGAS 2011).

United Kingdom

According to the National Gamete Donation Trust, people can wait for several years (typically ranging from three to five) before accessing egg donation treatment (Sargent 2007). As in France, if couples or women bring their "own" donors, their place on the waiting lists moves up. According to the HFEA factsheet, "Changing Landscape" (HFEA 2011d), the number of sperm and egg donors has increased since 2005, when the law removing anonymity was passed, but in spite of this increase, the number of people receiving treatment has decreased and the demand for eggs continues to exceed the supply. It is especially hard for people from ethnic minorities with specific phenotypical features. Long waiting times are presented as one of the main reason why people seek treatment abroad (HFEA 2011d). However, recent data show that since the implementation of financial compensation of 750£ in 2012, many more voluntary donors have been attracted, and waiting lists have been drastically reduced. In general, reproductive clinics seem to cover the demand for reproductive treatment with donated eggs (Mericks 2014).

USA

Waiting time is rather short in the US. By way of example, the Reproductive Science Center of the Bay Area in California (Website) reports that the typical waiting time was between 3 to 6 months or more, which includes the time needed to find a donor matching the characteristics of the recipients and to synchronize their cycles. But with the development of vitrification, a large supply of eggs can be available for immediate use, which has reduced waiting times drastically.

A.2.5 Cross border reproductive care

"Cross border reproductive care" (CBRC) is currently the most widely accepted term to designate the "cross-border movements made by patients to obtain fertility treatment they cannot obtain at home" (Pennings et al. 2009). The choice of this terminology aims at avoiding the moral judgment associated with "reproductive

tourism", and at stressing the fact that people may travel for treatment out of necessity and not for pleasure, like, for example, people who pursue treatment while on holiday (Shenfield et al. 2010). While it is neither a new phenomenon, nor a product of the Internet (Bergman quoted in Forman 2011), this phenomenon has nevertheless gained in importance and visibility in recent years.

CBRC raises many ethical issues such as law evasion and the possible dilemmas it entails for professionals working in their home country, as well as equity, equal access to medical treatment, recruitment conditions, compensation and the welfare of the donors, collaboration between countries, data transparency, informed consent, psychological counseling, movements between poorer and richer countries, safety issues, professional responsibilities and the market dimension of this "industry" (Pennings 2004; Thorn and Dille 2010; Shenfield et al. 2010; Blyth et al. 2011a; Forman 2011; Inhorn 2011).

To address these issues, a taskforce was created by ESHRE, which recently published a "good practice guide for CBRC for centers and practitioners" (Shenfield 2011; Shenfield et al. 2011). They recognize that ideally all patients should be able to access ARTs treatment fairly in their home country, but since this is not possible, they state that CBRC "enhances the patient's autonomy". Additionally, it meets the European Directive of 2008 defending the "principle of freedom of movement of patients within Europe" (Shenfield et al. 2011: 1625). The good practice guide asserts four principles: 1) equity between national and foreign recipients and donors regarding protocols, fees, information, counseling, compensation, prices; 2) quality, safety and evidence-based care in cross-border treatment, meaning that clinics should provide services meeting the standard of quality and safety required by ESHRE and avoid the use of intermediate agencies; 3) patient involvement, including special care, to be sure that foreign patients understand everything; 4) redress, meaning that "the clinic should provide the name of their ombudsman or the person to whom complaints should be addressed" (Shenfield et al. 2011: 1627).

In the literature, there is a common agreement about the crucial lack of empirical data on the complex and multiple dimension of this phenomenon (ESHRE 2008; Pennings et al. 2009; Thorn and Dill 2010; Shenfield et al. 2010; Hudson et al. 2011; Inhorn 2011). In Europe, the first study to bring empirical data on CBRC at an European level, is the study of Shenfield et al. (2010) examining data coming from 46 ARTs centers in 6 countries, selected because they are popular destinations for CBRC. They estimate that around 24,000 to 30,000 cycles are performed abroad annually at a minimum and that there are about 11,000 to 14,000 patients traveling for reproductive purposes each year. At a socio-demographic level, 57.9% of women and 53.3% of partners had a university degree and 29.3% women and 31.7 partners had secondary education. The mean age was 37.3 years (range 21-51 years) and the proportion of women aged 40 or over was 34.9%. Reasons for crossing borders are various, but the mains reasons in Europe are law evasion, limited access at home including long waiting lists and ineligibility to meet access criteria, the search for a better quality of care or cheaper treatment, and previous failures (Shenfield et al. 2011).

Belgium

The permissive policy framework of Belgium attracts numerous people from abroad (ESHRE 2008; Pennings et al. 2009). Pennings et al. (2009) published one of the few studies providing empirical data on the inflow of foreign patients for reproductive treatment, drawing on data reported by 16 centers. They indicate that the BELRAP report 1998-1999 reported that among 418 egg donation cycles, 61% were performed for non-Belgian patients and in 1999 this proportion reached 75.2%. After that year, the distinction between foreign and national patients was not included in the report any more, but the authors show that in 2003, 1456 patients came from abroad, and in 2007, 2117, mainly from neighbor countries like France (38%), Netherlands (23%), Italy (12%), and Germany (10%). Since 2006, they observe a stabilization of the inflow of patients and a steady decline in egg donation treatments, from 287 cycles in 2003 to 188 in 2007. They also observe that foreign patients especially visit a few number of clinics specializing in specific types of treatments. More in detail, five clinics mentioned that foreign patients were

expected to bring their own egg donor, which is no different from national patients, because of the general lack of donors. Three clinics limited the proportion of foreign patients and 10 clinics requested them to pay for their treatment in advance. 14 to 16 clinics had interpreters if needed. 14 centers collaborated with the centers in the patient's home country. 10 centers had a website in English or another foreign language and 3 of them provided information about travel, visa, hotels etc. Advertisement on international websites was very limited. The two main reasons for searching CBRC were a legal prohibition in the home country and ineligibility to meet access criteria.

Finland

Finland does not seem to be an important destination for CBRC. For example, only one clinic (Graviditas Website) is listed on the Finlandcare website, intended for foreign patients. Many patients go abroad – mainly to Estonia, the US (mostly California), Russia and Baltic countries, because of long waiting lists and a shortage of donors, as well as because of the mandated non-anonymity of donors (Anonymous 2009b). The AVA clinics network, for example, whose first clinic was opened in Finland, seems to extend to Russia (AVA-Peter Clinic Website), Azerbidjan (AVA Skandianaviya, Finland-Azerbaijan, Clinic Website) and other Baltic states. This kind of clinic network probably facilitates CBRC for Finnish patients.

France

The IGAS report (2011) estimates that due to the lack of egg donors and long waiting lists, 1800 to 3600 French couples turn to egg donation abroad yearly, mainly in Spain (70 to 80%). Since women who do not conform to eligibility criteria for reproductive treatment – single and lesbian women or women aged 43 or over – are excluded from these numbers, it is only an approximation. They observe a strong increase in the demand for egg donation abroad, which was multiplied by 15 in less than 5 years. They point to two problems. One is the problem of financial accessibility, as lodging and travel costs are added to already burdensome treatment costs, this option is reserved for richer patients, even if in 2006, 400 couples received a partial reimbursement for their foreign treatment. The other problem is that the demand for egg donation can

only be met abroad, and against the spirit of the French law.

According to the ESHRE report (2008), legal reasons are predominant for patients coming from France (64,5%). The other reasons are difficulty in access (12,1%), search for better quality (20,6%), previous failure (18,7%).

Spain

Spain is a leader in ART treatments with donated eggs and is the main European destination for patients who cannot access such treatments in a satisfactory way or at all in their home country (Castilla et al. 2009). Spain is currently carrying out half of the treatments in Europe (De Mouzon et al. 2010). According to Ferraretti et al. (2013), 63% of the foreign patients come from Italy, 16% from France, 11% from Germany, 4% from UK and 6% from others. In Catalonia, in 2005, around 4000 IVF cycles and 10'000 donor egg cycles were performed for foreign patients (Luceno et al. 2010). The main reason reported by foreign patients was legal prohibition in their home country (Ferraretti et al. 2013).

United Kingdom

Despite liberal regulations, numerous people go abroad to access reproductive treatment. Culley et al. (2011) and Hudson et al. (2011) study the motivations and experiences of UK residents traveling abroad to access reproductive treatment. The four most commonly mentioned reasons are: 1) donor shortage in the UK, 2) cost, 3) perception of better success rates abroad, 4) unsatisfactory quality of care in the UK. The main destinations for egg donation are Spain, Czech Republic, Ukraine, Greece, South Africa, Cyprus, Russia and USA. At a socio-demographic level, people seeking treatment are predominantly from professional or managerial backgrounds, which reflects the need for sufficient economic resources to undertake cross-border fertility treatment. They also chiefly use the Internet to search for information about treatment options. The mean age of women was 38.8 years. They also found that an increasing number of clinics collaborate with foreign clinics and offer shared care arrangements.

USA

The USA is mainly a destination country for CBRC, but also, more marginally, a departure country. A study conducted by Hugues and DeJean (2010) examining the scope and volume of CBRC in Canada and US found that 80% of Canadian women and couples searching reproductive treatment abroad came to the US for anonymous IVF with donated eggs, while India and Asia are the main destination countries for American women and couples. They estimate that on average, 4% of the total US ARTs activity is performed for foreign patients (Hugues and DeJean 2010). For comparison, in Europe about 5% of all ARTs care concerns CBRC (ASRM Ethics Committee 2013b). The main groups of CBRC patients come from Latin America (39%) and Europe (25%) (ASRM Ethics Committee 2013b). The reasons for traveling can be classified in four basic categories: 1) access, 2) costs, 3) regulation, 4) privacy (ASRM Ethics Committee 2013b). The recommendations of the ASRM Ethics Committee focus mainly on the duties and responsibilities of professionals, and especially on the kind of information they should provide.

A.2.6 Increase in the age of motherhood

Maximum age restrictions for women is a factor limiting access in all EU countries (ESHRE 2008). The increase in the age of motherhood can be an indicator of women turning to egg donation abroad. Despite controversies surrounding post-menopausal pregnancies, the ESHRE report (2008) found that in Europe no woman turning to CBRC was over 51. The proportion of women aged 40 or more was 34.9% of all patients.

Belgium

The mean age of fresh donor egg recipient cycles is 37.3 years (Belrap 2012 – cycles 2010). According to the statistics from 2009 (Economie, Statistics Belgium), for a total of 127,198 births including Belgian and non-Belgian mothers, there are 689 births from women aged 43 or over, and 181 aged 45 or over. Only 6 births from women over 49 are registered. By way of comparison, in 1998, among a total of 114,259 births, 305 were from women aged 43 or over, including 72 from women aged 45 or over.

Finland

Statistics from Finland show that there is a small increase in the mother's mean age by first live birth, from 27.9 years in 2003, to 28.5 years in 2012. More specific information about maternal age was not found.

France

As in other countries, a steady increase in the age of motherhood has been observed since 1960 (Aerts 2013), including higher fertility rates in women aged 35-39 and 40-44 (Leridon 2008). According to Leridon (2008), since egg donation is very rare in France, ARTs will not contribute to an increase in the age of motherhood. According to the ESHRE report (2008), the proportion of French women seeking CBRC aged 40 or over was 30.2% and the mean age was 36.6 +/- 5.8 years. It should be noted that women over 43 are not included in this data.

Spain

According to the Fivcat.net register (2010) specific to Catalonia, 77.8% of egg recipients are more than 34. Half of the children conceived this way were born abroad (49.5%) and 45.2% live abroad. Among the recipients, in the context of CBRC, there has been an increase in recipients over the age of 39, largely due to non-residents seeking treatment in Catalonia. The *Instituto Nacionala Estadistica* reports that in 2012 there were 6.40 births per thousand women aged 43, 3.88 per thousand women aged 44, 2.14 for women aged 45, 1.17 for women aged 46, 0.55 for women aged 47, 0.33 for women aged 48, and 0.63 for women aged 49 and over, including Spanish and non-Spanish women. To compare, in 1998, 2.43 births for women aged 43 were reported, 0.61 for women aged 45, and 0.07 for women aged 49 and over.

United Kingdom

The ESHRE report (2008) found that the proportion of women turning to CBRC aged 40 or over was 63.5%. The HFEA review of egg and sperm donation (HFEA 2011d) reports that the mean age of women undergoing reproductive treatment has increased since 1991, from 31.9 years to 35.1 years in 2007. They also report that during the last decade, the number of

women giving birth at age 35 or over has increased by a third, from 15% in 99 to 20% in 2009. The Office for National Statistics reports that in 2010 out of 723,165 live births, 27,731 were from women aged 40 or over. By way of comparison, in 1998 out of 635,901 live births, 13,555 were from women aged 40 or over.

