

Survey on ART and IUI: legislation, regulation, funding, and registries in European countries—an update

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ABSTRACT

STUDY QUESTION: How are ART and IUI regulated, funded, and registered in European countries, and how has the situation changed since 2018?

SUMMARY ANSWER: Of the 43 countries performing ART and IUI in Europe, and participating in the survey, specific legislation exists in only 39 countries, public funding varies across and sometimes within countries (and is lacking or minimal in four countries), and national registries are in place in 33 countries; only a small number of changes were identified, most of them in the direction of improving accessibility, through increased public financial support and/or opening access to additional subgroups.

WHAT IS KNOWN ALREADY: The annual reports of the European IVF-Monitoring Consortium (EIM) clearly show the existence of different approaches across Europe regarding accessibility to and efficacy of ART and IUI treatments. In a previous survey, some coherent information was gathered about how those techniques were regulated, funded, and registered in European countries, showing that diversity is the paradigm in this medical field.

STUDY DESIGN, SIZE, DURATION: A survey was designed using the SurveyMonkey tool consisting of 90 questions covering several domains (legal, funding, and registry) and considering specific details on the situation of third-party donations. New questions widened the scope of the previous survey. Answers refer to the situation of countries on 31 December 2022.

PARTICIPANTS/MATERIALS, SETTINGS, METHODS: All members of the EIM were invited to participate. The received answers were checked and initial responses were asked to address unclear answers and to provide any additional information considered relevant. Tables resulting from the consolidated data were then sent to members of the Committee of National Representatives of ESHRE, requesting a second check. Conflicting information was clarified by direct contact.

MAIN RESULTS AND THE ROLE OF CHANCE: Information was received from 43 out of the 45 European countries where ART and IUI are performed. There were 39 countries with specific legislation on ART, and artificial insemination was considered an ART technique in 33 of them. Accessibility is limited to infertile couples only in 8 of the 43 countries. In 5 countries, ART and IUI are permitted also for treatments of single women and all same sex couples, while a total of 33 offer treatment to single women and 19 offer treatment to female couples. Use of donated sperm is allowed in all except 2 countries, oocyte donation is allowed in 38, simultaneous donation of sperm and oocyte is allowed in 32, and embryo donation is allowed in 29 countries. Preimplantation genetic testing (PGT)-M/SR (for monogenetic disorders, structural rearrangements) is not allowed in 3 countries and PGT-A (for aneuploidy) is not allowed in 10; surrogacy is accepted in 15 countries. Except for marital/sexual situation, female age is the most frequently reported limiting criterion for legal access to ART: minimal age is usually set at 18 years and the maximum ranges from 42 to 54 with some countries not using numeric definition. Male maximum age is set in very few countries. Where third-party donors are permitted, age

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is frequently a limiting criterion (male maximum age ranging from 35 to 50; female maximum age from 30 to 37). Other legal restrictions in third-party donation are the number of children born from the same donor (or, in some countries, the number of families with children from the same donor) and, in 12 countries, there is a maximum number of oocyte donations. How countries deal with the anonymity is diverse: strict anonymity, anonymity just for the recipients (not for children when reaching legal adulthood age), a mixed system (anonymous and non-anonymous donations), and strict non-anonymity. Inquiring about donors' genetic screening showed that most countries have enforced either mandatory or scientific recommendations that exclude the most prevalent genetic diseases, although, again, diversity is evident. Reimbursement/compensation systems exist in more than 30 European countries, with around 10 describing clearly defined maximum amounts considered acceptable. Public funding systems are extremely variable. One country provides no financial assistance to ART/IUI patients and three offer only minimal support. Limits to the provision of funding are defined in the others i.e. age (female maximum age is the most used), existence of previous children, BMI, maximum number of treatments publicly supported, and techniques not entitled for funding. In a few countries reimbursement is linked to a clinical policy. The definitions of the type of expenses covered within an IVF/ICSI cycle, up to which limit, and the proportion of out-of-pocket costs for patients are also extremely dissimilar. National registries of ART are in place in 33 out of the 43 countries contributing to the survey and a registry of donors exists in 19 of them. When comparing with the results of the previous survey, the main changes are: (i) an extension of the beneficiaries of ART techniques (and IUI), evident in nine countries; (ii) public financial support exists now in Albania and Armenia; (iii) in Luxembourg, the only ART centre expanded its on-site activities; (iv) donor-conceived children are entitled to know the donor identity in six countries more than in 2018; and (v) four more countries have set a maximum number of oocyte donations.

LIMITATIONS, REASONS FOR CAUTION: Although the responses were provided by well-informed and committed individuals and submitted to double checking, no formal validation by official bodies was in place. Therefore, possible inaccuracies cannot be excluded. The results presented are a cross-section in time, and ART and IUI frameworks within European countries undergo continuous modification. Finally, some domains of ART activity were deliberately left out of the scope of this survey.

WIDER IMPLICATIONS OF THE FINDINGS: Our results offer a detailed updated view of the ART and IUI situation in European countries. It provides extensive answers to many relevant questions related to ART usage at the national level and could be used by institutions and policymakers at both national and European levels.

STUDY FUNDING/COMPETING INTEREST(S): The study has no external funding, and all costs were covered by ESHRE. There were no competing interests.

Keywords: ART / IVF / ICSI / IUI / gamete donation / embryo donation / legislation / public funding / registry / fertility preservation

Introduction

Access to healthcare in general has multiple dimensions (availability, accessibility, acceptability, equity, and quality). In particular, access to fertility care and, even more, to ART (and IUI) treatments has peculiar social and ethical sensitive implications based on economic, cultural, and religious grounds, which translate into political decisions. So, it is not unexpected that different societies have adhered to their use under diverse perspectives. Disparities among countries can be due to affordability but also mirror how the existence of children is valued and how societies face differences, such as sexual orientation or the use of gamete donation, for instance. Therefore, not only socio-economic status per se but also several other circumstances can account for inequities in access to infertility care. Despite the continuous increase in the use of ART techniques over time in Europe, as shown by the European IVF-monitoring consortium (EIM) reports (Smeenk et al., 2023), barriers for access to ART (and IUI) are still a reality in most countries.

To gather information on the situation in the different European countries, a survey was performed some years ago under the umbrella of the EIM, and the results confirmed the complex diversity among European countries (Calhaz-Jorge et al., 2020). As societies are in continuous modification, it was decided to repeat the survey and expand it to new topics. So, the present article intends to provide an updated picture of the legislation, regulations, public funding, and registry systems on ART and IUI in Europe on 31 December 2022 and to highlight the main changes that have occurred since 2018.

Materials and methods

A survey was designed using the SurveyMonkey tool including a total of 90 questions on several domains: legal frames, regulations, funding frames, and registries. Most of the previously asked questions were repeated and a set of new ones focussing

on matters not addressed before was added. Special attention was devoted to third-party donation and some specific situations (fertility preservation, surrogacy, and transgender or post-mortem ART/IUI). Questions on the quantity of cryopreserved material and on quality control measures were also included. All EIM members were invited to participate. As stated above, answers refer to the countries' situations on 31 December 2022.

Information received were transposed to an Excel file and checked. Initial responders were asked to clarify doubtful points and to provide any additional relevant information. Tables resulting from the consolidated data were sent to members of the Committee of National Representatives (CNR) of ESHRE, asking for a second check. This procedure was considered an external auditing since, with rare exceptions, members of the CNR are not members of EIM. Conflicting information was clarified by direct contact.

Results

Data were received from 43 out of the 45 European countries in which ART and IUI are performed (Azerbaijan and Russia are missing). Bosnia and Herzegovina are divided of two individual political entities—Federation of Bosnia and Herzegovina, and Republika Srpska. Their answers are presented separately when appropriate. Occasionally, countries could not provide complete responses to all queries.

Accessibility

Legal framework

Most countries referred to having specific legislation on ART. Exceptions were Bosnia and Herzegovina (Rep), Ireland, Luxembourg, Slovakia, and Ukraine.

Accessibility is legally restricted to heterosexual couples in eight countries: Bosnia and Herzegovina, Czech Republic, Italy, Lithuania, Poland, Slovakia, Slovenia, and Turkey. In five

(Belgium, Malta, Romania, The Netherlands, and UK), ART and IUI techniques are permitted also for single women and female and male same sex couples. Most countries are somewhere between these two situations, with a total of 33 offering treatments to single women and 19 offering treatment to female couples.

Use of donated sperm in ART and IUI is allowed in the majority of countries, with Bosnia and Herzegovina and Turkey being the exceptions. However, participants from Croatia stated that no local donors are available in the country and, for the moment, patients are treated in another EU country with costs of medical treatment covered by national health insurer according to the reimbursement rates in the country where the patients are treated. In Montenegro, no local donors are available as well and sperm must be imported from abroad. In Romania, 99% of the clinics use sperm (and oocytes) from banks abroad. Oocyte donation is not permitted in Bosnia and Herzegovina, Germany, Luxembourg, Switzerland, and Turkey. Although legally allowed in Italy and Montenegro, local oocyte donations are not being performed. In Croatia, due to a lack of donors, patients are treated in another EU country, with complete public reimbursement. The simultaneous donation of sperm and oocytes is not permitted in the countries where oocyte donation is forbidden, but also in Austria, Croatia, Montenegro, Norway, Serbia, and Slovenia. Embryo donation is not allowed in 14 countries (Austria, Belarus, Bosnia and Herzegovina, Bulgaria, Denmark, Iceland, Italy, Luxembourg, Norway, Romania, Slovakia, Slovenia, Switzerland, and Turkey). Information on individual countries is shown in [Table 1](#).

Countries also differ with respect to the availability of some techniques ([Supplementary Table S1](#)). PGT for monogenic disorders/chromosome structural rearrangements (PGT-M/SR; formerly PGD) is allowed in all countries except Bosnia and Herzegovina (Rep), Iceland, Luxembourg, and Serbia. PGT for aneuploidies (PGT-A; formerly PGS) is not permitted in those three countries as well as in Denmark, France, Hungary, Lithuania, Norway, Sweden, and The Netherlands. Embryo sex selection (outside PGT-M for sex-linked diseases) is possible only in Armenia.

Surrogacy is allowed in Albania, Armenia, Belarus, Belgium, Cyprus, Czech Republic, Georgia, Greece, Kazakhstan, Portugal, Republic of North Macedonia, Romania, The Netherlands, UK, and Ukraine. Details will be mentioned later.

Legal limits for access to ART

In addition to the already described marital/sexual status of patients, representatives of 31 out of the 43 countries described legal age limits for candidates to ART ([Table 2](#)). In 25, males and females must be 18 years old or above. Armenia, Belgium, Czech Republic, Kazakhstan, Malta, and the Netherlands define a minimal female age but have no such limitation for males. Maximum female age is also a legal limit in 23 countries, ranging from 42 years in France (this limit applies to oocyte retrievals while embryo replacement and IUI are allowed up to 44 years) to 54 in Greece. In Finland, this limit is the decision of the individual centre and ranges from 40 to 47 years. Male maximum age is legally set in Albania (50 years) and France (59 years) and is recommended in Finland (60 years) and Luxembourg (65 years). Other potential legal/regulatory limitations were explored: maximum BMI (in kg/m²), female active smoking, male active smoking, and previous children of the couple/woman. None was referred to be a legal constraint for access to ART except female BMI in Serbia (must be not higher than 30 kg/m²).

Public funding

The relative importance of public and private ART centres is extremely diverse across countries ([Table 3](#)). In Armenia, Ireland, and Poland, only privately-owned centres exist but in Armenia patients can get public funding for treatments performed in those centres. In Hungary and Luxembourg, only public centres provide ART services, but receive private patients as well. In Austria, Belgium, Bosnia and Herzegovina (Fed), Bulgaria, Cyprus, Czech Republic, Estonia, Iceland, Georgia, Latvia, Lithuania, Republic of Moldova, and UK, there is no distinction between the private and public sector. In most of these (Bosnia and Herzegovina—Rep being the exception) either patients get funding for performing ART in private centres or public centres receive private patients. All the other countries have distinct publicly funded and completely private ART centres, although in most of them private centres can treat publicly funded patients under specific contracts. In France and Belgium, social security funds ART/IUI patients the same way whatever the centre status is, as for any other medical/surgical procedure in the country. The number of ART centres is limited by legislation in Belgium, France, Germany, Luxembourg, Norway, and The Netherlands.

Belarus allocates no public funds for ART patients. Some other countries have only residual financial support. It is the case of Ireland, medication is reimbursed according to the general rule for any drugs in medical situations, and gamete and embryo cryopreservation (but not subsequent use) is funded for oncology patients in one private centre. In Poland, there is also no national public funding. However, some local governments partially reimburse the costs of IVF treatment; the number of programmes and clinics involved varies on a yearly basis. Finally, in Switzerland no funds are available for ART except for medical freezing and IUI ([Supplementary Table S2](#)).

Limits for public funding

Access to public funding has some legally defined limiting criteria in 37 of the 39 countries with public financial support to ART (with Bosnia and Herzegovina (Rep) and Finland being the exceptions). Maximum female age is a limiting criterion for public funding/reimbursement in 29 out of the 34 countries ([Table 4](#)). It ranges from 36 years in Armenia to 50 years (for cycles with donated oocytes) in Montenegro, with 40 years being the most frequent cut-off. In Finland the maximum female age is decided by the ART centres and in Greece, following a case-by-case approval by the National Authority of Medically Assisted Reproduction, female patients aged 50 to 54 years old may get public funded treatments. No age limit is present in Bosnia and Herzegovina (Fed) and Iceland. Cyprus, Georgia, and Slovenia provided no information. There is diversity across regions of UK. Male maximum age allowing eligibility for public funding is stated in just a few countries: 49 years in Germany and Austria, 55 years in Spain, 56 years in Sweden, 59 years in France, and 60 years in Finland (not in law but in practice in the latter).

Another relevant limitation for public funding relates to the existence of previous children ([Table 4](#)). In Bosnia and Herzegovina (Fed), Denmark, Malta, Norway, Portugal, Spain, Sweden, and Turkey, a couple (or single women, when applicable) with (a) child(ren) have restrictions to public assistance for ART. In Spain, Sweden, and Turkey, no publicly funded ART is available if the couple (or single women) has a child(ren) of their own (in Spain, only a healthy child prevents public reimbursement). The existence of one spontaneously conceived healthy child does not preclude access to public funding for ART in Portugal and Serbia whereas in Montenegro and Norway two is

Table 1. Legislation on ART in European countries.

Countries	Is there a specific ART law?	Gametes										Embryos			
		Who can have access to IVF/ICSI										Who can have access to IVF/ICSI with embryo donation?			
		With donated sperm?			With donated oocytes?			With donated sperm plus donated oocytes?				Heterosexual couples	Female couples	Single women	Male couples
		Heterosexual couples	Female couples	Single women	Heterosexual couples	Female couples	Single women	Heterosexual couples	Female couples	Single women	Male couples				
Albania	Yes	x		x	x			x				x			
Armenia	Yes	x		x	x		x	x		x		x		x	
Austria	Yes	x	x		x	x									
Belarus	Yes	x		x	x		x	x		x					
Belgium	Yes	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bosnia and Herzegovina —Fed	Yes														
Bosnia and Herzegovina —Rep	No														
Bulgaria	Yes	x		x	x		x	x		x					
Croatia	Yes	x		x	x		x								
Cyprus	Yes	x		x	x		x	x				x		x	
Czech Republic	Yes	x			x			x				x			
Denmark	Yes	x	x	x	x	x	x	x	x	x	x				
Estonia	Yes	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Finland	Yes	x	x	x	x	x	x	x	x	x	x	x	x	x	x
France	Yes	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Georgia	Yes	x		x	x		x	x		x		x		x	
Germany	Yes	x	x*	x*				Oocyte donation not allowed				x			
Greece	Yes	x		x	x		x	x		x		x		x	
Hungary	Yes	x		x	x			x				x			
Iceland	Yes	x	x	x	x	x	x	x	x	x	x				
Ireland***	No	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Italy	Yes	x**			x**			x**							
Kazakhstan	Yes	x		x	x		x	x		x					
Latvia	Yes	x		x	x		x	x		x		x		x	
Lithuania	Yes	x**			x**			x**				x**			
Luxembourg	No	x	x	x				Oocyte donation not allowed							