USA

The US statistics report births by maternal age: in 2009, there were 105,813 live births for women aged 40-44 and 7,934 for women aged 45-49, out of a total of 4,121,019. By way of comparison, in 1998, there were 81,027 live births for women aged 40-44, and 3782 for women aged 45-49, out of a total of 3,941,553. The ART National Summary Report (CDC 2010) states that 10.2% of women using ART are aged 41-42, 5.7% are aged 43-44 and 4.6% are 44 or over. 37% of women aged 43-44 and 73% of women aged 44 or older used donor eggs.

A.3 Characterization of countries' profiles

The goal of this chapter is to provide a synthetic characterization of each country's regulation on egg donation and IVF with donated eggs. A characterization is a "description of characteristics or essential features; portrayal in words" (Oxford English Dictionary). Reviewing factors and indicators presented in chapters A.1. and A.2., it offers a reading per country instead of per individual factor or indicator. In order to put data in perspective, current and/or specific debates are integrated, as elements revealing the specific features of each regulation.

A.3.1 Belgium: individual autonomy and contractual processes in the making of parents

From its beginnings in the 1970s until very recently, ARTs were not legally regulated in Belgium. This permissive context allowed Belgium to become one of the leading countries in scientific research and treatments with ARTs. This has also made it one of the main destinations for people seeking cross border reproductive care. During this period, ARTs practices were self-regulated by medical and ethical organizations at different levels, and for the most part these entities did not want to lose their high level of autonomy (Schiffino et al. 2009). Due to its lack of legal regulation, the situation in Belgium was described at the time as a "legal void" or a "bioethical paradise" (Schiffino and Varone, 2004).

The regulation of ARTs can be described as liberal and respectful of the autonomy of persons. Importance is given to the equality between persons and couples and to contractual processes demonstrating the intentionality of prospective parents through the notion of "authors of the parental project". Theoretically, many options are given to recipients and donors can be recruited to a large variety of means. Additionally, a high degree of autonomy is left to the physicians practicing reproductive medicine. In spite of liberal access, however, the coverage of recipients' treatments through social security is high. Like in many other countries, in practice the situation is characterized by difficulties in recruiting egg donors,

meaning that recipients have to bring their own donor to shorten their waiting time.

A.3.2 Finland: equality of treatment and donor's rights

After two decades of debate, Finland was the last Nordic country to implement legal regulations on assisted reproductive technologies. Due to its lack of regulations, Finland previously had one of the most liberal and permissive ART policies offering cutting edge ART services (Nordic Committee on Bioethics 2006). Seven years after the birth of the first Finnish test-tube baby, an oocyte donation program started in 1991 at the Family Federation of Finland, Helsinki clinic (Söderström-Anttilla 2010). Since 1980, several bills were proposed to introduce legislation. For the most part, physicians were against regulation and reproductive treatments were regulated by general health care legislation and professional ethics codes (Burrell 2012). The debates focused mainly on three points: the anonymity of donors and the right of donor-conceived children to learn the donor's identity, the access of single women and lesbian couples to ARTs and surrogacy (Nordic Committee on Bioethics 2006; Burrell 2012). The Act on assisted fertility treatment (1237/2006) entered into force in September 2007. It prohibits surrogacy but allows egg, sperm and embryo donation, as well as the use of donated sperm and donated eggs for couples and single women alike.

An evaluation of the Act four years after its implementation was performed by Burrell (2012) at Valvira. The author states that most problems concern the donation of gametes and embryos, access to ARTs for single women and lesbian couples, and the problem of anonymously donated gametes from before the passage of the Act. However – according to Valvira – the Act generally has worked rather efficiently.

The regulation of egg donation and IVF with donated eggs can be described as favoring equality and donor's rights. Great importance is given to the protection of the interests and rights of donor-conceived offspring, and to the protection of the interests and rights of gamete donors. For example, the right not to procreate for donors is as important as the right to procreate. It

means that donors maintain control over the use of their gametes until the last moment before the implantation of embryos derived from their gametes. Until then, they can withdraw their consent at any moment. Like other countries, they do not have enough egg donors.

A.3.3 France: the limits of altruism

Egg donation has been practiced since 1987 (Sacoun 2010) and relies on the principles of anonymity, altruism, and voluntary basis. The spirit of the law, which aims at protecting human dignity from commercialization and restricting the use of ARTs to heterosexual couples medically diagnosed with infertility is still valid, making France one of the most restrictive countries among those which allow egg donation (IGAS 2011). However, it is also supportive of reproductive medicine in the sense that its coverage by social security is very generous and that public centers are predominant.

Even if egg donation is authorized, the important lack of egg donors shows that an overly narrow application of the altruism principle does not lead to meeting the demand for fertility treatments with donated eggs. Rather, it necessitates CBRC, as well as donor recruitment undertaken by the recipients themselves, a situation which is not envisaged by the law. The "reproductive tourism" entailed by the restrictive legal framework and especially the severe lack of oocyte donors is much debated. Couples going abroad often do so to access treatments that do not respect the spirit of the French law, but most often they have doctors' support and receive partial reimbursement by social security. This phenomenon raises questions of equity, since only couples rich enough to afford to go abroad can access egg donation, while others must wait in France. Debates focus on how to recruit more egg donors without abandoning the principle of altruism. The choice seems to be to improve donor recruitment by awareness-raising campaigns and by alleviating the burden of the donation trajectory from the donor's side.

In 2011, a revision of the existing law on bioethics – still awaiting the implementation decree – proposed some changes – in particular, permission to

cryopreserve one's own eggs in exchange for donation and the removal of the obligation of having previously given birth – and has raised debates about the so-called "social uses" of ARTs, as opposed to medical uses. Discussion on the "social" or elective uses of ARTs is inscribed in broader public debates about the marriage equality ("marriage pour tous") and the rights of homosexual couples to access ARTs. Some questions remain open and are debated. They include the right of single and lesbian women to access ARTs, surrogacy, double donation (i.e. the use of donated sperm and oocytes at the same time), transparency between donors and donor-conceived people, as well as the auto-cryostorage of oocytes, which are all currently forbidden.

A.3.4 Spain: a platform for egg donation "tourism"

The first law (law 35/88) was adopted in 1988 and allowed controlled activity in the field (Veiga 2006). It emphasized informed consent and anonymity (Melo-Martin 2009). The regulation on ARTs can be described as liberal and stressing equality among women independent of their sexual orientation or civil status. The high supply of donated eggs along with liberal access are part of what make Spain the main destination for egg donation in Europe. Three topics are debated: 1) anonymity and payment of donors, 2) creation of a national donor registry, and 3) the welfare of donor-conceived children not able to access their genetic origins (Garcia-Ruiz and Guerra-Diaz 2012). In particular, the lack of official registration of genetic heritage can be problematic for donors and donor-conceived children.

The situation in Spain is characterized by a climate of competition between private centers/clinics and by aggressive advertisement strategies. The liberal character of the Spanish regulation and their high number of donors make this country one of the main destination for women needing IVF with donated eggs. Most treatments with donated eggs are performed in private centers entailing a kind of two-tier medicine, one performed in public centers for Spanish residents which is more restrictive in terms of age, and the other performed in private centers which are less restrictive

in terms of age and specifically target the treatment of foreign women.

A.3.5 United Kingdom: a pioneer country where the public has its say

In Europe, the UK is a pioneer country leading ARTs and cutting edge research involving human gametes. The UK regulation is characterized by liberal and equal access. However in practice inequality of access prevails. While ARTs treatments should be covered by NHS, 85% of patients pay IVF out of pocket (Culley et al. 2011). Like in other countries, the availability of donated eggs does not meet demand. This entails long waiting lists and forces recipients to either find a donor in their private circles or to go to clinics abroad. However, recent data show that the implementation of financial compensation of 750£ has attracted many more voluntary donors. Waiting lists have been reduced drastically and reproductive clinics seem to cover the demand for reproductive treatment with donated eggs (Merricks 2014).

The UK situation is also characterized by a great emphasis on non-anonymity and the sharing of information, not only between children and donors, but also including genetically related siblings and recipient parents. It is partly due to a very active group of parents of donor-conceived children, the Donor Conception Network, which was created in 1993 (Merricks 2014). In a democratic way, it gives impressive importance to what the population thinks about ARTs, like the public survey "Have your say" shows.

A.3.6 USA: privacy, reproductive liberty, and ability to pay

The US situation is characterized by a lack of federal legal regulation on ARTs. Even though the guidelines of the ASRM are well developed, clinics have no legal obligation to implement them. A high degree of autonomy is left to clinics/centers and to individual people. The rights of privacy and reproductive liberty are protected constitutionally and ARTs are centered on the individual's demands, much like the model of the free market governing any consumer oriented

service. Contrary to the majority of European countries, the availability of eggs is not a limiting factor for egg donation treatment. This is due mainly to the high prices offered to donors. While this system grants individuals lots of autonomy, it also reflects broader social inequalities.

B. Challenges in relation to donating and using human eggs

Egg donation and IVF with donated eggs raise complicated issues concerning family, gender, infertility, economics and ethics. The first part (A) of this report presented an overview of a selection of regulations on egg donation and allowed us to highlight the diversity of responses to these various issues. The goal of the second part (B) is to identify a select group of basic issues each country regulating egg donation has to face and to discuss the kinds of strategies implemented to address it. The two “basic issues” selected were chosen with regard to the Swiss situation. It was decided not to take into account the questions of anonymity and disclosure, which are already well covered in the framework of sperm donation and are not likely to change fundamentally in the future. Instead, it was decided to discuss the lack of donors and consequent insufficient supply in oocytes and the question of access to IVF with donated eggs, both questions at the core of egg donation practices and regulations. These two issues will be examined in light of social science literature on these topics. Grand principles will be tackled more than the practical details of each issues, as in Part A, the goal being to nourish the discussion by bringing a social science perspective rather than giving a thorough description of each aspect.

B.1 Lacking donors, lacking eggs

B.1.1 Oocytes as scarce resource

Eggs are priceless – they contribute to the creation of new unique human beings and families – and at the same time they are intensely commercialized and the objects of multiple transactions (Thompson 2005). They are full of promises and contradictions. Hidden in the body, their value changes once extracted. They become “transferable objects” or “ex-vivo body parts” (Konrad 2005) whose value is determined by various political, economical, social, and medical factors. This section describes some factors contributing to make oocytes a scarce resource.

Eggs retrieval and possible side effects

The most relevant specific quality of eggs is that they are not an available resource, ready to use. On the contrary, an invasive and demanding procedure is needed to access them. First of all, informed consent by the woman deemed ready and fit for egg donation is required. Then the donor must take hormones suppressing her natural menstrual cycle and for her body to produce as many eggs at one time, instead of the one or two being released monthly under normal conditions. During this phase, the growth and number of egg containing follicles are monitored regularly through ultrasound. When the follicles are mature they are aspirated transvaginally with a needle under ultrasound control. This procedure requires the donor to undergo an anesthesia or to be sedated in order to avoid pain.

The procedure can have short and long term side effects, with the latter remaining understudied (Pearson 2006; Waldby 2008; Shalev and Werner-Felmayer 2012; Myers 2013). In the short term, the major complication is *ovarian hyperstimulation syndrome* (OHSS) which can be a life-threatening condition. According to the Practice Committee of the ASRM (2008b), “mild manifestations of OHSS are relatively common and include: transient lower abdominal discomfort, mild nausea, vomiting, diarrhea and abdominal distension” (ASRM Practice Committee 2008b: S188-S189). Also associated with oocyte retrieval is the risk of pelvic infection and intraperitoneal hemorrhage (ASRM practice committee 2008b). Other potential side effects of *ovarian stimulation* are mood changes, muscle aches, fatigue, hot flashes, headaches, breast tenderness, and abdominal bloating (Holzer et al. 2007). A possible risk of transmitting an infection to the donor, her partner or any resulting infant is also present (ASRM Practice Committee 2008a). The risks associated with low levels of anesthesia should be small (ASRM Practice Committee 2008a).

In the long term, the main fears are that donations have an impact on the fertility of the donor, and that there is a heightened risk of reproductive tract cancer related to the hormone ingestion (Ahuja and Simons 1998; Pearson 2006; ASRM Practice Committee 2008a; Lochlann 2013). These various side effects and risks are

theoretically more important in the case of repetitive donation (ASRM Practice Committee 2008a), but it has been shown that three stimulations could be undergone without negative effects on the donor's *ovarian reserve* (Jain et al. 2005). To prevent risks associated with repetitive donations, the ASRM practice committee recommends that it should be limited to six (ASRM Practice Committee 2008a). Even if current results seem reassuring, there is common agreement that further research and follow-up studies are lacking and should be undertaken.

It must be noted that the procedure of controlled ovarian hyperstimulation and egg retrieval is similar in the case of *autologous* IVF, but the difference is that in one case risks are taken for one's own benefit, and in the other case they are taken for the benefit of another woman – the recipient – leaving the donor without direct personal advantage, while reproductive donation produces “irreplaceable benefits” constituted as a “non-fungible, singular good”, namely children and family (Waldby et al. 2013).

Eggs as a non-renewable tissue

In addition to these difficulties in extracting oocytes, eggs cannot be considered an easily renewable tissue, like blood or sperm (Waldby 2008; Waldby et al. 2013). On the contrary, the prevailing model in biology explains that baby girls are born with a stock of egg-containing follicles, which decrease in quantity and quality over time (Broekmans et al. 2007; ASRM and ACOG Practice Committees 2008; ASRM 2012). The reasons for this premature aging in comparison with other bodily organs is not really explained (Konrad 2005). This model is challenged by new research in reproductive biology which shows that the supply in eggs could in fact be renewable and that reproductive aging could be reversible (White et al. 2012) but the concrete application of this research are still very far in the future. The loss of egg quality and quantity over time adds to our understanding of them as precious valuables, but also contributes to a sense of donors as “containers”, “warehouses” or “storage houses of production already produced” and not as “persons invested with social and moral agency” (Konrad 2005: 59). It is also connected to the importance of producing as many eggs as possible during one treatment cycle to

maximize the procedure: “the whole treatment regime is thus predicated on the value of excess and the desirability of cultivating a surplus of eggs through superovulation” (Konrad 2005: 58). This may change with the development of mild ovarian stimulation aiming at producing less eggs, but with better quality, and allowing to reduce the side effects of the procedure (Verberg et al. 2009a; Verberg et al. 2009b).

Increasing demand

The demand for eggs for reproductive treatment is increasing everywhere. While donors are still hard to find, the consequence is an insufficient supply of eggs. The development of certain fields of stem cell research increases the demand of an already limited resource even more, but the modes of recruitment and the type of donors sought are different. One of the consequences of the imbalance between demand and supply is the development of cross border reproductive care entailing the circulation of patients and donors in order to obtain or provide reproductive treatment (Shenfield 2012; Shalev and Werner-Felmayer 2012). Everywhere strategies are sought and implemented to increase the number of available donors and eggs. Efforts can be made at three different levels. The first concerns the drivers, or what motivates a donor to donate (B.1.2); the second concerns the modes of recruitment, or how to reach the donor (B.1.3); and the third concerns the donation sources, which can also vary, or where to find oocytes (B.1.4).

B.1.2 Varying the conditions of donation

Since donors do not benefit directly from the procedure, their motivations to donate are important questions to explore. An incentive is “a thing that motivates or encourages someone to do something” (Oxford Dictionaries). In the debates regarding acceptable conditions and incentives for providing eggs, two poles can be identified – altruism and payment – which can be articulated in many different ways. In between, different kinds of incentives involving reciprocity or solidarity also exist.

Altruism

Altruism refers to the moral capacity of acting for the welfare of somebody else out of generosity and is

defined as a “disinterested and selfless concern for the well-being of others” (Oxford Dictionaries). It is usually opposed to selfishness. In the context of egg donation, it refers to the ideal of a woman donating her eggs to another woman because she has sympathy for her infertility problems and wants to help her. It entails that it “should be given without obligation and free of any expectation of reciprocity” (Curtis 2010: 81). In practice, it is based on the idea that the donor is supposed to have the personal satisfaction of having helped somebody, in exchange for her donation (IGAS 2011). The language of altruism contributes to defining egg donation as a “gift”, in opposition to the “sale of gametes” and is often considered a way of preventing women from donating their eggs under financial pressure (Curtis 2010). It goes with the idea that reproduction is an intimate sphere which “should remain an area of personalized gift relation” (Waldby et al. 2013: 34; see also Lessor 1993) and should stay outside the sphere of money and market.

At the ESHRE annual meeting 2013, a study on egg donors, funded and performed by ESHRE was presented (De Mouzon et al. 2013; Pennings et al. 2013). Its goal was to examine the sociodemographic characteristics of egg donors and their reasons for donating. 1423 egg donors based in 11 European countries responded to questionnaires between October 2011 and June 2012. The results show that the three main reasons for donation are altruism, financial, and a combination of both (Pennings et al. 2013), and that personal characteristics such as age or education are correlated with reasons for donation (Pennings et al. 2013; De Mouzon et al. 2013). Younger donors are more financially motivated, while more educated donors are more altruistically motivated (De Mouzon et al. 2013). Authors observe that there is a high variability among countries and, based on the complexity of the findings, conclude that egg donation cannot be understood as a single practice and that the specific context should be taken into account in ethical debates.

Another study complementing these findings shows that younger donors are more likely to drop out of the procedure or to be rejected for psychological reasons (Sachs et al. 2010) and that more educated donors are more likely to complete the donation process

successfully (Sachs et al. 2010). More generally, studies on donors’ motivations confirm these results and tend to show that altruism and compensation work together as incentives and that even if altruistically motivated, donors would not do it without a financial compensation (Jadva et al. 2011). Especially in the case of repetitive donation, financial compensation constitutes an important incentive (Caruso Klock 2003).

Social science scholars show how the meaning of altruism is deeply gendered, meaning that it does not have the same implication for women and for men in relation to ideas of masculinity/femininity and fatherhood/motherhood. In contrast to sperm donation, where men are socially “allowed” or encouraged to express that financial compensation works as an incentive, in egg donation agencies, women are expected to stress their emotional feelings and to display altruism and generosity (Almeling 2007; see also Kalfoglou and Geller 2000a). That means that as women, egg donors are expected to value altruism, which seems morally more convenient for them in relation to an ideal representation of motherhood (Curtis 2010). Additionally, instead of preventing women providing eggs from taking more risks for their own health, the altruism rhetoric tends to encourage sacrifice, emotional engagement, and risk taking, in a way that payment does not (Curtis 2010). For example, especially in the specific case of known donation, egg donors may feel emotionally so involved in the reproductive treatment of the recipient that they rapidly begin a new cycle of hormonal stimulation or another kind of treatment and in this way take more risks vis a vis their own health to enable the recipient’s success, to have their desired baby (Curtis 2010).

Other critics point to the fact that very pragmatically, a strict definition of egg donation as altruistic is limiting and inadequate, as the case of France shows (IGAS 2011), since it does not offer a framework that meets the increasing demand for eggs (Waldby 2008). Additionally, it can lead to the development of an “underground traffic of oocytes” (Englert et al. 2004) or to the exportation of the problem, like in France, where the demand is met across the borders and in opposition to the spirit of the French laws on bioethics (IGAS 2011). The example of Singapore, where

financial remuneration is prohibited, is instructive in this respect. Heng (2005) describes the practices of offering air tickets and hotel stays to donors to attract them. He criticizes this practice, in which donors are paid nothing while the clinics and medical professionals make a profit. Thus, the prohibition of payment, rather than creating a safer environment for donors, tends to increase their exploitation.

Payment

Payment is also highly debated. There are several forms of payment. It can be a strict reimbursement of expenses, of travel costs for example. It can also be a fixed amount of money intended to cover more broadly intangible expenses, such as time spent, risk taken and pain. It can also be a payment, like a premium, which is market-driven and depends on the supposed high quality of the eggs, or on specific characteristics of the donor. What follows concerns the two last points. The main fear raised by paying egg donors is “undue inducement” (Levine 2010). The idea underlying “undue inducement” is that egg donors could disregard the risks associated with donation and undergo the procedure even against their own interests and to the detriment of their own health, above all when the amount of money they could earn is very high (Levine 2010). As such, it constitutes a potential threat to the principles of autonomy, justice and consent (Waldby et al. 2013). On the other side, it can also lead the donor to hide possible health problems likely to threaten her own health or the health of the possible resulting child in order to be eligible as a donor and earn money (Englert et al. 2004).

A related concern is that payment leads to the exploitation of women by contributing to the view of “women’s bodies as a natural resource to be mined for profit” (Shalev and Werner-Felmayer 2012: 9), leading to a “diminished sense of personhood” (Levine 2010: 27) or even to a sense of “dehumanization inherent with commodification of the human body” (Nisker 1997: 244). As the same rate of compensation will be considered differently from the perspective of poorer women or wealthier women (Waldby 2013), and will be more attractive to those with fewer means, another risk identified is that poorer or underprivileged women lacking other financial alternatives are the

most likely to donate, and thus the more likely to take risks to the detriment of their own health. This argument can be relativized, since it has been shown that at least in the US – where oocytes are sold – egg donors are generally “white, college-educated, thin, non-disabled” (Pollock 2003: 243) or “educated, employed, white” (Sachs et al. 2010). A large number of them are middle class women donating to maintain their lifestyle or fund their education, and in this sense are demographically similar to the recipient, but poorer because they are younger (Pollock 2003).

Another critic of paying donation as it is practiced in the US – with premiums financially rewarding socially valued characteristics such as beauty and intelligence – is that it can lead to new forms of “gendered *eugenics*” by “ascribing superior human traits to those who most closely match western ideals of masculinity and femininity for the purpose of human reproduction” (Daniels and Heidt-Forsythe 2012: 720) and thus to a commodification of specific human traits.

However, the philosopher Ogien (2012) reminds us that the domains of what can be sold or not are historically and socially variable and that the fear of the commodification of body parts, while legitimate, can be used to strengthen normative and conservative models, for example the model of the “young, fertile and heterosexual” family. In the same way, some authors criticize the fact that only the payment of the donor seems to be morally reprehensible, but not the financial income of the clinics, medical staff and other intermediates and in case of CBRC the tourism industry (Curtis 2010). Other authors draw attention to the question of what exactly is paid and whether it should be morally reprehensible. For example, Haimes et al. (2012) ask whether it is the woman’s labor, the risks undertaken, or a return for the eggs that is paid, and Pollock (2003) argues that it is the “maternal capacity” which is sold through egg donation, and not eggs in themselves. Finally, Haimes et al. (2012) conclude that egg provision – a word used instead of donation to be more neutral – can be “valuable, exploitative, empowering or disrespectful according to the conditions of provision, procurement, use and disposal and according to the end product being

sought" (Haimes et al. 2012: 1211) and thus must always be examined in specific and local contexts.

Despite critiques of the commercialization of eggs, the majority of experts agree that a limited compensation for egg donors is ethically justified (Englert et al. 2004; Levine 2010). It is intended to cover the expenses incurred by the donation, such as travel and hotel expenses, but also the time, discomfort and health risks. It is also admitted that it remains a powerful incentive and that without it there would be fewer donors while demand is increasing. As shown in Part A, there is no lack of donors for reproduction in the USA, where donors are well paid. The case of Spain is more complex. They have enough donors to meet the demand, but De Mouzon et al. (2013) show that donors are not offered the highest amounts or financial compensation and that Spain does not have the highest percentage of financially motivated donors. However, professionals say that financial compensation works as the main incentive (IGAS 2011: 33). Recent data on the UK shows that even in the framework of altruism, the implementation of a financial compensation for egg donation has a tremendous impact on the supply in eggs (Merricks 2014). Indeed, it contributes to an increase in the number of voluntary donors, to drastically reduce wait lists, and to cover most of the demand for reproductive treatment with donated eggs (Merricks 2014).

Sharing programs

Egg sharing and "freeze-and-share" programs constitute another form of compensation based on reciprocity as a "win-win" situation. Egg sharing is a procedure where a woman already undergoing IVF for her own needs (or the needs of herself and her partner) agree to donate a part of the eggs. As compensation, in return for her donation, she can receive benefits in kind such as having the treatment costs reduced and/or the wait for treatment shortened. Historically, egg sharing was the first form of egg donation. The surplus oocytes retrieved from women undergoing IVF were used as donated eggs to induce pregnancy in other women since they would have been wasted otherwise (Sauer and Kavic 2006). But as cryopreservation techniques have developed, couples started to freeze their embryos instead of donating their surplus eggs. Egg

sharing was developed especially in the UK, where egg sharers made up over 40% of all oocyte donors (Gürtin et al. 2012) and were the biggest source of donor eggs during recent years (Ahuja 2012). The introduction of financial compensation in the amount of 750£ in April 2012 changed the donor's profile. Data collected in 2013 show that 30% are now oocyte sharers, 10% are known donors, and 60% altruistic donors who receive the financial compensation of 750£ (Merricks 2014).

The advocates of sharing programs argue that since the donor is also a patient undergoing treatment for her own needs, it is the only way of retrieving eggs without exposing a healthy person to the risks of hormonal stimulation and egg retrieval (Ahuja et al. 1999; Rimington et al. 2003). They add that without this option, poorer women could not afford IVF and egg sharing is therefore a win-win situation, especially in situations where there is a lack of donors and no financial compensation rewarding donation (Gürtin et al. 2012). Additionally, in a context where the supply in eggs does not meet the demand, egg sharing offers a good cost-benefit ratio (Ahuja et al. 2000). It is also considered as a way of promoting "personal independence in women" who will not have to wait for help from the state to access treatment or for the organization of public campaigns to recruit more donors (Ahuja et al. 2000).