(continued)

Table 1. Continued

		Gametes										Embryos					
		Who can have access to IVF/ICSI										Who can have access to IVF/ICSI with embryo donation?					
Is there a specific ART law?	Countries	With donated sperm?				With donated oocytes?				With donated sperm plus donated oocytes?				Heterosexual couples	Female couples	Single women	Male couples
		Heterosexual couples	Female couples	Single women	Male couples	Heterosexual couples	Female couples	Single women	Male couples	Heterosexual couples	Female couples	Single women	Male couples				
Yes	Malta	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Yes	Montenegro	x		x		x		x						x			
Yes	Norway	x	x	x		x											
Yes	Poland	x				x				x							
Yes	Portugal	x	x	x			x	x		x				x		x	
Yes	Republic of Moldova	x		x		x		x		x				x		x	
Yes	Republic of North Macedonia	x		x				x		x				x		x	
Yes	Romania	x	x	x	x	x	x	x	x	x	x	x	x				
Yes	Serbia	x		x		x		x						x		x	
No	Slovakia	x				x				x							
Yes	Slovenia	x															
Yes	Spain	x	x	x		x	x	x	x	x	x	x	x			x	
Yes	Sweden	x	x	x		x	x	x		x	x	x	x	x	x	x	
Yes	Switzerland	x	x														
Yes	The Netherlands	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Yes	Turkey																
Yes	UK	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
No	Ukraine	x		x		x		x		x							

* Germany: Not possible in some areas.

** Lithuania: Only couples who are married or have a registered partnership.

*** Ireland: Access for male couples—No legal prohibition, but not performed.

Table 2. Legal limits for ART access.

Countries	Are there legal limits?	Female		Male	
		Minimal age	Maximum age	Minimal age	Maximum age
Albania	Yes	18	50	18	50
Armenia	Yes	18	53	No	No
Austria	Yes	18	No	18	No
Belarus	Yes	18	49	18	No
Belgium	Yes	18	45 for oocyte retrieval; 47 for embryo transfer	No	No
Bosnia and Herzegovina—Fed	Yes				
Bosnia and Herzegovina—Rep	No ART law	No		No	
Bulgaria	Yes	18	51	18	No
Croatia	Yes	18	No	18	No
Cyprus	Yes	18	50	18	No
Czech Republic	Yes	18	49	No	No
Denmark	Yes	18	45	18	No
Estonia	Yes	18	50	18	No
Finland	No**	18	40–47	18	60
France	Yes	18	42 for aspiration and oocyte donation recipient; 44 for FET and IUI	18	59
Georgia	No				
Germany	Yes	No	No	No	No
Greece	Yes	18	54♦	18	No
Hungary	Yes	No	Until reproductive age	No	No
Iceland	No				
Ireland	No ART law				
Italy	Yes	18	46	18	No
Kazakhstan	Yes	19	No	No	No
Latvia	Yes	18	No	18	No
Lithuania	Yes	18	No	18	No
Luxembourg	No ART law	No	45	No	65
Malta	Yes	25	48	No	No
Montenegro	Yes	18	50	18	No
Norway	Yes	No	46	No	No
Poland	No				
Portugal	Yes	18	49	18	No
Republic of Moldova	Yes		50		No
Republic of North Macedonia	Yes	18	No	18	No
Romania	Yes	18	48 (own oocytes); 50 (donated oocytes)	18	No
Serbia	Yes	18	45	18	No
Slovakia	No ART law	18	50 (ethical)	18	
Slovenia	Yes	18	No	18	No
Spain	Yes	18	No*	18	No
Sweden	Yes	18♣	No	18♣	No
Switzerland	No				
The Netherlands	Yes	18	49	No	No
Turkey	No	18	No	18	No
UK	No				
Ukraine	No ART law	18	No	18	No

* Spain: Recommendation of the professional societies—50 years.

** Finland: Clinics can define the age limits themselves. The legislation states that 'no treatment can be given if the pregnancy would cause a significant risk to the health of the woman or the child due to the woman's age or state of health'.

♦ From the age 50 to 54, approval from the National Authority of Medically Assisted Reproduction is required which is valid for 12 months.

♣ Sweden: Minimal age in some regions is 25.

the limit. However, in Portugal and Sweden only one live birth resulting from ART is reimbursed (although Portuguese patients and those of some Spanish regions in that situation can get reimbursement to frozen embryo transfers (FET) of the remaining embryos). A maximum female BMI is a limit for getting financial support for ART in Finland (used in practice, not a legal imposition), Romania, Serbia, Spain, and some areas of UK (dependent on the UK nation or English region).

In Austria, Belgium, Bosnia and Herzegovina (Fed), Czech Republic, Denmark, Latvia, Republic of North Macedonia, Serbia, Slovenia, and The Netherlands, public funding is linked to a clinical policy (Supplementary Table S2), namely the number of embryos transferred related to female age and/or the rank of the treatment attempt. With slight differences, elective single

embryo transfer (eSET) in the first two ART cycles in women up to 35 years (38 years in The Netherlands) is by far the most frequent rule. In Austria funding, is only available in presence of medical indication (bilateral tubal defect, endometriosis and/or PCOS, and/or male factor infertility) and the number of transferred embryos must be based on national guidelines. No details were given for Bosnia and Herzegovina (Fed) and Serbia. In UK, the diversity across the country again makes it impossible to get a clear picture.

To establish contracts with the public funding system, centres must have a minimum success rate in Austria, Bulgaria, Latvia, and Romania. A special case is Hungary where no minimum success rate is mandatory, but centres receive extra amount of money for each live birth resulting from ART.

Table 3. Public versus private sector in ART.

Countries	Are there totally separated public funded and completely private ART centres?	Are there public centres that receive also private patients?	Are there private centres that receive also publicly funded patients?	Is the number of ART centres limited by legislation?
	Proportion			
Albania	Yes	No		No
Armenia			Yes	No
Austria	No	Yes	Yes	No
Belarus	Yes	No	Yes	No
Belgium	No	Social security funds ART/IUI patients the same way whatever the center status is		Yes
Bosnia and Herzegovina—Fed	Yes	No	Yes	No
Bosnia and Herzegovina—Rep	No	No	No	No
Bulgaria	No	Yes	Yes	No
Croatia	Yes	Yes	Yes	No
Cyprus	No	No	Yes	No
Czech Republic	No	Yes	Yes	No
Denmark	Yes	No	No	No
Estonia	No	Yes	Yes	No
Finland	Yes	No	Yes	No
France	Yes	Social security funds ART/IUI patients the same way whatever the center status is		Yes
Georgia	No	No	Yes	No
Germany	Yes	Yes	Yes	Yes****
	23 public (university clinics); 121 private			
Greece	Yes	Yes	Yes	No
Hungary		Yes		No
Iceland	No	No	Yes	No
Ireland			Yes**	No
Italy	Yes	Yes	Yes	No
Kazakhstan	Yes	Yes	Yes	No
Latvia	No	No	Yes	No
Lithuania	No	Yes	Yes	No
Luxembourg		Yes		Yes
Malta	Yes	No	No	No
Montenegro	Yes	Yes*	Yes	No
Norway	Yes	Yes	No	Yes
Poland			No***	No
Portugal	Yes	No	Yes	No
Republic of Moldova	No	No	Yes	No
Republic of North Macedonia	Yes	Yes	Yes	No
Romania	Yes	Yes	Yes	No
Serbia	Yes	Yes	Yes	No
Slovakia	Yes	Yes	Yes	No
Slovenia	Yes	Yes	No	No
Spain	Yes	Yes (exceptional)	Yes	No
	46 (+54 performing IUI only) public centers; 231 private			
Sweden	Yes	Yes (for siblings in FET cycles)	Yes	No
Switzerland	Yes	Yes	Yes	No
The Netherlands	Yes	Yes	Yes	Yes
Turkey	Yes	Yes	Yes	No
	(approx) 25% public; (approx) 75% private			
UK	No	Yes	Yes	No
	There's a mixture of private, NHS/private and NHS clinics			
Ukraine	Yes	Yes	Yes	No
	5 public; >70 private			

* Montenegro: Could be but never happened since public center is limited with number of drugs.