Critics stress that even if it is not monetary compensation, the amount of treatment can be higher than the fixed amount of money proposed as compensation. Thus it invites questions about undue inducement compromising the informed consent of donors, exploitation of poorer donors by middle-class recipients, and commodification of body parts (Gürtin et al. 2012). It is also a sign of inequality in access to the health care system (Englert et al. 2004). What is feared is that poorer women who cannot afford to pay for IVF out of pocket will agree to donate their eggs in order to access the procedure, even if it can entail a reduction of their own chances for success, by reducing the number of oocytes at their disposal. Another fear that raises concerns is the psychological dimension of the egg sharing. What if the procedure works for the recipient and not for the donor, for example, since the chances for pregnancy are higher in recipients than in donors

(Englert et al. 2004). These critiques can be relativized by data showing that even in case of unsuccessful treatment, most egg sharers feel positive about the procedure and that sharers and recipients are similar from a socio-demographic point of view, except for their difference of age (Gürtin et al. 2012).

Other forms of solidarity or reciprocity donation which are performed in contexts where there is a lack of donors concern women undergoing reproductive treatment and benefiting from sperm donation who could donate their eggs as a counter-gift (IGAS 2011). In Belgium, the development of a similar program – permuted donation – combining the advantages of anonymity with the advantages of donating to a known person seems to have led to a considerable reduction in oocyte shortage (Englert et al. 2004). It has been performed in the fertility clinic of the Erasme Hospital in Brussels since its opening in 1989 (Englert et al. 1996). The goal is to avoid wasting a rare and precious good and use it in the most efficient way. It is based on a system where the oocytes of the donors are shared between several recipients for each cycle and no embryos are frozen. This means that while the recipient brings one donor to the clinic, she can nevertheless benefit from four embryo transfers (ULB Erasme; Englert 1996; Englert et al. 1996; Englert and Govaerts 1998).

The technical possibility of cryopreserving eggs produces new modes of sharing. In the UK, for example, freeze-and-share programs have been implemented at the London Bridge Fertility Gynecology and Genetics Centre (Attalla 2008; Mertes et al. 2012) and at the London Women's Clinic (Collins 2013). Women interested in autocryopreserving their eggs, can have the costs of freezing covered – and in some case those of storage too – if they agree to donate a part of them (Mertes et al. 2012; London Egg Bank Booklet). At the London Bridge Fertility Centre, they undergo 3 treatment cycles over a period of 12 months and oocytes are divided equally between donor and recipient.

The French Law of Bioethics of 2011, still awaiting an implementation decree, takes this option into consideration but in a reversed logic. It proposes that a

woman who agrees to donate her eggs for a woman in need could also cryopreserve a part of them for her own potential future use. This incentive would work as a way of compensating the potential risk of a loss of her own fertility due to the donation and thus offers her a kind of insurance.

Indirect forms of incentives

Less discussed are more indirect incentives related to different kinds of anonymity and disclosure modes. These indirect incentives do not constitute the main reason for donating but could help to increase – or if not taken into account decrease – the motivation of donors. Could donating eggs to a relative work as an incentive? Or the possibility of accessing information about the offspring? Or on the contrary is anonymity the only way to motivate more donors? Studies are in some way contradictory about these questions. A generally accepted idea is that the removal of anonymity entails more difficulties in recruiting donors. That was feared for example in the UK (Craft et al. 2005; Craft and Thornhill 2005) and in Switzerland (Wirthner et al. 2001) where it did not come true.

However, other studies exploring the perspectives of egg donors show that a significant part of them would like to know if there is a baby born from their donation, and/or receive identifying information about the offspring, and/or even meet them (for more details see Caruso Klock 2003; Jadva et al. 2001; Kalfoglou and Geller 2000b). The possibility of knowing whether a baby is born as a result of the donation can contribute to making the experience more rewarding (Kalfoglou and Geller 2000b). In the same way, more power to make decisions about the use, storage and disposal of donated eggs could also increase the motivation of women to participate (Kalfoglou and Geller 2000b). These elements seem to contribute to a greater satisfaction among donors and in this sense could work as indirect incentive.

The case of known donation also involves advantages and disadvantages. A study in Canada on the views of women participating in an altruistic known donation program – where donors and recipients know each other – shows that donors feel more secure abdicating

responsibility for their oocytes when they know the recipients and have the feeling that they can trust them and they will take good care of the resulting child (Blyth et al. 2011b). The fear of incest between unknown genetically related offspring expressed by donors is also reduced in case of known donation (Blyth et al. 2011b). A study on donation between sisters shows also that the donation works often as a counter-gift for previous help or kindness the recipient sister offered her donor sister, in a logic of reciprocity (Lessor 1993). These elements can help improve the participation of donors and the quality of the interaction.

However, the donation to a relative, such as a sister or a mother is delicate. Wanting to help a loved one certainly works as a powerful incentive and works to demonstrate or prove an unselfish love (Welch 2004), but experts draw attention to possible pressures. Authors exploring the case of daughter to mother donation point to the fact that money has such pervasive power that matters of loyalty, obligation, and financial dependence may influence the decision to the extent that, according to some experts, no truly free decision can be made in a child-parent relationship (Patel et al. 2011). In fact, it is often harder to refuse to donate to a close relative (ASRM Ethics Committee 2012). The psychological aspect of this kind of donation is especially tricky and experts recommend that a careful and deep evaluation of each member of the family involved be conducted and that the roles, duties and rights of each member are discussed (ASRM Ethics Committee 2012).

Another indirect incentive contributing to the satisfaction of donors is the way they are treated by the medical team. In a study exploring the reasons for donating several times, it was proven to be an important factor in the decision to make repetitive donations (Caruso Klock et al. 2003). Donors are healthy, young, and they are not the patient – the patient being the recipient. This situation means there is a risk that their interests are misunderstood or under-evaluated by professionals, or that they do not dare to make any demands because they are not at the center of the procedure (Kalfoglou and Geller 2000a). In addition, it was reported that the various means

used to keep the procedure anonymous, like numbers or pseudonyms, can make donors feel like commodities in the sense that they represent merely a means to an end. To increase the well-being of the donor during the procedure and to acknowledge the value of her donation by treating her with respect and appreciation (Kalfoglou Geller 2000a) can strongly increase the motivation to donate (Caruso Klock et al. 2003).

B.1.3 Varying the modes of recruitment

Another site where efforts can be made to increase the number of donors concerns the modes of recruitment. This involves the questions of how to reach the right people, how to speak about egg donation publicly and how to help prospective donors to engage in and complete the whole process. Oocyte donors recruitment is a “critical, costly, and labor-intensive part of ART programs” (Sachs et al. 2010). It requires a lot of time and effort from the medical staff, who is often already facing a general lack of resources (IGAS 2011). Depending on the context, donors can be recruited by clinics or egg donors agencies, by the recipients themselves, or indirectly by state organs.

Improving communication

Various means and media can be used to recruit donors. Advertisements can be published in student or university (non-scientific) journals like in the USA, in newspapers, or on the Internet on websites such as Craigslist, for example (Holster 2008; Levine 2010). More diffuse word-of-mouth practices help also to spread information and indirectly recruit more donors in positively shaping the expectations of prospective donors (Kalfoglou Geller 2000a). Information campaigns aimed at providing information on egg donation and raising awareness of the need for donors among the general public or to more specific audiences (such as young mothers, blood donors or women’s magazines’ readerships) (IGAS 2011) can also be organized at various scales and levels. Finally, personal and direct solicitation is used in the case of known or permuted donation by the recipients themselves or by the medical staff in the context of egg sharing with patients already undergoing treatment (IGAS 2011). The challenge is to improve strategies of

recruitment and make them more efficient, while presenting egg donation in its full complexity without misleading potential donors. To make advertisements in student newspapers more transparent, Levine (2010) proposes that a specific column should be dedicated to reproductive services. This would help avoid confusions with other columns which could negatively impact the representations of egg donation. The author also proposes that the practice of publishing an excerpt of the law or the guidelines regarding egg donation as a heading of the ads be explored.

Working on the well-being and satisfaction of donors during the procedure is another way of spreading a positive representation of this experience through word-of-mouth, with the idea that donors happy with their experience will speak to other people about it in a positive manner (Kalflogou and Geller 2000b). Another way of improving recruitment is to better understand the motivations of donors, the hurdles they meet, and identify the socio-demographic characteristics predictive of successful completion of the donation (Caruso Clock et al. 2003; Sachs et al. 2010). A better understanding of prospective donors can also help to target specific group and places of recruitment, for example booklets targeting young mothers (IGAS 2011). On this point, data are still lacking and more research has been requested.

Raising public awareness

Awareness-raising campaigns have been organized in different European countries by state organisms or clinics with limited success. Three examples are presented to give insight into existing practices. In UK, the NGDT has organized a book project with the goal of showing prospective donors how immensely positive impact of egg donation is. They aim to publish a book with real stories and experiences from previous recipients who write about how egg donation changed their life, how they would like to thank the donors, and what egg donation has meant for them. It provides recipients with an opportunity to express what they could not say to the donor in the context of anonymous donation. The launch of the book is thought of as an opportunity to publicly address the need for more sperm and oocyte donors. In the meantime, some narratives are available on the blog of NGDT.

In Belgium, the campaign “there is more in you” has been organized by the reproductive medicine center (CRG) of UZ Brussels, providing prospective donors with information about the need for and lack of eggs, as well as about the procedure of egg extraction itself. The goal of this campaign is to make young women aware of the need for eggs and the fact that donated eggs are sometimes the only thing allowing other young women to become pregnant, as well as to encourage solidarity among patients as prospective egg sharers.

In France, the Agency of Biomedicine is responsible for increasing the awareness about egg donation among the population. On their website dedicated to egg donation, information and small excerpts of experiences are presented. Additionally, posters with the message “vous pouvez donner le bonheur d’être parents¹⁴” were published (ABM Website c). Targeting the general public, this campaign aims to provide more information about the procedure and recalls the principles governing the regulations of egg donation in France, such as altruism, anonymity, and informed consent. According to the IGAS report (2011), the success of this campaign was limited. More recently, three short movies were released humorously presenting the principles of gamete donation in France (Allodocteurs Website) and a new website was launched, with the title “don d’ovocytes près de chez vous¹⁵” available on their website. The latter targets women who are already aware of infertility and of the need for oocytes. It aims at facilitating acting on this knowledge, and helping them to move from an abstract desire to help to a first appointment with medical staff responsible for oocyte donation.

Recipients recruiting donors

In the context of altruistic donation, recruitment performed by recipients themselves is often the most efficient way to find a donor. It can be meaningful and positively experienced in some cases (Blyth et al. 2011b), but in many contexts, because of the severe lack

¹⁴ Author’s translation: You can give someone the happiness of becoming parents.

¹⁵ Author’s translation: Ova donation near your place.

of donors, recipients have no choice but to look for a donor by themselves, because otherwise they will not access the procedure (IGAS 2011). Of course, appeal to a close friend or relative is not an easy task (Lessor 1993; Welch 2004). To persuade a woman without fertility problems to undergo the invasive and demanding procedure of egg donation is not easy (Löwy 2009) and can have irreversible consequences on the relationship in the case of refusal (IGAS 2011). Sometimes couples do not even dare to ask friends or relatives and thus find themselves in the situation of finding a donor through the Internet (IGAS 2011). The practice of proposing some reward to unknown people to attract them as prospective donors (without which the recipients would have no access to egg donation, like in the situation in France, described earlier in this report) seems to be a desperate strategy in the context of a dramatic lack of donors (IGAS 2011).

Medical teams recruiting donors

The medical staff in clinics is in a good position to directly recruit people undergoing treatment for themselves. For example, prospective donors include women in couples benefiting from sperm donation because of male infertility who could donate their eggs as a counter-gift (IGAS 2011). They are also well positioned to ask women freezing eggs for themselves whether they would consider donating an unused part of them after successful treatment, for example. More broadly, pediatricians could spread information to young mothers (IGAS 2011). As is very well shown in the IGAS report (2011), recruitment performed by clinics is time consuming and must be performed well, which requires adequate resources in time and staff. The education of doctors about the practice of egg donation can also be improved (IGAS 2011).

B.1.4 Varying oocytes sources

A third site where efforts are made to increase the supply in eggs is in the broadening of the spectrum of oocyte sources. Currently, mature eggs from live donors represent the main source of eggs. But the increasing demand for oocytes has stimulated research to mine other sources of eggs, raising the possibility or hope of the creation of an infinite supply of eggs (Konrad 2005).

Various types of possible donors

Among human donors, different groups are considered: young women with or without children, women who freeze their eggs for themselves, women who benefit from sperm donation and want to “give something back”, or women undergoing IVF for themselves. Schematically, the advantage of women undergoing hormonal stimulation and egg retrieval for themselves and agreeing to share their eggs is that the procedure does not require healthy women to be subject to these invasive procedures (Ahuja et al. 1999). The disadvantage is that it can reduce their own chances of success because they are then working with a reduced number of oocytes, and that their number is limited in a context where there is already an important lack of donors (Blyth 2002; Thum et al. 2003). Including women who are not undergoing treatment for themselves or benefiting from a *heterologous* sperm donation allows for an increase in supply, but has the disadvantage of exposing healthy women to a risky procedure. Most countries agree that informed consent performed professionally according to established guidelines and rules is a sufficient condition to let healthy women take these risks for the benefit of another woman.

Cryopreserved oocytes

The recent developments in oocyte cryopreservation open up new possibilities for increasing the supply in eggs. The authors agree that egg freezing will make egg donation cycles more flexible, more efficient and cost-effective (Nagy et al. 2009 ; Cobo et al. 2011). The creation of egg banks on the model of sperm banks will contribute to the improvement of the repartition of donated eggs among different recipients, implying a better use of a limited resource. Especially unused frozen eggs – retrieved in the case of autcryopreservation or in the case of reproductive treatment – could be donated to other women for reproductive purposes (Belaisch-Allart 2012). As autcryopreservation in anticipation of gamete exhaustion works according to an insurance logic, it is possible that women will become pregnant without using them, and that they will not need them all (see Stoop et al. 2011; Stoop et al. 2013). As eggs are less emotionally invested than embryos and not a symbol

of partnership, they could be more easily donated (Mertes et al. 2012). Another advantage related to the development of cryopreservation is that if women have their own eggs frozen they will be less likely to need IVF with donated eggs, which could have a positive impact on the demand (Bellaisch-Allart 2013).

The effectiveness of oocyte vitrification also opens up the possibility of importing and exporting gametes, as it is already done with sperm. It can provide new ways of meeting the demand in oocytes. However, there are risks associated with outsourcing donation to poorer countries and special care should be given to the conditions of donation (Heng 2006; Heng 2007).

Future oocyte sources

Other kinds of bio-sources are increasingly sought and researched. These new sources rely on the development of the techniques of *in vitro* maturation which allows for the growth of immature eggs in a culture medium in a Petri dish in the lab until they reach the required size and on techniques of *in vivo* maturation, meaning that ovarian tissue can be grafted in the ovaries of the recipient woman, allowing for the restoration of ovarian function. In 2001, experts in the field were already writing about the hope that “developments in oocyte cryopreservation and in-vitro maturation will hopefully result in an increased availability of oocytes for donation and may help to solve the problem of oocyte shortage” (Delbaere and Englert, 2001: 45). One study attempted to assess the role of immature oocytes collection from unstimulated ovaries as a potential source of oocyte donation (Holzer et al. 2007). It shows that young women with polycystic ovaries or polycystic ovaries syndrome are perfect candidates for in vitro maturation. This syndrome, among others, generates an unusually high number of follicles and thus a higher risk of developing ovarian hyperstimulation syndrome. From these women, immature eggs can be retrieved without hormonal stimulation, which is a great advantage; they can then be matured in vitro before being fertilized and implanted in the recipient’s uterus. Results of this study show that pregnancy rates with this technique are similar to those performed with standard IVF with donated eggs.

In the UK, a number of novel propositions were made (Konrad 2005; Sargent 2007). The HFEA proposed that ovarian tissue extracted from female aborted fetus, then cryopreserved and/or matured in vitro, could be used to induce pregnancy in a recipient. This is similar to the way ovarian tissue can be retrieved from pre-consenting women or girls who have died, as is already the case with organ transplant. This latter possibility begs the question of age limits and whether it is morally acceptable to use oocytes from a deceased female (Konrad 2006). These possibilities challenge our social models of genealogy and our representations of what an oocyte is. The genealogical model implies the sharing and passing on of a substance through generations according to a lineal descent (Bamford and Leach 2009). In our societies, this substance has been increasingly taking the form of genes. In opening possibilities of reversing genealogical time, these techniques are troubling taken-for-granted categories and raise many debates and objections. The main questions asked in the UK were how can a baby be born from a “mother” not even born herself? Or what does it mean to be conceived from oocytes from a dead person? This implies that there will never be any possibility of meeting them and that the question of genetic origins is troubled. These oocytes are disembodied from their original human source and consequently bring up the problem of “non-origins” (Konrad 2005).

It must be noted that ovarian tissue can also be taken from live donors, as it is often performed for women suffering from cancer (Feky et al. 2008). It requires the surgical removal of ovarian tissue, which is then cryopreserved. Later immature oocytes can be matured in vitro or thawed tissue can be transplanted (Forman et al. 2011). A recent study in the UK reports that ovaries could be technologically “reawakened” and used to induce pregnancy by women suffering from primary ovarian insufficiency. Ovaries were removed, then hormonally stimulated to grow, before fragments were grafted back in the uterus leading successfully to a pregnancy (NHS Choices 2013). These techniques allow for the avoidance of the need for donated eggs and aim instead at preserving one’s own fertility.

Finally, advances in stem cell research and regenerative medicine could bring new possibilities for producing eggs. In opposition to egg donation, these scientific developments target reproductive aging itself and, if successfully developed, would allow one to use one's own oocytes and not those of a donor. The goal is to develop new strategies in vivo and in vitro to act on the fertility decline itself. Still far from being usable on human subjects, they raise great hopes (Tilly and Telfer 2009; White et al. 2012; Nelson et al. 2013). The creation of stem cell-derived gametes through cloning techniques raise the dream of an "infinite supply of human eggs for therapeutic cloning research" (Konrad 2005; Mertes and Pennings 2010) which would contribute to a decrease in the demand for human eggs, which could be then reserved for the needs of reproduction. It also raises the possibility of an "age of limitless in vitro production of new autologous eggs from the oogonial stem cells of human ovaries" (Bukowsky 2005). The development of these technologies open up the prospect of dramatically changing egg donation practices by reducing the need for egg donors, but they remain far from human application. They also represent new challenges to the meanings of kinship relations – can a stem cell be a parent? (Newson and Smajdor 2005) – and increased human intervention in the process of human reproduction.

B.2 Accessing IVF with donated eggs: who should decide whose rights?

On April 1, 2010, the European Court of Human Rights gave its judgment on the case of H.S. and others v. Austria (n°57813/00) (ECHR 2010). The regulation on ARTs in Austria is similar to the one in Switzerland. Egg donation is also prohibited there in order to protect the child's welfare from the division in motherhood, drawing on the Roman principle that *mater semper certa est*. This case opposes two Austrian couples, one needing IVF with donated sperm, the other needing IVF with donated eggs because of agonadism – meaning that the woman could not produce any oocyte – to the state of Austria, whose regulation prevents them from accessing the reproductive technologies able to help them have a child. The judgment of the European Court holds that Austria was in violation of Article 14 on the “prohibition of discrimination” and Article 8 on the “right to respect for private and family life” (ECHR 2010). Additionally, it counters the argument on the division on motherhood, stressing that unusual family relations, which do not “follow the typical parent-child relationship based on a direct biological link” (ECHR, 2010: 16) are already well known, as in the case of adoption, and should not constitute a problem from a legal point of view. This judgement was criticized by ethical associations such as Child Rights International Network (CRIN 2010) or G n thique (2010) on the ground that it establishes a “right to have a child”, opens the door to “non-medical” assistance to procreation, and threatens state sovereignty with regard to bioethics.

However, a year later, on November 3, 2011, the ECHR Great Chamber, asked by the Austrian government to review the case (4.10.2010), came to the opposite decision and concluded that this was not in violation of Article 8, the “right to respect for private and family life” (Case of S.H. and others v. Austria, application 57813/00). This decision acknowledges that the right of a couple to have a child through ARTs is related to the Article 8, but also put the Austrian regulation into the context of its implementation when IVF raised many ethical debates and interprets the Austrian regulation as an effort to reconcile the desire to give access to

ARTs while taking into accounts the fears expressed by large sections of society. Regarding motherhood, it refutes the argument presented in the first decision, and argues that the splitting of motherhood between a genetic mother and the one carrying the child is not similar to adoption relations and recognizes that Austria respected civil law where the mother is always certain (ECHR Press Release 2011; for more details see Case of S.H. and others v. Austria, application 57813/00 and B chler 2013).

More recently, in November 2013, an Italian court decided to remove a three-year-old girl from her parent's custody on the grounds that they were too old to take care of their child. Their child was conceived through egg donation across national borders because of the ban on gamete donation, when the mother was 57 and the father 70 (Gulino et al. 2013; Vasireddy and Bewley 2013). The court grounded its decision in the “right of the child to health and well-being” as opposed to the “parental right of self-determination” which was reduced to a “narcissic” desire for a child (Gulino et al. 2013). The idea is that the welfare of the child is threatened by her parent's advanced age, in the sense that she could be orphaned at a younger age, or would have to take care of them as a young adult when she should be able to rely on them for support. In the media, this decision generated feelings of outrage and was perceived as an intolerable state intrusion into the privacy of family, and as a failure to account for new family forms (Dumont 2013; Montabert 2013). It also highlights the difficulties in encompassing in advance what is in the child's best interest (Gulino et al. 2013).

These two complicated cases reveal tensions between the parents' rights for privacy and non-discrimination and highlight especially the stakes raised by access to IVF with donated eggs. Fundamental questions it raises include: Is there a fundamental human right to have children? Or should it remain outside the realm of human intervention? Or a luxury option comparable to cosmetic surgery? Must the use of egg donation be limited to medical necessity or can it be just an elective option? How to draw the distinction between the two? Is childlessness a disease? What are the exact limits of a medical condition and to what extent should

reproductive medicine intervene? Should same-sex partners, or single women without infertility problems be able to access these technologies? Should older women have access to egg donation, even though the process of aging can be thought of as a normal human life process? Is advanced age a threat to the welfare of the child? What is the “welfare of the child,” especially the welfare of an unborn child? How can it be assessed? Is the dissociation between genetic and gestational functions of motherhood a threat to the future wellbeing of the child? And finally, and maybe more important, who should decide? The state, ethical commissions, the practitioners, or the intended parents?

These crucial questions do not have easy answers and have been debated since the advent of IVF. As new biotechnologies develop very quickly, new challenges are constantly raised. Since the birth of the first baby conceived with donated eggs in Australia at the beginning of the eighties (Lutjen et al. 1984), the indications for egg donation have been increasingly broadened (Sauer and Kavic 2006), raising many questions about who should be able access it. Dealing with a rare and highly valued good, reproductive treatment with egg donation raises the question of how and under which conditions a scarce resource is distributed. But answering the question of access also raises fundamental questions about the right to have children, the child’s welfare, the definition of infertility and the role of reproductive medicine. Each country has to answer these questions when developing regulations on ARTs. To do so they implicitly or explicitly draw on models, definitions and norms related to family, infertility, gender, role of reproductive medicine, and child welfare. Two general logics can be identified in tension with each other. One stresses the importance of equality and individual rights – examined in section B.2.1 – and the other seeks to protect society from changes brought by ARTs – examined in section B.2.2. The question of age as a medical condition of special importance for egg donation is examined in section B.2.3.

B.2.1 Reproductive rights

Historically, the importance of reproductive rights has been foregrounded by the feminist movement, which

fought for equality between men and women, as well as for the rights of women to control their bodies and decide what is good for them. The movement’s special emphasis on the right to choose to procreate and when and how, or to choose not to through contraception and abortion has been the object of many political struggles. If medical technologies have been shown by first-wave feminists to be exploitative of women’s bodies, advances in technology have also been more and more defined as empowering women and giving them more control over their reproduction and bodies (Thompson 2005). Lesbian and gay movements have also fought for the recognition of their rights, including the right to have a family and the right to access the same degree of protection that heterosexual couples enjoy through marriage, for example. Since their rights are increasingly recognized in western countries as equal to those of heterosexual couples, their access to ARTs is under debate. Countries such as Spain, Belgium or Finland grant them the same rights as heterosexual couples to access ARTs (Marina et al. 2012).

At an international level, the International Conference on Population and Development that took place in Cairo in 1994 and the United Nations Fourth World Conference on Women that took place in Beijing in 1995 put women’s reproductive health and women’s rights on the political agenda of participating countries. Through the establishment of a Platform for Action the primacy of women’s rights as human rights was asserted, meaning that rights, laws and rules cannot be applied differently to women and to men, as well as the right to control matters related to their sexuality and reproductive life (Dunlop et al. 1996). Through this recognition, the concept of sexual rights and reproductive rights gains increasing legitimacy. The status of transgender people and their reproductive rights are still under debate (Dunlop et al. 1996). Access to ARTs is particularly controversial, even if a slowly increasing number of transgender people access ARTs in the US (Richards 2014).

Following a liberal tradition of protecting individual autonomy, these rights are related to the right of privacy, which can be defined as the right to be free from governmental interference in the domain of

personal relationships (Rao 1998). At stake is the delimitation of the extent to which decisions concerning reproduction should be taken by individuals or by the state (Sedillo Lopez 1988). This right raises questions about which state interests justify its interference into private and/or biological matters, and how the line between what is private and free from intervention, and what is public and regulated by the state, is drawn.