** Ireland: Only for fertility preservation in oncological patients.

*** Poland: No national public funding programme; some local governments provide partial reimbursement of the IVF treatments costs (the number of programs and clinics involved varies from year to year).

**** Germany: Each state province decide on this.

The maximum number of cycles publicly funded is quite different from country to country. Three is the most common limit (in 13 countries). In the Czech Republic, the total number of reimbursed cycles increases from three to four if the two first attempts include eSET. In Finland, the common rule is that three IVF cycles or six IVF + IUI cycles (e.g. two IVF cycles after four IUI cycles) are funded. Patients in Romania can get public financial support for one cycle from the Ministry of Health programme

and three from the Family Ministry. In Latvia and Lithuania, two cycles are funded. In Austria, Bulgaria, Cyprus, France, Iceland, and Luxembourg, up to four cycles are publicly supported. In Croatia, patients can get public financial support for four stimulated IVF cycles and two natural IVF cycles, with no limit number for FET cycles. Hungary offers assistance for five cycles, and Belgium and Slovenia for six. Again, the situation in UK, with its regional particularities precludes valuable detailed information.

Table 4. Limitations for public funding in ART.

Countries	Are there legal limits?	Female		Male		Female BMI	Existence of previous children
		Minimum age	Maximum age	Minimum age	Maximum age		
Albania	Yes						
Armenia	Yes	20	36(IVF)/43 (IUI)	18	49		
Austria	Yes	18	39	No public funding at all			
Belarus	Yes	18	45				Yes
Belgium	Yes	No	No	No	No		
Bosnia and Herzegovina—Fed	Yes						
Bosnia and Herzegovina—Rep	Yes						No
Bulgaria	Yes	18	43	18	No		
Croatia	Yes	18	42		No		
Cyprus	Yes						
Czech Republic	Yes	18	40	18	No		
Denmark	Yes	40	40	No	No		Yes for IVF/ICSI. For IUI there are no limitations
Estonia	Yes	18	40	18	No		
Finland	No	18	40*	18	60*	35*	
France	Yes	18	42 for aspiration cycle; 44 for ET, use of preserved oocyte and embryo donation	18	59		No
Georgia	Yes						
Germany	Yes	25	39	25	49		No
Greece	Yes	18	54**	18			
Hungary	Yes		45				
Iceland	Yes	No	No	No	No		
Ireland			No public funding (except medication and oncology cryopreservation)				
Italy	Yes		46 (homologous and donor cycles)				
Kazakhstan	Yes		42				
Latvia	Yes		40		No		
Lithuania	Yes		42		No		
Luxembourg	Yes		43	18			
Malta	Yes	18	48		No		Yes
Montenegro	Yes		45 (homologous cycles); 50 (donor cycles)		No		4 cycles for couples with no children; 3 with 1 kid; 2 cycles with 2 kids
Norway	Yes		46				Maximum two children
Poland			No governmental funding; some local governments partially reimburse the costs of IVF treatment (decision on a yearly basis)				
Portugal	Yes	18	40 (IVF); 42 (IUI)	18	No		1 child with current partner do not exclude from reimbursement except if the child resulted from publicly funded ART (in that case, reimbursement is available only for FET of left-over embryos)

(continued)

Table 4. Continued

Countries	Are there legal limits?	Female		Male		Existence of previous children
		Minimum age	Maximum age	Minimum age	Maximum age	
Republic of Moldova	Yes	21	45		No	
Republic of North Macedonia	Yes	18	No	18	No	
Romania	Yes		48		No	
Serbia	Yes	18	45	18	No	Child(ren) with previous partners and/or one child with current partner do not exclude from reimbursement
Slovakia	Yes	18	40	18		
Slovenia	Yes	18		18		
Spain	Yes	18	40***	18	55	No publicly funded IVF if children of their own (in some regions FET funded if frozen embryos are available from a previous stimulation cycle)
Sweden	Yes	18♣	40 fresh (45 for FET)	18♣	56	Only one child reimbursed by public funding. No publicly funded IVF if children of their own
Switzerland			No public funding at all (except for oncology cryopreservation and storage of gametes)			
The Netherlands	Yes	18	42		No	
Turkey	Yes	23	39	18	No	No public funding if the couple has a common child. Having children with former partners do not preclude public funding.
UK	No		Dependent on UK nation or English region			
Ukraine	Yes	19	40	19	No	

BMI, body mass index.

* Finland: Values most used in practice. The legislation states no BMI limit neither maximum age limits. Public clinics can define their own age limits.

** Greece: For ages 50–54, approval by the National Authority of Medically Assisted Reproduction is needed, which is valid for 12 months.

*** Spain: Different policies among regions. Madrid region: Own oocytes till 42 and oocyte donation until 44.

♣ Sweden: Minimal age in some regions is 25.

In Bosnia and Herzegovina, Georgia, and Republic of Moldova, there is a limited number of cycles under public financial support, but the actual figure was not reported. No maximum number of reimbursed cycles is defined in Albania, Estonia, Kazakhstan, and Serbia.

Some details are relevant in this complex area. In Austria, the subsidized number of cycles is per clinical pregnancy with no defined limit for the number of pregnancies. The limit in Denmark is three fresh embryo transfers or five started cycles (FET cycles not included) and extra treatments can be funded in case of miscarriage. Several countries have specific stipulations for situations of live birth resulting from ART: in France, Hungary, and Slovenia, four additional cycles are publicly funded for a second child after a successful treatment. In Republic of North Macedonia, patients are entitled to three additional cycles for a second or third child.

Not all allowed ART techniques benefit from public financial support in 23 countries. None of the PGT techniques are reimbursed in Armenia, Austria, Bulgaria, Czech Republic, Germany, Greece, Hungary, Iceland, Latvia, Luxembourg, Montenegro, Republic of North Macedonia, Switzerland, and Ukraine. PGT-A is not funded in Belgium and Turkey. Cryopreservation of gametes and embryos is not publicly funded in the Czech Republic and Germany. Iceland, Republic of North Macedonia, and Ukraine stated that only standard IVF/ICSI get public funds, and the Czech Republic and Slovakia stated that ICSI receives no public financial support. FET is not publicly funded in Czech Republic, Germany, and Hungary. In Montenegro, the public support for FET depends on the number of children of the couple.

ART techniques are considered not equally publicly funded across the country in Georgia, Italy, Kazakhstan, Republic of Moldova, Spain, and UK.

What is public funding available for?

Considering three main areas of expenses in an ART cycle (medication costs, doctor/medical costs and lab costs), three different patterns could be identified across Europe: (i) public funding to all three areas of ART treatments performed either in public or in private centres—25 countries; (ii) public funding for drugs in public and private centres, but for doctor/medical and lab costs only in public centres—4 countries; and (iii) public funding for drugs, doctor/medical and lab costs in public centres only—10 countries ([Supplementary Table S3](#)). As already stated, no public funding at all is available in Belarus and is highly limited in Ireland, Poland, and Switzerland.

Must patients pay a proportion of costs of ART publicly funded cycles?

Patients do not have to pay a proportion of the costs in Albania, Armenia, Bosnia and Herzegovina (Rep), Bulgaria, Croatia, France, Georgia, Hungary, Kazakhstan, Malta, Montenegro, Republic of North Macedonia, Serbia, and Spain. In Slovenia, it depends on the insurance coverage of the patients. In Latvia, there are no costs regarding medications and laboratory, but patients must pay a small fee for doctor/medical services ([Supplementary Table S4](#)).