In the context of ARTs, some countries draw on these principles and stress the importance of the reproductive rights and choices of autonomous individuals. More weight is put on the individuals wanting to use ARTs on the basis of informed consent, such as in Belgium for example, independent of their civil status or sexual orientation. That means that for these countries, it is less the indications – medical or non-medical – which are important, than the right of people to access an existing technological possibility in an equal manner. According to this model, egg donation should be accessible to any woman independent of her sexual orientation, civil status and even age. Even more, “any criteria designed to restrict access to donated eggs on ethical grounds may be vulnerable to criticism of discrimination” (Smajdor 2008: 176).

Some critics point to the fact that in broadening access to IVF with donated eggs, additional pressure is put on an already limited number of egg donors and that it increases costs. The access to ARTs for lesbian and single women is highly debated. Opponents see it as a threat to family and family values, as well as dangerous to the interests of the child. Supporters see it as a way of promoting equality among all human beings independent from sexuality and intimate choices. Treatment coverage can be associated with this logic the way it is in Belgium, or not, like in the US, where reproduction is privatized in both senses that it is not covered and that it is considered a private matter. In this latter case, it creates other kinds of disparities based on the socio-economical status, where reproductive innovation becomes a privilege of the richer (Löwy 2009).

B.2.2 Protecting which family ?

For what reasons does the state intervene in the private sphere of reproduction? In opposition to a logic favoring the rights of autonomous individuals, another logic justifies the intervention of the state in reproductive matters to protect family and society from changes brought by ARTs that are considered undesirable. Most regulations agree to defend fundamental principles such as “the protection of human life, the non-commercialization of the human body and reproduction, and responsible parenthood” (Pennings 2009: S15). However, the interpretation and application of these basic principles can vary widely and some countries establish regulations, triggered by fear and based on a defensive logic. According to this logic, ARTs represent a potential threat to values considered to be fundamental human standards. For example, a concern for the wellbeing of the child is present in most of the regulations examined and is the object of intense negotiation in medical practices (Ehrich et al. 2006).

Social studies on ARTs show that a defensive logic tends to restrict the use of ARTs to clearly defined medical conditions and usually draws on “nature” to decide what should be allowed or prohibited. According to this way of thinking, these technologies should assist reproduction only when they imitate “natural” reproduction, and not when they present new configurations which are possible only through technological means such as those resulting from egg donation. Implicitly, through this argumentation, the model of the nuclear, heterosexual, bilateral family based on the sharing and passing on of biogenetic substance is promoted, strengthened, and even naturalized, in the sense that it is presented as the only “natural” way of making a family (e.g. Fassin 2002; Thompson 2005; Löwy 2009).

Yet, this family model is historically very recent and anthropologists have shown that there has been great diversity in building family relations across cultures, and that the Euro-American kinship model is a specific phenomenon (Schneider 1980). Complex kinship arrangements can be found in many cultures and the sharing of biogenetic substance is not the most

important factor in establishing kin relations in all contexts. Above all, they show that kinship relations are built through various processes, or in other words that they are made rather than given. For example, in Malaysia, the relation established through feeding is more important than the facts of birth and contributes to the creation of kinship relations (Carsten 1991, 1995, 2004).

Sociologists and anthropologists have also shown how the development of ARTs challenge taken-for-granted categories and representations of kinship. These studies highlight the creativity of people and the different ways they make sense of these important relationships. For example, Thompson (2005) has shown how, in the symmetrical contexts of surrogacy and egg donation, some relations are constructed as meaningful, while others are not invested. Exploring the perspective of egg donors, Spanish scholars have also asserted that donors perform a kind of desubstantialization, while egg recipients have to resubstantialize the relation to the child (Bestard and Orobítz 2009). This means that donors must work to minimize their own connectedness to the biological material that could become a child, while recipients work in the opposite sense, to make the relation to the future child substantial, even though it is not based on the sharing of genetic material. This body of work shows that there is no such thing as a “natural” family and that people involved in the field of ARTs have resources to deal with these new possibilities and to make sense of them.

If this “naturalistic” logic is taken seriously, egg donation should not be performed at all. Yet, the fact is that it is performed and has been increasingly recognized as a legitimate means of overcoming infertility (Sauer and Kavic 2006). As a consequence, the increase in CBRC constitutes a sign that if people cannot access the technology they seek in their home country, they travel across the national borders, a phenomenon raising new ethical challenges (Shenfield et al. 2010, 2011).

This overview of the studied countries demonstrates that the logic stressing equality and individual rights, and the one that seeks to protect family, and especially

motherhood, from ARTs are in tension in many ways, particularly with regard to issues of access. However, a trend towards the first logic can be observed in Europe. Additionally, each country has its own history and way of responding to the challenges raised by ARTs, developing new logics and ways of balancing equality among individuals and family issues. As the development of ARTs is so fast and voices and perspectives in relation to them so diverse, one of the challenges is related to the core question of who should choose, for whom, and in the name of what. In other words, whether and under which conditions people can access ARTs.

B.2.3 Questioning age limits

In the context of egg donation, age holds special importance. Since the procedure allows for pregnancy in women in spite of the decrease of their ovarian reserve and even after menopause, it raises questions about age limits. With the development of egg donation, the limits of female fertility in relation to reproductive aging lose “nature” as their “grounding function” (Strathern 1992), forcing a search for other ways of justifying limits to the use of egg donation. The choice to limit access in this sense reveals ethical and social criteria and norms, rather than medical ones (Smajdor 2008).

The new developments in vitrification which open up the possibility of autocryopreserving one’s own oocytes as a fertility preservation strategy, has renewed debates on age limits and given new visibility to these questions. Critics of the latter say that it is a way of promoting late pregnancies, giving false assurance to women, as success is not guaranteed and depends on a woman’s age at the time of donation, and that it represents an additional medicalization of reproduction (e.g. Fédération Française des CECOS 2013). Supporters see it as a way of preventing infertility, a way of reducing the demand for donated eggs, and a means of increasing the supply in eggs, especially because not all eggs will be used and therefore could be donated, as a way of increasing women’s rights, and finally, as a way of preserving the genetic link between parent and child (e.g. Cobo et al. 2013; Bellaisch-Allart et al. 2013).

Medical condition / elective use

One of the first response to the challenge raised by reproductive aging is to draw on the distinction between a medical condition and elective use to set limits on access to IVF with donated eggs. According to this logic of attempting to imitate “nature” (Löwy 2009), egg donation should be used only to help infertile women who could get pregnant through natural means, but not to meet a demand raised by the postponement of childbirth. This distinction is associated with the idea that reproductive medicine should only be used to help people suffering from a medical condition, but not assist people who could have simply made different life choices. It is associated with different economies of responsibility, defining young women as victims of a medical condition and consequently having a legitimate access to egg donation, and older women defined as responsible for their infertility because of the choice to postpone childbirth and consequently excluded from a legitimate access to the procedure (Smajdor 2008). The difficulty is that there is no agreement about how to decide exactly when the medical condition ends and when the period of elective use begins, aging being both a normal human process and at the same time related to medical conditions. Another paradox is that the appeal to “natural limits” takes place in a highly technological and medical environment. IVF in itself does not respect “natural limits”, thus their importance when it comes to the subject of age seems rather arbitrary (Löwy 2009).

Age is one of the few admission criterion accepted by all centers (Pennings 2001). However, some countries choose the symbolic barrier of menopause (set at age 50) as a limit of access to IVF with donated eggs, the way it is practiced in Spain. Others set this limit earlier, for example at 42, like in France, drawing on statistics showing that this is the age when chances of natural pregnancy are dramatically reduced, restricting access to clearly defined medical conditions. Others set the limit in between, like in the UK, and still others do not set any limit, as long as the health of the recipient woman allows it, like in the US or Finland. As reproductive aging can vary widely from one woman to another, setting fixed age limits becomes arbitrary,

but not setting limits also raises a lot of anxieties and moral concern about women becoming mothers at the traditional age of grandmothers, changes in intergenerational relationships, and the well-being of the child (Campbell 2011).

Gender and risks

A second kind of response draws on the differences between men and women to justify limits on access to IVF with donated eggs and in doing so try to reproduce “natural” differences (Löwy 2009). According to this logic, as women have a limited fertility span and men do not – or not as limited – the use of egg donation should respect this difference. Since men can postpone procreation and nevertheless receive medical assistance up to an advanced age, the limit imposed on women becomes arbitrary and reflects more about social representations of masculinity independent from age and femininity incompatible with aging (Löwy 2009).

This point raises concern about the difference in treatment between men and women. Are biological differences between men and women sufficient to justify this distinction or is it an unjust form of discrimination (Smajdor 2008)? Some will answer positively, arguing that it is more risky for an older woman to become a mother, because of the risks associated with carrying a pregnancy and giving birth, than for an older man to become a father. The related concerns about health risks associated with childbearing at an older age are very much discussed. In fact, risks associated with advanced maternal age for the mother and offspring – such as gestational hypertension, diabetes, pre-eclampsia, preterm delivery, caesarian (e.g. Jacobsson et al. 2004; Delbaere et al. 2007; Bayrampour et al. 2010; Wunder 2013) – are one of the main medical reason advanced to prevent older women from accessing ARTs.

“Are the risks associated with older pregnancies sufficient to prevent women from accessing treatment?” asks Smajdor (2011). Acknowledging that older pregnancies are riskier, she nevertheless shows that it is insufficient to prevent older women from access to IVF with donated eggs. What is risk? she asks, showing that there is no threshold where risk increases

dramatically, and that there is in fact a rather slow increase in risk. Since reproduction in itself is risky and only small differences in risk can be observed, it can hardly be taken as a reason for denying access to older women. Smajdor (2011) shows also that women make decisions based on factors other than risk avoidance and that their only choice is to renounce having children, not to have less risk. She stresses that even if one does not share the values underlying these women's decisions, it is important to separate moral judgment and access to fertility treatment and not to allow a "punitive justice" to come into play under the pretext that these women chose their situation rationally, which is rarely, if ever, the case (Smajdor 2008). In the same vein, Chibber (2005) argues that since it has been shown that if well screened and controlled, pregnancy is not more dangerous for healthy older women than for younger women, the risks associated with pregnancy at an advanced age are not sufficient, to justify their exclusion from access on the basis of age alone.

Löwy (2009) stresses the variability of assessing risk as well. She shows, for example, that dangerous sporting activities are promoted among men as a sign of masculinity, while the risks associated with older pregnancies are morally judged negatively. In the same vein, Pennings (2001) shows that from a "distributive justice" perspective, access cannot be based on the expected pregnancy rates, or the idea, drawing on a principle of utility, that eggs are a scarce resource that should be donated only to women who have the best chances of pregnancy. It cannot draw either on the responsibility or presupposed "fault" of women having chosen to postpone pregnancy for "selfish" purposes. Having little control over events likely to make them delay childbearing, they cannot be judged as responsible for their own "illness" and consequently should have the same access as any other woman.

The concern about parents being unable to take care of their child because of their advanced age is an argument to restrict older women from access. In tension are the two principles of beneficence – under the sign of the child's welfare – and respect for autonomy and privacy. However, if the right of children to be raised by both of their parents is taken

seriously, the life expectancy of women should be taken into account. Drawing on such a calculation, Mori (1995) shows that the upper limit to IVF with donated eggs should be set at age 60. Smajdor (2008, 2011) criticizes this limit, arguing that egg donation is also an indication for young women treated for cancer or other medical conditions implying a shorter life expectancy, and that in these cases the same reasoning should be applied. She argues that either the same principle should be applied to all without distinction, or should not be applied. Additionally, as grandparents take care of their grandchildren on a regular basis in many places in the world, it cannot easily be argued that age in itself is an obstacle to the care of children (Löwy 2009).

The paradox of medicalizing reproductive aging

A third response is the medicalisation of reproductive aging or, in other words, the redefinition of reproductive aging as a medical condition. In the social sciences, processes of medicalisation – broadly defined as the redefinition of human life processes as medical problems or conditions – have been criticized as a reduction, biologisation and sometime individualization of broader social problems. Some experts criticize the use of a technological device to answer what is defined as the social or structural problem of postponing childbirth. Instead of taking into account the social dimension of the phenomenon, the use of these technologies and the discourses that surround them tend to frame it as purely an individual woman's problem (Daly and Bewley 2013). Instead of promoting IVF with donated eggs and egg freezing as solutions allowing women to extend their fertility, social and political efforts should be implemented to improve the possibilities for reconciling family and work, improve equality between men and women, and above all, between mothers and fathers, increase the number of day care centers and other kind of facilities for children; in other words, to act at the roots of what is described as the problem of postponement (Whyndam et al. 2012; Daly and Bewley 2013; Wunder 2013). Additionally, in a logic of prevention, education about fertility limits should be developed, in order to encourage women to have their children sooner, when it is a good time for their fertility clock (Whyndam et al. 2012).