Countries with public funding for medication can follow different systems as far as costs paid by patients are concerned: (i) a fixed proportion of the total cost—11 countries; (ii) a settled maximum amount to be paid—7 countries; (iii) costs above a defined limit—2 countries; (iv) costs depending on insurance contracts—1 country; and (v) costs depending on the local/regional Health Authority—1 country. No details were provided by Italy, Lithuania, Poland, and The Netherlands.

With regard to the two other areas of an IVF/ICSI cycle costs (doctor/medical costs and lab costs), the situation is even more complex, as shown in [Supplementary Table S4](#).

Tax deductions

Tax deductions for expenses resulting from ART treatments can be considered another aspect of financial public assistance. Respondents identified this possibility in 10 countries: Austria, Germany, Iceland, Ireland, Italy, Latvia, Portugal, Switzerland (depends on the Canton of residence), The Netherlands, and Ukraine. Details are provided in [Supplementary Table S5](#).

Waiting lists for IVF/ICSI

Waiting time for treatment is a negative factor in accessibility to ART. Although there is an important variability, our results show that, not unexpectedly, public centres have by far longer waiting lists than private ones ([Supplementary Table S6](#)). For public centres, waiting lists do not exist in 21 countries. However, waiting time varies between 12 and 24 months in Spain and some areas of Portugal, and between 6 and 12 months in 15 countries and the rest of Portugal. For private centres, the waiting time for ART treatments can be up to 6 to 12 months in Albania, Estonia, France, Iceland, Italy, Kazakhstan, Romania, and Slovakia; no country reported waiting lists over 12 months in private centres.

Particular situations

Preservation of the fertility potential

Cryopreservation of gametes in the presence of medical conditions that put fertility at risk is allowed in all countries despite the absence of specific legislation in 11 of them ([Supplementary Table S7](#)). The same is true for the cryopreservation of gonadal tissue (except for in Albania and Bosnia and Herzegovina where the technique is not utilized). Embryo cryopreservation for medical conditions is not permitted in Italy and Portugal, it is possible at the two pronuclear stage only in Germany (outside PGT cycles, or in unforeseen situations where it is also allowed in all cycles), and it is performed in all other countries. Non-medical oocyte freezing is not permitted in Austria, Hungary, Lithuania, Malta, Poland, Slovenia, and Turkey, and it is not performed in Bosnia and Herzegovina, Luxembourg, and Republic of Moldova, in spite of the absence of legislation that outlaws the technique.

Surrogacy

There were 15 countries reporting that surrogacy is either allowed or performed in the absence of specific legislation. Details are included in [Supplementary Table S8](#). Applications must be approved by the Competent Authority and a Court in Cyprus, and a favourable Court decision is also required in Greece. In Belarus, Portugal, and UK, a partner in a couple must provide at least one of the gametes. In Portugal and Ukraine, the surrogate mother cannot be the donor of the oocytes used in the ART procedure. The responder from Armenia reported that surrogate mothers must be under 35 years and have at least one healthy own child.

The transgender situation

Gender reassignment is permitted in 30 of the countries that contributed to the survey ([Supplementary Table S9](#)). No information was obtained regarding the situation in Cyprus. Cryopreservation of gametes and/or gonadal tissue prior to reassignment is allowed in 22 of the responding countries and is not considered in the legal frame in Hungary, Lithuania, Poland, Slovenia, Turkey, and Ukraine. In 18 countries, previously cryopreserved gametes and/or gonadal tissue can be used in future ART

treatments. However, in Germany gametes and ovarian tissue from a transsexual genetic woman cannot be used by another woman; sperm from a transsexual genetic man probably can be used to treat a lesbian partner.

Post-mortem ART/IUI

Use of sperm in post-humous ART and IUI cycles is allowed in 13 countries ([Supplementary Table S10](#)). Additionally, in Bulgaria, Cyprus and Turkey transfers of an already existing embryo to the uterus of the female partner are permitted after the death of the male partner. There is no legal prohibition (though it is probably not performed) in Ireland. In most countries, a time frame is legally defined, and a previous expressed consent of the deceased is mandatory. The exception is Kazakhstan where the performance of the post-mortem techniques depends on the decision of close relatives.

Third-party donation

Legal limits in third-party donations

Sperm donation is limited to men over 18 years in 23 out of the 41 countries where the donation is permitted ([Table 5](#)). The minimal age is 23 years in Albania and Sweden, and 20 in Ukraine; no minimal age is defined in the other countries where the procedure is allowed. Maximum male age for donors is established in 22 countries, ranging from 35 years in Kazakhstan and Slovakia to 50 years in Albania, Belarus, and Spain. The most common maximum age is 40 years. Some limitations on the number of infants originating from the same donor are in place in 34 countries, although in three of them it is just a recommendation and not a legal obligation. The number ranges from one in Cyprus to 10 in France, Greece, Italy, Kazakhstan, and Poland. In 12 out of the 34 countries (Belgium, Denmark, Estonia, Finland, Iceland, Montenegro, Norway, Portugal, Serbia, Slovenia, Sweden, The Netherlands, and UK), there is a maximal number of families/women that may have children resulting from the same donor (from one in Montenegro to twelve in Denmark and The Netherlands). Hungarian representatives reported that there is a limit for the number of children born from the same sperm donor but did not disclose it.

Oocyte donors must be at least 18 years old in 21 out of the 38 countries where the donation is performed ([Table 5](#)). The minimal age is 17 years in France, 23 in Sweden and The Netherlands, and 25 in Norway. The maximum age for oocyte donors is established in 26 countries, ranging from 30 years in Austria to 37 years in France, with most countries setting the limit at 35 years. In Finland, the legislation does not refer to any upper age limits; clinics can define them by themselves. In Hungary and Ukraine, oocyte donors must have at least one child. This condition is considered desirable but not mandatory in the selection of oocyte donors in Romania. The maximum number of donations is specified in 12 countries: from two in France to twenty in Belarus; the most common numbers are four to six. A maximum number of infants originating from the same donor is defined in 26 countries although in 2 of them it is just a recommendation and not a legal requirement. This value ranges from one in Cyprus to ten in France, Greece, Italy, and Poland. In 8 out of the 26 countries (Belgium, Estonia, Finland, Montenegro, Serbia, Slovenia, Sweden, and UK), there is a maximal number of families/single women who may have children from the same oocyte donor (from 1 in Montenegro and Serbia to 10 in UK).

The anonymity issue

The issue of anonymity is addressed in very diverse ways across Europe ([Supplementary Table S11](#)). Regarding gamete donation,

four different scenarios were identified. Strict anonymity is the rule in 16 countries, although disclosure of the donors' identity is possible in some of them, in presence of severe health conditions of the born child. Additionally, non-identifying information about the donors can be made accessible to the beneficiaries only (six countries), to the children only (Slovenia), or to both (four countries). In a second group of 12 countries, anonymity applies to recipients, but the born children can have access to donors' identity when over a defined age. A third scenario is gamete donation under a mixed system (anonymous and non-anonymous) as it was described in 12 countries. In Belarus, non-anonymity is exceptional and involves donors who are relatives. In Belgium, anonymity is mandatory if from a donor bank, but non-anonymous donation is allowed when there is a formal agreement between the donor and the recipient. In Georgia, there are no legal provisions on the anonymity status. In Hungary, Republic of Moldova, and Ukraine, sperm donation is under strict anonymity and oocyte donation must be non-anonymous (only to the beneficiaries, never to the conceived children). In Romania, local donations must be non-anonymous but imported gametes can be from anonymous donors. Finally, non-anonymity is reported as the rule for gamete donations in the UK.

Embryo donation is permitted in 29 countries (in Georgia and Germany, there is an absence of regulation so, it is 'not forbidden'). In 16 countries, strict anonymity is the rule, in 9 countries, the born children can have access to donors' identity when over a defined age, and in three countries (Georgia, Kazakhstan, and UK) non-anonymity is the paradigm. In Greece, both anonymous and non-anonymous embryo donation is performed. Of the 12 countries with a mixed situation for gamete donation, 5 allow embryo donation only under strict anonymity (Armenia, Belgium, Republic of Moldova, Romania, and Ukraine).