While highly laudable and desirable, the concrete realization of these goals to prevent age-related infertility can be questioned, as well as the reasons leading to postponement. It has been shown that other factors, such as the difficulty in finding a partner, or separation after a long-term relationship, precariousness in the job market, or just the feeling of not being ready impact the delay in starting a family, and that one cannot really speak of "choice" in a rational sense, since the decision is so complex and dependent on factors independent from the personal will of women (Pennings 2001; Smajdor 2008). In particular, the socially required period of voluntary infertility through contraception tends to maintain an illusory notion of reproductive control until women face the "hidden cost of postponement – infertility" (Szewczuk 2012). Whether the efforts described above to prevent the postponement of childbirth, and the use of egg donation and egg freezing to extend the fertility span are exclusive and contradictory remains an open question.

In the context of ARTs, medicalization processes, while critically examined (Becker and Nachtigall 1992), have also been shown to enable new forms of kinship and gender relations. The case of Israel is very instructive in this regard (Shkedi Rafid and Hoshiloni-Dolev 2011). There, age-related infertility is defined as a medical problem and not as a social concern, as it is in Europe. According to this logic, egg freezing is defined as the medical prevention of a medical issue. This medicalization is the result of a highly pronatalist policy where "pregnancy is a necessary part of woman's life which can be postponed but never renounced" (Shkedi Rafid and Hoshiloni-Dolev 2011: 293), but one of its paradoxical consequences is that it increases women's reproductive autonomy and choices.

The idea of liberal and rational choice has been criticized by scholars working on reproduction. In *Embodied Progress*, Franklin asks how IVF becomes a desirable solution. Her analysis of narratives of women undergoing IVF in the context of the Thatcherite enterprise culture shows how "reproductive freedom is redefined as consumer choice and customer satisfaction" (Franklin 1997: 163). Underlying the

"double-edged" character of IVF, Franklin shows how choice for ARTs is made, at the same time it is described as inevitable (Franklin 1997: 169). To undergo ARTs may not bring the desired child, but should provide a resolution to the uncertainty produced by infertility and give the satisfaction of having tried everything possible. The concept of "prescriptive fertility" proposed by Strathern (1992) is useful to understand this process: "There is the question of prescriptive fertility, for instance, that accompanies what one could call prescriptive consumerism, namely the idea that if you have the opportunity to enhance yourself you should take it" (1992: 36). Stressing how procreation can be thought as subject to choice and personal preference in a unprecedented way, Strathern describes how choice becomes the central feature used to differentiate the having and having-not children: "The sense that one has no choice not to consume is a version of the feeling that one has no choice not to make a choice. Choice is imagined as the only source of difference" (Strathern 1992: 37). In this context, what the child reproduces and embodies is the parental choice and desire to have a child (Strathern 1992: 32). One of the risks is that since there is a biotechnical possibility opened to choice, it becomes obligatory for involuntarily childless women to try it (Tain 2009).

The extension of reproductive choices such as deciding to freeze one's own eggs or to have a child through egg donation raises new questions, new difficulties and probably new inequalities. So in extending possible reproductive choices, the technologies also render them more difficult and it is clear that egg freezing and IVF with donated eggs are not panaceas or easy solutions. Indeed, underlying the schema "a social problem equals a technological answer" we find an underproblematized vision of choice and of the "obstacle course" (Franklin 1997) which women have to go through to get pregnant. Often the complexity of treatments and the numerous possibilities of failures are unanticipated and according to the women interviewed, physical difficulties are secondary to emotional and psychological ones (Franklin 1997: 115). ARTs are described as technologies of hope, "the last resort in the attempt to have a child" (Franklin 1997: 121), but at the same time, this obstacle course

paradoxically exacerbates the pain it is supposed to alleviate. However, this can also be argued about IVF more generally, and about other biotechnologies enabling human intervention into biological processes.

Thus there seems to be no reason to preventing “reproductive aging” from becoming a medical need, most authors agree. As Smajdor (2011) points out: “This is choice: what we decide to regard as medical need is not given, but is negotiated. But as long as IVF is construed as a medical need, we must afford women the same privileges and protection that other patients receive” (Smajdor 2011: 39). As this overview has shown, the question of age is a topic of lively debate and many experts write on it. However, the voices of the concerned women themselves remain understudied and virtually undetectable in Europe, as compared to the US, probably for various reasons which have yet to be understood.

Conclusion

In conclusion, it is worthwhile to go back to the initial question of what can be learned from other countries regulating egg donation. Regulations on egg donation meet many challenges and raise several complex ethical, medical, and social issues. They are especially revealing how embedded in meanings of family, gender, and life itself, ARTs are. Regulations have to take the donor, the recipient, the resulting child, oocytes in themselves, and everything needed to their recognition into account. Regarding the donor, crucial issues concern her protection, information, recruitment, and compensation. Aspects dealing with the recipient's side concern above all conditions impacting on access to reproductive treatment with donated eggs, medical indications, and treatment coverage. Traceability, oocyte management and storage, family issues, counseling, and cryopreservation constitute additional aspects addressed by the laws in regard to egg donation.

The analysis shows that each country developed specific strategies and practices to regulate egg donation and that the regulations studied have to be understood as the product of each country's historical background and political landscape. However, beyond the differences observed between each country's approach, the analysis revealed four key learning aspects that are crucial to all considered countries. They will be relevant for Switzerland too, as they touch essential aspects of the social, legal, medical, and economic implications of egg donation.

The first one is that eggs are a "rare good" or a "scarce resource" due to the specific biology of ovaries and the invasive procedure needed to retrieve them, as much as by the concrete difficulties of recruiting persons willing to provide eggs. As a consequence, in most countries the supply does not meet an increasing demand. One of the mechanisms used to reduce the demand is by defining very clear criteria of access to IVF with donated eggs, such as practiced in France, where access to reproductive treatment with donated eggs is limited to strictly defined medical indications. However a restricted access – whatever the reasons – is often related to reproductive tourism, patients going

abroad to access the procedure, which raises other ethical issues.

Another strategy to increase the number of donors and thus the supply in eggs is to improve donor's recruitment and incentives. The example of France shows in an exemplary way the limits of a strict understanding of altruistic donation. The ideal of altruistic donation, if a very important value, does not enable to meet the demand, 80% of it being met across the national borders. Countries which implemented a financial compensation for time, inconvenience, and discomfort such as Spain or UK show in the contrary, that it contributes to increase the number of donors, even if the amount of the compensation is much lower than in the US. In relation to debates on altruism and payment, it is very important to keep in mind that egg provision – word used instead of donation to be more neutral – can be "valuable, exploitative, empowering or disrespectful according to the conditions of provision, procurement, use and disposal and according to the end product being sought" (Haimes et al. 2012: 1211) and thus must always be examined in specific and local contexts.

The second aspect is related to the rights and the protection of the donors. Since the procedure of egg donation is invasive and demanding, and secondary effects on a long term little known so far, special care has to be dedicated to their needs and their information during the process. As donors are not the "patient" at the heart of the procedure and are usually healthy and young, their interests can be easily underestimated. Additionally, good care seem to be a factor impacting on the willingness to donate. Fear of exploiting women's bodies and exposing them to health risks, such as those of cancer or infertility, for the benefit of other women, usually more privileged, constitutes a critic of egg donation. It is one of the reasons why egg sharers are preferred in UK for example. While it is good to remember that what is considered as morally acceptable to sell or not is highly historically and culturally dependant, attention needs also to be brought to the health of the donors, especially in a long term perspective, where research is lacking.

Thirdly, the recent improvements in egg freezing procedures offer new ways of preserving fertility for oneself and of creating egg banks. They could have an impact on both the demand – if women can use their own eggs, they shall less need those of other women – and the supply – unused stored eggs could be donated. It can also contribute to reduce wait lists and to simplify the whole procedure of reproductive treatment with egg donation. Freeze-and-share programs also open up new ways of recruiting donors and of compensating them. The review of the literature shows that eggs cryopreservation will become an inseparable part of egg donation practices.

Finally, the question of access is very delicate and related to the kind of values and models our society wants to promote and to conciliate. At stake the equality between human beings and possible exclusions, when for example access is limited to some groups of people according to their income, sexual orientation, or civil status. Another central value at stake concerns the definition and protection of vulnerable persons, for example, donors, and donor-conceived children, but also involuntary childless persons undergoing reproductive treatment. Through the regulation of access and the definition of the place of the child and of the donor, certain family models may be promoted, while other rejected as non legitimate. The determination of age limits for women leads, for example, to question the social norms of motherhood.

While the analysis shows that a trend towards an increased recognition of individual rights regardless of their sexual orientation and civil status can be observed in Europe and in the US, it also highlights how debates about these values vary depending on context, and each country's historical background and political landscape. Thus each society's response to the unique challenges raised by the development of assisted reproductive technologies can be understood as a reflection of its past and futures, which makes the elaboration of new regulations on egg donation a crucial moment of negotiation of what are desirable futures.

More basically, the report shows the importance of taking into account actual practices when elaborating regulations on egg donation. To situate debates in local contexts and deepen the understanding of the complex issues raised by egg donation, more empirical research is needed. Especially, more research on egg donors, and on egg cryopreservation could be developed.

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Annex 1: Glossary

Age-related infertility: This expression refers to the gradual decline in female fertility, which begins many years before menopause and becomes more pronounced after 35. This decline can be observed through the reduction in the number and quality of eggs in the ovaries and is associated with changes in hormone levels. Age-related infertility is associated with an increased risk of miscarriage due to higher rates of chromosomal abnormalities. According to the Practice Committee of the ASRM, egg donation “is the treatment of choice for age-related infertility not successfully addressed by other methods” (ASRM 2006: S250).

Altruism: Refers to the principle of acting in the interest of others. In the context of egg donation, the term refers to the moral principle that body parts such as eggs should be donated only out of generosity and that the donor should not expect to receive a reward. In public debates it is often opposed to the notion that donations should be compensated financially.

Amenorrhea: Absence of menstruation (periods).

Assisted Reproductive Technologies (ARTs): Also called fertility treatments. This expression can be used more or less broadly. In its broadest sense it describes the full range of medical techniques which enable women and men to have children, including intra-uterine insemination (IUI) and donor insemination (DI), *in vitro* fertilization (IVF) with donated eggs or with the *recipient's* eggs, intracytoplasmic sperm injection (ICSI), and related techniques such as *cryopreservation* and *pre-implantation genetic diagnosis*.

Autologous: Transferred from the same individual's body. Is used to refer to an IVF or insemination procedure that uses the gametes of the patient; in other words, when the donor and the recipient are the same person. It is opposed to *heterologous*.

Bioethics: Part of the field of ethics concerning the moral issues arising from new biomedical technologies and advances in biomedicine and genetics.

Commodification: Refers to the redefinition or transformation into commodities of “things” that are not typically considered as such. Raises questions regarding what can be sold and what cannot in a given context.

Cross border reproductive care (CBRC): Also popularly referred to as “reproductive tourism”. The neutral term CBRC is preferred to avoid the connotations of the word “tourism”. CBRC is defined as a “widespread phenomenon where infertile patients or collaborators (egg donors for example) cross borders in order to obtain or provide reproductive treatment outside their home country” (Shenfield 2012). The main reasons for traveling in Europe are legal prohibition of a particular technique in the country of origin, or lack of access due to personal characteristics, such as age, sexuality, civil status, etc. (Shenfield et al. 2010).

Cryopreservation: Also called *cryostorage* or *egg freezing*. The act of preserving substances or tissues at very low temperatures in liquid nitrogen for potential future use. Cryopreserved eggs or frozen eggs must be thawed to be used in an IVF procedure. Cryopreserved eggs are opposed to fresh eggs, which are used in IVF directly after their retrieval. Eggs can be cryopreserved for one's own use, a process commonly referred to as “social egg freezing” or “auto-cryostorage”, or for another woman's use, which is the case in egg donation.

Cryostorage: See cryopreservation.

Cycle: In the context of ARTs, this term designates a minimal unit of treatment possibly leading to pregnancy. As the medical preparation for an IVF can take a few weeks, this term is chosen to denote the length of a procedure and the fact that it can entail multiple steps. A treatment cycle begins either already when a woman starts taking drugs to stimulate hormonally the egg production and/or undergoes monitoring of her ovaries for egg production, leading to the harvesting and fertilization of these eggs *in vitro* and then the transfer of the resulting embryo. Or - in case of the use of prestored eggs (a woman's own or donated eggs), zygotes or embryos - it begins when the woman starts taking drugs to prepare her directly for embryo transfer.

Diminished ovarian reserve: The term “ovarian reserve” describes a woman's reproductive potential with respect to ovarian follicle number and oocyte quality” (ASRM 2006: S249). A *diminished ovarian reserve* means that the number and the quality of oocytes are decreasing. It is assessed through ultra-sounds and hormone levels. Reasons for this decline can be congenital, medical or aging.

Disclosure: In the context of egg donation, this term refers to the fact of telling the donor-conceived child that he or she was conceived with the help of a donor, that is with donated eggs, entailing a lack of genetic connection between mother or father and child. It raises issues about genetic origins and the right of donor-conceived children to know them.

Egg: See oocyte

Egg donation: Refers to women donating some of their own eggs to other women, called recipients. First the donor's reproductive cycle has to be paused. After that, she undergoes an hormonal stimulation initiating the maturation of several oocytes at the same time. When oocytes are mature, they are retrieved transvaginally under anesthesia or sedation. They are then fertilized with the recipient's partner sperm or with donated sperm *in vitro* in the laboratory. Once the fertilized donor eggs have developed into early embryos they are either directly transferred into the recipient's uterus or cryopreserved for later use. In order to allow implantation of the early embryo, the recipient has to be hormonally prepared a few days in advance as well. Donated eggs are used in ARTs procedures treating female infertility and genetic risks. Basically, eggs can be donated for reproduction or for research (reproductive egg donors / research egg donors). The term "provision" can also be used to be more neutral. In the framework of this report, only egg donation for reproductive means is investigated. The term "egg donation" is being used to refer to the part of the ART procedure concerning the egg donor only, i.e. everything surrounding the act of donating eggs, in opposition to the terms "IVF with donated eggs" and "fertility treatments with donated eggs" or "reproductive treatment with donated eggs" which are used to refer to the part of the ART procedure concerning the recipient woman.

Egg freezing: See cryopreservation.

Egg retrieval: Also called oocyte retrieval or harvesting. Part of the IVF procedure. Refers to the medical procedure of collecting the eggs contained in the ovarian follicles. Eggs are usually aspirated transvaginally under ultrasound guidance. Most of the time the procedure is performed on a patient under total or partial anesthesia.

Egg sharing: Refers to the donation of eggs by a woman already undergoing IVF treatment for herself and willing to share some of the eggs retrieved during the ARTs

process for herself. Usually, she receives benefits in kind, such as reduced costs or faster access to ARTs for her own treatment.

Eligibility: In the context of reproductive medicine, eligibility means that the patient – donor or recipient – meets the requirements of the clinic or the law and can access the medical procedure and/or its reimbursement.

Embryo: Product resulting from the fusion of sperm and egg and having undergone one or more cell divisions. Generally, it is called an embryo until organ development is finished, i.e. 8-10 weeks after fertilization. Thereafter it is called a fetus.

Embryo donation: Refers to the donation of embryos remaining after IVF. The recipient parents do not share any genetic connection to the child.

Embryonic Stem Cell (ESC): Different types of cells found in early embryos, which are capable of developing into another embryo (totipotency of the SC), all (multipotentpluricy) or a wide range of (pluripotentmulticity) different body tissues.

Eugenics: Targeted reproduction aiming at the production or elimination of desired traits or characteristics.

Fertilization: Fusion of egg and sperm resulting in a new organism that develops into an embryo and then fetus. Through this process the offspring inherits a mix of both parents' genetic material.

Gamete: Female and male reproductive cells – respectively oocyte and sperm – containing half of the genetic material of the organism (chromosomes) and able to fuse with another gamete to create a new individual.

Gonadal dysgenesis: General designation for congenital conditions varying in types and degrees, and involving a defective or abnormal development of the gonads, the organs that make the gametes, namely the testes and the ovaries, which may be accompanied by abnormalities of sex chromosomes. It is associated, for example, with *Turner Syndrome*.

Heterologous: Medical term meaning coming, derived or transferred from another organism of the same species. In the context of ARTs, refers to treatment involving donated gametes.

- Hypogonadotropic hypogonadism*: Diagnostic category designating the defective development of ovaries producing little or no sex hormone due to an hormonal lack of responsiveness. Results in delayed sexual development and retardation of growth.
- Idiopathic*: Adjective used in medicine when the cause of a condition is not clear or is unknown or arises spontaneously without being preceded by other signs.
- Infertility*: Infertility is usually defined as the absence of pregnancy after one or two years of regular unprotected (hetero)sexual intercourse. Primarily, it refers to one person (man or woman). But it can also be used to describe the fertility status of a couple. cf. definitions of *primary* and *secondary infertility*.
- In vitro*: Designates a procedure performed out of the body, in the laboratory, for example, in a Petri dish. Is opposed to *in vivo*, in the body.
- In vitro fertilization (IVF)*: A medical technique of assisted reproduction involving different steps, assembled under the term cycle. A cycle can be natural or stimulated. If it is hormonally stimulated, drugs are taken by the patient orally or through injections, in order to make ovaries produce more eggs than mature in natural cycles. In both cases, the development of the egg containing follicles in the ovaries is monitored. When the oocytes are mature, they are retrieved through transvaginal ultrasound aspiration. Then they are fertilized with sperm in a Petri dish (in *vitro*) in the laboratory, outside the female body, and ideally develop into embryos. Well developed embryos will within 3-5 days be transferred into the uterus where they hopefully implant, develop, and lead to a pregnancy. The remaining embryos can be cryopreserved for future use.
- IVF with donated eggs*: In the framework of this report, this term is used as a complement to “egg donation” in order to focus on the recipient’s side. It refers to the procedure of IVF using eggs donated by a donor, meaning their fertilization occurs out of the body and the eggs are then transferred into the recipient’s uterus. It can also be called *heterologous IVF*. In the literature, the term “donor cycle” is also used.
- Live birth*: The delivery of one or more living child. Opposed to stillbirth.
- Menopause*: According to the ASRM guide for patients on age and fertility (2012), menopause designates the “natural cessation of ovarian function and menstruation. It can occur between the ages of 42 and 56, but usually occurs around the age of 51, when the ovaries stop producing eggs and estrogen levels decline” (ASRM 2012: 12). Menopause is said to be premature when it occurs in a woman under the age of 40.
- Oocyte*: Female reproductive cell. Also called female gamete, egg, ovocyte or ovum.
- Oophorectomy*: Also called ovariectomy. Surgical removal of one or both ovaries.
- Ovarian dysfunction*: A diagnostic category used when a women’s ovaries are not producing eggs normally. Includes polycystic ovary syndrome and multiple ovarian cysts.
- Ovarian failure*: see *diminished ovarian reserve*.
- Ovarian reserve*: According to the ASRM guide for patients on age and fertility (2012), this term refers to “a woman’s fertility potential in the absence of any problems in the reproductive tract (fallopian tubes, uterus, vagina). It mainly depends on the number and quality of eggs in the ovaries and how well the ovarian follicles are responding to hormonal signals from the brain” (ASRM 2012: 12).
- Ovarian stimulation*: Part of the IVF procedure. Oral or injected drugs are used to stimulate the ovaries to develop in one cycle more follicles containing oocytes than they usually do.
- Peri-menopausal*: Perimenopause means “around menopause” and describes the period of transition that the body makes toward menopause. It usually starts in a woman’s forties, but can also start in a woman’s thirties. During this transition, hormones levels change and symptoms of menopause might already be experienced.
- Post-menopausal*: Means “after menopause” and describes the period of time following menopause.
- Pre-implantation Genetic Diagnosis (PGD)*: This technique combines the technique of IVF and advances in molecular genetics. Embryos created with IVF are genetically tested in order to decide whether they may be transferred into the uterus or whether they have to be discarded.

Premature ovarian failure: Also called early menopause or premature ovarian insufficiency. Describes the loss of the function of the ovaries before age 40.

Primary Care Trusts (PCTs): PCTs are public authorities responsible for “planning, securing, funding, and coordinating all of the NHS services in a defined geographical area” (PCT Network Website). They have decision making power with regard to how to allocate NHS resources. It must be noted that a new system entered into force on April 1st 2013 and PCTs were abolished and replaced by Clinical Commissioning Groups (CCGs) and Local Area Teams (LATs).

Primary infertility: Designates men, women, or couples who have never been able to conceive. Opposed to secondary infertility, designating men, women, or couples who have already been able to conceive.

Recipient: In the context of IVF with donated eggs, designates the woman who receives the donated eggs and who will become pregnant if the procedure is successful.

Screening: Designates the examination process patients – and in the context of egg donation, specifically egg donors – must undergo to identify the presence or risks of medical conditions, as for example HIV-Positivity.

Secondary infertility: Refers to couples who are unable to conceive or to carry a pregnancy to term after having been able to conceive a first time without medical assistance.

Sperm: Male reproductive cell. Also called male gamete, sperm cell or spermatocyte.

Sperm donation: Refers to men donating some of their own sperm to couples or single women, in the case of infertility or genetic problems of the future father, or because of the absence of a male parent. Depending on the medical situation of the woman being treated, donated sperm is either introduced directly into her uterus (intra uterine insemination), or is used to fertilize her eggs, or donated eggs, in vitro using IVF. See also *egg donation*.

Stem cell: A cell that can multiply and give rise to a variety of other, more specialised cell types. There exist very different types of stem cells. All of them are important and much debated subjects for biomedical research.

Surrogacy: Designates the process of carrying a pregnancy and giving birth for a couple of intended parents.

Synchronization: This term refers to the practical means performed to coordinate the cycle of the egg donor and the cycle of the recipient in order to enable the fertilization of the donated eggs and the implantation of embryos in the recipient’s uterus. Since until recently, eggs were not easily frozen, they were mostly used fresh. This means that when the donor’s eggs are retrieved, the uterine lining of the recipient must be ready for the implantation of the embryos, requiring that both hormonal stimulations are organized at precise times correlated with one another. As the result of an hormonal stimulation is never totally predictable, it means also that the recipient can be called at the last minute to undergo the procedure or that the implantation day can be postponed, etc. The cryopreservation practices open up the possibility of the end of the need for synchronization.

Turner syndrome: A congenital condition where one of the X chromosomes is missing or incomplete. Entails several medical complications, including growth problems and sub- or infertility because of the abnormal development of ovaries.

Two-tier medicine: In German, also called “Zweiklassenmedizin, and in French, “médecine à deux vitesses”. Refers to a medical or health care system where a difference can be observed between health care of reduced quality provided to the general public and healthcare of better quality provided to those who can afford it. Describes differentiated access to a medical procedure or healthcare according to one’s own income or otherwise defined special status.

Vitrification: Usually means the transformation of a substance into glass. In the context of reproductive medicine, it refers to a new cryopreservation technique, which allows the freezing of oocytes in a way that provides much better results than “slow-freezing” and other methods that were used previously.

Annex 2: List of acronyms

ARTs: Assisted Reproductive Technologies

ABM: Agence de Biomédecine (FRA)

AGE: Anticipated Gamete Exhaustion

ASRM: American Society for Reproductive Medicine (USA)

ASEBIR: Asociación para el Estudio de la Biología de la Reproducción (Spain)

BELRAP: Belgian Register for Assisted Procreation (BEL)

BiCa: British Infertility Counseling Association (UK)

CBRC: Cross border reproductive care

CCNE: Comité Consultatif National d'Éthique (FR)

CDC: Centers for Disease Control and Prevention (USA)

CECOS: Centres d'Étude et de Conservation des Oeufs et du Spermé humains (FR)

CNRHA: Comisión Nacional de Reproducción Humana Asistida or in English National Committee of Human Assisted Reproduction (ES)

CNGOF: Collège National des Gynécologues et Obstétriciens Français (FR)

CPM: Cycles per Million inhabitants or women of reproductive age

CRG: Center for Reproductive Medicine at the UZ Brussel hospital (BE)

ESC: Embryonic Stem cell

ESHRE: European Society of Human Reproduction and Embryology

FIVNAT: Association managing ARTs statistics in France

GEDO: Groupe d'Étude du Don d'Ovocytes (FR)

HFEA: Human Fertilisation and Embryology Authority (UK)

IGAS: Inspection Générale des Affaires Sociales (FR)

IVF: In Vitro Fertilization

NAS: National Academy of Science (US)

NICE: National Institute for Health and Care Excellence (UK)

NGDT: National Gamete Donation Trust (UK)

NHS: National Health System (UK)

PCTs: Primary Care Trusts (UK)

PGD: Pre-implantation Genetic Diagnosis

SEF: Spanish Fertility Society or Sociedad Española de Fertilidad.

SGRM or SSMR: Swiss Society for Reproductive Medicine / Schweizerische Gesellschaft für Reproduktionsmedizin (SGRM) / Société Suisse de Médecine de la Reproduction (SSMR) /

RMA: Reproductive Medicine Act / Bundesgesetz über die medizinisch unterstützte Fortpflanzung (FMedG) / Loi fédérale sur la Procréation Médicalement Assistée (LPMA) (CH)

SART: Society for Assisted Reproductive Technology (USA)

SEF: Sociedad Española de Fertilidad (ES)

UKDL: UK Donor Link