Donor screening

European directives regarding screening of infectious diseases in donors are currently enforced in all EU member states and are followed in several countries outside EU. Therefore, the survey tried to explore other dimensions of this topic ([Supplementary Table S12](#)). Our data showed that sperm donors are screened following legal/regulation requirements in 24 countries, as are oocyte donors in 23 countries. In 12 countries (sperm donation) and 10 (oocyte donations) countries, legal/regulation requirements are not defined, with some referring that guidelines from professional organisations are used. An answer was not received from Cyprus, Italy, Malta, Romania, and Serbia.

Blood group is determined in almost all countries, including some with no binding regulations. Haemoglobinopathies are searched for in nine countries (Albania, Denmark, Greece, Kazakhstan, Latvia, Portugal, Republic of North Macedonia, Spain, and The Netherlands) in sperm donors and in six countries (Albania, Greece, Portugal, Republic of North Macedonia, Spain, and The Netherlands) in oocyte donors. In Belgium, this test is performed 'according to the ethnic group of the donor'. Mutations of the cystic fibrosis transmembrane conductance regulator (CFTR) gene are looked for in sperm donors in 15 countries and in oocyte donors in 14 countries, including 2 countries with no binding regulations (Slovakia and Ukraine). Karyotype is mandatory for sperm and oocyte donors in 15 countries. The search for mutations of the gene related with spinal muscular atrophy is performed in Belgium, Czech Republic, Greece, Montenegro (only for sperm donors), Portugal, and Spain. In Czech Republic, Greece, and Spain, gamete donors are also screened for the presence of mutations in the GJB2 gene (a cause of deafness). In Estonia, Greece, Portugal, and Spain, oocyte donors are also

Table 5. Legal limits in third-party donation, where permitted.

Sperm donors				Oocyte donors				
Countries	Age of donors		Maximum no. of infants from the same donor	Age of donors		Parity of donors	Maximum no. of donations	Maximum no. of infants from the same donor
	Minimal	Maximum		Minimal	Maximum			
Albania	23	50	5	18	35		5	5
Armenia		40	7		35		5	7
Austria	18		3	18	30			3
Belarus	18	50		18	35 (anonymous donation); 49 (non-anonymous donation)		20	
Belgium	18	45	Children in 6 families	18	36			Children in 6 families
Bulgaria	18		5	18	34			5
Croatia	18		3	18				3
Cyprus	18	45	1	18	35			1
Czech Republic	18	40		18	35			
Denmark	18		Children in 12 families	18	35		6	
Estonia	18	40	Children in 6 different women	18	35			Children of max 6 different women
Finland	18	40-45***	Children in 5 different women	18	35***			Children of max 5 different women
France	18	44	10	17	37	No	2	10
Georgia								
Germany						Oocyte donation not allowed		
Greece	18	40	10	18	35			10
Hungary			Yes (value not disclosed)		35	Donor must have own child(ren)		
Iceland*			Children in 2 families*					
Ireland								
Italy	18	40	10		35			10
Kazakhstan		35	10		33			4
Latvia	18	45	3	18	35			3
Lithuania	18		5	18				5
Luxembourg			3			Oocyte donation not allowed		
Malta								
Montenegro		40	Children in 1 family		33			Children in 1 family
Norway	18		Children in 6 families	25	36		3	
Poland	18		10	18				10
Portugal	18	45	Children in 8 families	18	35		4	
Republic of Moldova		45	3		35		6	3
Republic of North Macedonia	18		2	18		Preferably with children	2 (recommended)	2
Romania			5 (recommended)					5 (recommended)
Serbia	18	42	One donor can be used for only one woman	18	34			One donor can be used for only one woman
Slovakia		35	3-5 (recommended)		35			3-5 (recommended)
Slovenia	18		Children in 2 families	18				Children in 2 families
Spain	18	50	6**	18	35		6	6
Sweden	23†	45	Children in 6 families	23†	35			Children in 6 families
Switzerland			8			Oocyte donation not allowed		
The Netherlands	18	45	Children in 12 families	23	36		12	
UK			Children in 10 families			At least one healthy child	8	Children in 10 families
Ukraine	20	40		18	36			

* Iceland: Not by law, in practice, the age limit for sperm donors is 23–45, and for oocyte donors, age limit is 23–35; Limit of children from the same sperm or oocyte donor—Not by law, in practice, maximum two families from same donor including children of the family of the donor.

** Spain: Including children of the family of the donor.

*** Finland: The legislation does not refer to any upper age limits. Clinics can define them by themselves.

† Minimal age recommended, not in the legislation (which allows donations over 18 years old).

screened for Fragile X syndrome. Croatia did not provide specifications about the requested tests.

Some countries (Lithuania, Poland, Slovakia, and UK) stated that 'genetic screening for autosomal recessive genes known to be prevalent in the donor's ethnic background according to international scientific evidence, and an assessment of the risk of transmission of inherited conditions known to be present in the family' must be carried out. In Iceland, the law does not specify which tests are required, only that donors should be healthy and free from hereditary diseases.

Donor reimbursement/compensation

Gamete donors have no reimbursement/compensation in Albania, Ireland, Italy, Malta, Romania, and Serbia. In Lithuania, sperm donors have no compensation but this is possible for oocyte donors. In contrast, in Hungary sperm donors may have some compensation and oocyte donors are not entitled for any ([Supplementary Table S13](#)).

Sperm donors have the right to get some reimbursement/compensation for expenses and/or time losses in 32 countries. In eight of them (Denmark, Norway, Portugal, Republic of North Macedonia, Spain, Sweden, The Netherlands and UK), a maximum amount of reimbursement/compensation is defined. In the six countries that reported the amount, it varies from around 40euro (UK) to 70euro (Norway). For Greece, the amount presented is used in practice, with no formal regulation.

Oocyte donors have the right to get some reimbursement/compensation for expenses and/or time losses and/or inconveniences/burden in 31 countries. In 13 of them (Bulgaria, Czech Republic, Denmark, Finland, Greece, Norway, Portugal, Republic of North Macedonia, Slovakia, Spain, Sweden, The Netherlands, and UK), a maximum amount is defined, ranging from around 500euro (Norway) to around 1000 euro (Czech Republic, Slovakia, and Spain). In Greece, the compensation for oocyte donors is 3000 euro. Bulgaria and Republic of North Macedonia stated that the amount cannot exceed three minimal salaries in the country. The different regions of Sweden have different reimbursement systems.

Storage of cryopreserved gametes and embryos

Three questions were asked, concerning (i) the existence of legal limit for the duration of cryopreservation of gametes and embryos, (ii) the possible destinies of the non-used embryos after the end of the storage period, and (iii) who decides on the destiny of the non-used embryos after the storage period ([Supplementary Table S14](#)).

In 13 countries, a legal limit for the duration of gamete storage exists, ranging from 5 years (can be extended) in Turkey to 20 years in Iceland. In 3 countries out of the 13, oocytes can stay cryopreserved until a defined age of the female: 46 years old for Denmark, 49 years old for The Netherlands and 55 years old for UK. In Spain, no legal limit is settled, and the oocytes are kept cryopreserved until the female reaches 50 years old, following recommendations of the professional association. In Latvia, the maximal legal duration of gamete cryopreservation applies only to donated gametes. When dealing with gametes cryopreserved for fertility preservation, the duration of storage is much longer or even without defined limit.

For embryo cryopreservation, 22 countries have a legal maximum duration, from 1 year (can be extended) in Turkey to 20 years in Poland, with 10 years being the most frequent storage duration. Denmark, Spain, and UK reported the same female age limits presented above. For Norway, embryo cryopreservation

may be up to when the female patient is 46 years old. Latvia has a limit of 10 years but only for donated embryos.

Regarding Question 2, embryo donation is possible in 26 countries, research is a possibility in 24, and in 37, destruction can be the fate of the embryos after the end of the storage legal period. In 18 countries, all the three possibilities are accepted. In Italy, embryos must remain cryopreserved forever. In Croatia, there is no settled end for the storage period and the only defined destiny for the embryos is donation; it is not clearly written in the law if the embryos can be destroyed, and research is forbidden.

Concerning the decision-making on the destiny of the non-used embryos after the storage period, 39 countries said that the patients (couple/single women) have the responsibility of the decision. In Armenia, Bosnia and Herzegovina (Rep), Bulgaria, Cyprus, Romania, Slovenia, and Turkey, a legal body can be involved, as well. In Estonia and Malta, the decision is in the remit of a legal body. In a few countries, the decision is independent of the patients' opinion: in Austria the law states that the embryos must be destroyed after the 10 years storage period (but patients are allowed to move the embryos to a foreign country before the end of this deadline); in Poland, according to the Infertility Treatment Act, embryos must be donated after the 20 years of cryopreservation (or after the death of patients); in Turkey, a commission established by the relevant directorate decides on the destiny of the non-used embryos after the storage period.

A different situation is the fate of 'abandoned' embryos. Four countries added comments on that. In Lithuania, if the time for embryos storage expires and it is not possible to contact the couple, the law imposes the donation of the embryos to an embryo bank. In Portugal, the centres have the power to decide to destroy or keep the cryopreservation after the legal maximum 6 years of storage. In Romania, a legal body can intervene if there are legal issues (e.g. a divorce) and in Spain, the centres are allowed to decide the fate of the embryos in case of 'abandoned' embryos after more than 4 years.

Intrauterine insemination

IUI is considered under the national legislation on ART in a total of 33 countries and Bosnia and Herzegovina (Fed). However, in Bosnia and Herzegovina (Fed) and Turkey, this applies to IUI with the husband's sperm only. By contrast, in Latvia, Germany, Sweden, Switzerland, and UK, only IUI with donor sperm is under the ART law. The allowed beneficiaries and resort to donor sperm follow the already described national characteristics ([Tables 1 and 2](#)). Public specific financial support was reported to exist in 24 countries. In 14 out of them, a maximum number of publicly funded cycles was disclosed: up to six IUIs in Armenia, Czech Republic, Estonia, France, Hungary, and (only for in: semination with donor sperm) Sweden, up to four IUIs in Croatia and Slovenia, up to three attempts in Italy and Portugal, and up to two in Turkey. In Spain, four IUI with partner sperm and up to six with donor sperm receive public support. As shown on [Supplementary Table S2](#), in Finland patients receive reimbursement of either three IVF/ICSI cycles or up to a total of six IVF + IUI cycles. In Germany, only married couples have access to financial public support: eight IUI cycles without and three with ovarian stimulation. Details can be found in [Supplementary Table S15](#).

Quality management/inspections

Two questions were asked: the first, about the existence of legal requirements for quality management systems (ISO17052 and/or ISO9001/2000, for instance) was answered negatively by 16 countries and positively by 26. Latvia did not reply. Out of the 26, 12

provided no additional information and 2 sent a link to the legal document used in their country. Details on the other 12 countries are shown in [Supplementary Table S16](#). Most of them follow international standardization documents but in Estonia, Slovakia, Turkey, and Ukraine, centres have the possibility of creating their own quality control system.

The second question inquired about the existence of external visits/inspections to the centres offering the ART services. No such systematic procedure is in place in Bosnia and Herzegovina (Rep), Bulgaria, Cyprus, Georgia, and Republic of Moldova. In contrast, some external assessment is present in 35 countries (plus Bosnia and Herzegovina-Fed). In Poland, it is unclear if centres receive regular external visits/inspections. Details were provided by 20 countries ([Supplementary Table S16](#)). No answer was received from Armenia, Belarus and Romania.

Registries

Some modalities of national registries of ART activity are in place in 33 (plus Bosnia and Herzegovina—Fed) countries participating in the survey, many of them reporting also on IUI ([Supplementary Table S17](#)). Exceptions are Albania, Armenia, Bosnia and Herzegovina (Rep), Estonia, Malta, Montenegro, Norway, Republic of Moldova, Republic of North Macedonia, and Serbia. In Ireland, only donor conception treatments (including IUI) are registered. Registries are mandatory in 26 countries and are organized by a Competent Authority in 11 countries, the Ministry of Health in 10 [including Bosnia and Herzegovina (Fed)], another governmental body in 2, and a professional association in 5. In Belarus, Cyprus, Germany, Spain, and Ukraine, more than one organisation/body participates in the production of the registry. Data quality control is implemented in 22 countries. Plausibility data testing is in place in Austria, Belgium, France, and Sweden. Romania reported data cross checks. Croatia, Portugal, and Serbia communicated that data external audits are integrated in the periodical ART centres inspections, and Spain reported a systematic external audit of data of randomly selected 10–15% of the IVF centres. No details were provided by the remaining 12 countries.

A registry of donors exists in 19 countries and is mandatory in all of them except Iceland. It is organized by a Competent Authority in 7 countries, the Ministry of Health in 10 and more than one institution/organization in Norway. Information on Iceland is missing.

What is different compared with the last survey?

Extension of the access to ART techniques (and IUI) to other beneficiaries could be identified: access to treatment is now possible for single women in Albania and Norway, female couples and single women in France, and legally married female couples in Switzerland. Moreover, oocyte donation is now legally allowed in Norway and (extended to female couples and single women) in Sweden. The same applies to simultaneous sperm plus oocyte donation in France and Sweden, and embryo donation in Armenia, France, Kazakhstan, and Sweden. Additionally, non-medical oocyte freezing is in the current legislation of France, Norway, and Serbia.

Albania and Armenia reported that public financial support is now possible. Minor changes in the reimbursement dispositions occurred also in a few other countries.

Still in the accessibility dimension, two important changes are the installation of an ART centre in Luxembourg and a significant legislative move in Hungary where only public centres are now allowed.

Regarding the anonymity issue in third-party ART/IUI, conceived children are now entitled to know donor identity, when reaching a legal age, in 12 countries ([Supplementary Table S6](#)) instead of the 6 in the last survey. In the area of donors' safety, it must be noted that four more countries have settled a limit to the number of oocyte donations (Albania, Norway, Republic of Moldova, and The Netherlands).

In the registry's domain, although some improvement occurred in a few countries, the general landscape is not significantly different from that in 2018.

Discussion

The present article updates and expand a survey on the situation regarding ART and IUI across Europe published 4 years ago ([Calhaz-Jorge et al., 2020](#)). Accessibility is explored looking at legal and regulatory frameworks, public funding systems, and some specific situations. Particular attention is devoted to sensitive matters namely third-party donations, considering not only the anonymity issue but also the reimbursement/compensation to donors, and technical aspects of the definition of eligible gamete donors and their screening. Another topic touched upon is the decision-making about the destiny of the non-transferred cryopreserved embryos. Finally, registries characteristics and quality control measures are also a focus of this survey.

The collected information confirms marked variations across, and sometimes within, countries. This is not due to the non-existence of legislation, as the practice of ART and IUI is regulated by legal norms in all European countries, despite the absence of specific legislation in a few.

Accessibility (as well as acceptance and usage) of ART in a particular society depends on a complexity of aspects, financial, social, cultural, religious, and political, which are virtually impossible to disentangle. Public financial assistance (either any model of statutory health insurance or direct state funding) is of course a crucial factor for accessibility to these treatments. The data of our survey shows that it is quite variable across countries (and within some of them). Accessibility constraints are mainly related to affordability but also to (more or less) restrictive age limits, with the acceptance (or not) of patients who have already had children and/or to the number of publicly funded treatments. Nevertheless, public funding is not enough to eliminate inequities even in countries characterized by high subsidization of ART services as shown in a study on the socio-demographic characteristics of families in Norway. Using linear probability models to estimate the association between parental income and giving birth after ART, it has been found that parents belonging to the top income quartile were 4.2 percentage points more likely (95% CI: 4.1–4.3) to have conceived through ART than parents who belonged to the bottom income quartile ([Goisis et al., 2020](#)).

The associations between demographic and cultural factors, and the prevalence of ART treatments in 35 European countries were explored by [Präg and Mills \(2017\)](#). The authors described a strong positive linear trend between the average ART normative approval in a country and the number of ART treatments there. They concluded that cultural acceptance of ART is a major driver of ART treatments in the studied countries, above and beyond differences in country wealth, demographic aspects and religious composition. However, a systematic and comprehensive review of the existing fertility research reached the conclusion that ART societal approval is effective in increasing ART usage only when a certain wealth level is reached in a country ([Balbo et al., 2013](#)). In another dimension of this intricate subject, [Berg Brigham et al.](#)

(2013) found that countries with more liberal social eligibility regulations have higher levels of IVF utilization. Another factor frequently linked to the acceptance of ART and IUI, especially when involving gamete donation, is the diversity of attitudes of the different religions towards these therapeutic techniques (Homburg et al., 2018). However, the importance of religious beliefs is quite difficult to pinpoint in individual countries across Europe. All in all, information on permitted techniques and candidates profiling are pivotal in comprehending the usage of those techniques at national levels. In this context, third-party donation is a clear example, as are surrogacy and reproductive services for the transgender population. Our data show how differently European countries deal with these issues.

In any case, some extension of beneficiaries of ART techniques occurred since the first survey. It is virtually impossible to know if this results from cultural changes, population activism or a political environment.

The answers regarding third-party donation showed that more countries allow donor-conceived children to have access to the identity of the donor when reaching legal adulthood than in the past. Regulations for donor screening methodologies are in place in most countries. Although they are quite variable, the most frequent hereditary abnormalities are generally excluded. The expanded genetic screening is not mentioned by any country, therefore the discussion of its value (Payne et al., 2021) is out of the scope of this article. Another relevant issue relates with the reimbursement/compensation of the donors. As reported, it is a reality in more than 30 countries, and the amount involved is obviously different for sperm and oocyte donors, though quite similar among countries with one exception whose compensation is much higher than all the others.

The fate of non-transferred cryopreserved embryos is a quite complex issue and, again, diversity is the paradigm across Europe. First, the maximal duration of the cryopreservation before a final decision on their destiny has great variation (from 1 to 20 years, except in Italy, where the embryos must be kept for ever). Second, the permitted options, donation, research or destruction, are also different throughout countries, and in some no clear dispositions were reported. Third, although in most countries the final decision-makers are the patients, there are some with a different approach.

An increasingly frequent activity related to ART is the preservation of reproductive potential, not only for medical reasons but also as an elective option. Our survey showed that cryopreservation of gametes, gonadal tissue and embryos is performed virtually all over Europe (with some exceptions as far as embryos are concerned), even if no specific legal dispositions are in place. Public financial support apparently follows the same rules as 'classical' ART when a disease is present. On the other hand, elective oocyte cryopreservation, meaning in the absence of identified diseases, is not allowed in seven countries and public funding is not available in many others.

The situation regarding IUI and the national registries had no relevant changes compared with the data collected previously.

One of the main consequences of the above-mentioned disparities among countries is the movement of people seeking ART and/or IUI treatments abroad: the cross-border reproductive care. The need to overcome inequities in home-country such as access to techniques not possible there and more readily available donated gametes, expectations of better-quality treatments and, sometimes, lower treatment costs are key drivers for this phenomenon. Although there are no reliable numerical data, this situation raises considerable concerns about the possibility of

exposing people to less controlled clinical environments. Furthermore, it leads to a lack of tracking of reproductive cells across borders, to a limited knowledge of outcomes, and hampers biovigilance by national authorities. To overcome this problem, a new Code System was proposed (De Geyter et al., 2016). This Individual Reproductive Care Code system would identify individuals travelling across Europe within a system of case-to-case data reporting. This proposal has been included in a project co-funded by EU aiming to establish a standardized, web-based data registry on MAR activities in the EU: the EuMAR project. It intends to set a platform to obtain high-quality cycle-by-cycle data in a consistent manner, allowing for cumulative and cross-border data collection and facilitating data sharing for open science across institutions (De Geyter et al., 2023).

The authors acknowledge some limitations in the present study. Firstly, although the responses were provided by well-informed committed individuals mostly representing the perspective of clinicians and lab specialists, they mirror the interpretation of the legislative documents by hands-on experts, not legal experts. Despite the checking and double-checking procedures adopted, we cannot assume that a proper formal validation was in place, and possible inaccuracies cannot be excluded. Therefore, the data must be considered with some caution. Secondly, our results are a cross-section in time. ART legislations/regulations undergo constant modifications and the situation at the moment of publication can be already different. In fact, we are already aware that legislation in Bulgaria and Estonia and reimbursement systems in Belarus, Finland, and Ukraine have changed in 2023 or 2024. Thirdly, our results represent a legal framework that, in a few countries, may have no full implementation in clinical practice due to a lack of detailed regulation or to practical limitations (shortage/absence of donors, for instance).

In conclusion, this article is a descriptive approach to the very complex reality in the European countries in which ART and IUI are performed. It provides the most complete updated extensive answers to many relevant questions in the use of ART at national levels and attests that the practice of these techniques in Europe is framed by an impressive diversity of social acceptance and public financial systems. The ultimate authors' expectations are that this survey contributes to information for patients and to enriching institutional and policymakers' decisions.

Supplementary data

Supplementary data are available at *Human Reproduction* online.

Data availability

All data are incorporated into the article and its online [supplementary material](#).

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Authors' roles

C.C.-J. designed the survey, analyzed the data, and wrote the article. V.G. performed the technical part of the survey, contacted

the country representatives, and edited the article. All other co-authors reviewed the document and made appropriate corrections and suggestions for improving the document. Finally, this document represents a fully collaborative work.

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Conflict of interest

There are no competing interests.

References

- Balbo N, Billari FC, Mills M. Fertility in advanced societies: a review of research. *Eur J Population* 2013;**29**:1–38.
- Berg Brigham K, Cadier B, Chevreul K. The diversity of regulation and public financing of IVF in Europe and its impact on utilization. *Hum Reprod* 2013;**28**:666–675.
- Calhaz-Jorge C, De Geyter CH, Kupka MS, Wyns C, Mocanu E, Motrenko T, Scaravelli G, Smeenk J, Vidakovic S, Goossens V. The European IVF-monitoring Consortium (EIM) for the European Society of Human Reproduction and Embryology (ESHRE). Survey on ART and IUI: legislation, regulation, funding and registries in European countries. *Hum Reprod Open* 2020;**2020**:hoz044.
- De Geyter C, Calhaz-Jorge C, Goossens V, Magli CM, Smeenk J, Vesela K, Vermeulen N, Wyns C. EuMAR: a roadmap towards a prospective, cycle-by-cycle registry of medically assisted reproduction in Europe. *Hum Reprod Open* 2023;**2023**:hoad011.
- De Geyter C, Wyns C, Mocanu E, de Mouzon J, Calhaz-Jorge C. Data collection systems in ART must follow the pace of change in clinical practice. *Hum Reprod* 2016;**31**:2160–2163.
- Goisis A, Håberg SE, Hanevik HI, Magnus MC, Kravdal Ø. The demographics of assisted reproductive technology births in a Nordic country. *Hum Reprod* 2020;**35**:1441–1450.
- Homburg R, Husain F, Gudi A, Brincat M, Shah A. Religious attitudes to gamete donation. *Eur J Obstet Gynecol Reprod Biol* 2018;**231**:204–209.
- Payne MR, Skytte AB, Harper JC. The use of expanded carrier screening of gamete donors. *Hum Reprod* 2021;**36**:1702–1710.
- Präg P, Mills MC. Cultural determinants influence assisted reproduction usage in Europe more than economic and demographic factors. *Hum Reprod* 2017;**32**:2305–2314.
- Smeenk J, Wyns C, Geyter C, Kupka M, Bergh C, Cuevas Saiz I, De Neubourg D, Rezabek K, Tandler-Schneider A, Rugescu I et al.; European IVF-monitoring Consortium (EIM) for the European Society of Human Reproduction and Embryology (ESHRE). ART in Europe, 2019: results generated from European registries by ESHRE. *Hum Reprod* 2023;**38**:2321–2338.