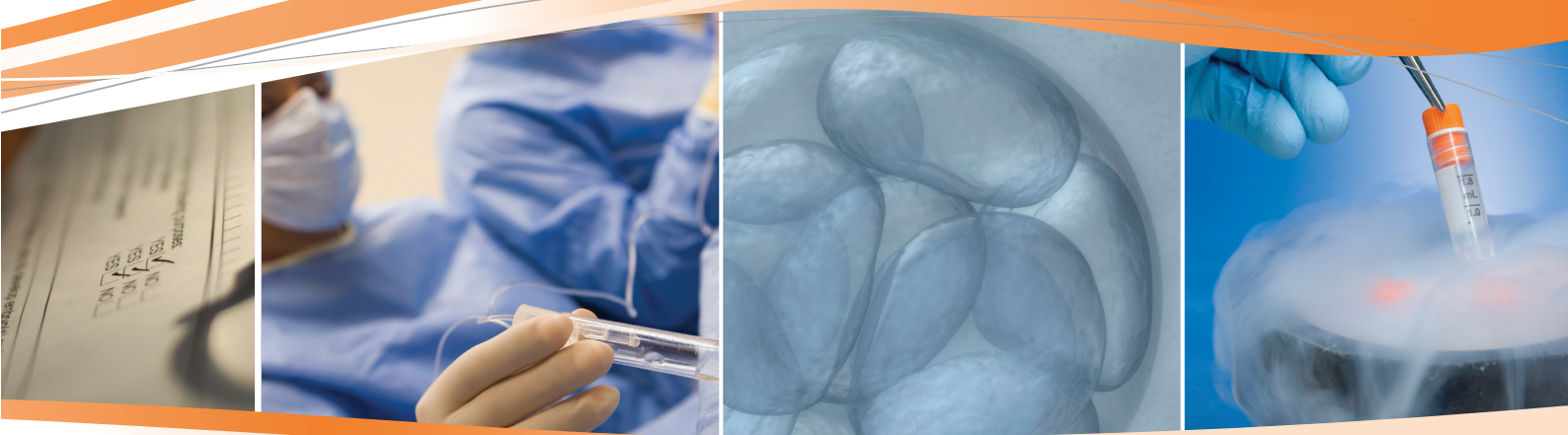


Fertility treatment in 2010



trends and figures

Contents

	Page No:
Foreword by the Chair of the HFEA	3
Summary	4
Section 1: Overview	
How many fertility clinics were there in the UK in 2010?	6
How many women received fertility treatment?	7
How old were the women receiving treatment?	8
Who funded the treatment cycles started in 2010?	8
What types of infertility were treated with IVF or ICSI?	8
What types of cycle were started?	9
How did the age of the woman affect which treatment she received?	10
Fresh and frozen cycles	10
Stimulated and non-stimulated cycles	10
Pre-implantation genetic diagnosis	11
Treatment using donated sperm, eggs and embryos	11
Section 2: Embryo Transfers	
How many embryos were transferred, in total, in 2010?	13
How many embryos were transferred in each cycle?	13
Does the number of embryos transferred differ for cleavage or blastocyst stage embryos?	14
What proportion of transfers were elective SET, and how did this vary by the woman's age?	15
Why are some cycles abandoned before the cycle is complete?	16
Section 3: Results	
Cycles using a woman's own fresh eggs	
How many pregnancies resulted from IVF treatment using a woman's own fresh eggs?	17
How is the pregnancy rate affected by the woman's age?	17
Does the pregnancy rate differ when one or two cleavage or blastocyst embryos are transferred?	18
What is the multiple pregnancy rate for IVF treatment using a woman's own fresh eggs?	19
Does the multiple pregnancy rate differ when one or two cleavage or blastocyst embryos are transferred?	19
What is the live birth rate for IVF treatment using a woman's own fresh eggs?	20
What is the multiple birth rate for IVF treatment using a woman's own fresh eggs??	21
Cycles using frozen embryos from a woman's own eggs	
What is the pregnancy rate for IVF treatment using frozen embryos from a woman's own eggs?	22
How does the pregnancy rate differ by the stage of the thawed embryo?	22
What is the multiple pregnancy rate for IVF treatment using frozen embryos from a woman's own eggs?	23
What was the live birth rate for IVF treatment using frozen embryos from a woman's own eggs?	23
How does the live birth rate for frozen transfers compare to that of fresh transfers?	23
What is the multiple birth rate for IVF treatment using frozen embryos from a woman's own eggs?	24
Cycles using donated sperm, eggs and embryos	
What is the live birth rate for IVF using fresh donor eggs?	25

How does the percentage of cycles using donated eggs change with the woman's age?	25
What is the live birth rate for IVF treatment using donated sperm?	26
What is the live birth rate for Donor Insemination?	26
What is the live birth rate for IVF using donated embryos?	26
How many women took part in egg sharing arrangements, and what was the live birth rate?	27
How many same sex couples had treatment, and what were the success rates?	27
Section 4: Trends	
Short term trends	
How has the elective single embryo transfer rate changed since 2008?	28
How has the proportion of blastocyst transfers changed since 2008?	29
How has the early multiple pregnancy rate changed since 2008?	30
How has the proportion of blastocyst transfers which are single or double changed since 2008?	31
Long term trends	
How has the number of cycles performed each year changed since 1991?	32
How has the number of DI cycles changed as the number of ICSI cycles increased?	33
How has the live birth rate for fresh IVF cycles changed since 1991?	34
How has the age of the women being treated changed since 1991?	35
How many babies have been born as a result of licensed fertility treatment since 1991?	36
How has the percentage of babies born as a result of IVF/DI changed since 1991?	36
Background information	37
Frequently asked questions	39

Chair's foreword

The Human Fertilisation and Embryology Authority holds a unique asset in modern UK medicine: a Register of all licensed treatments and outcomes for assisted reproduction dating back to 1991.

This Register contains detailed information about all IVF and donor treatments and their outcomes – whether the treatment resulted in the birth of a baby or not. The data is provided by clinics, quality assured by the HFEA and then used to inform research, policy making and better regulation. Importantly, the HFEA also publishes much of this information twice a year, on a clinic-by-clinic basis, in order to help patients better understand the choices available to them.



Professor Lisa Jardine
(Photographer: Des Willie)

The Register information that is collated by the HFEA on behalf of the whole fertility sector puts the HFEA in an unrivalled position to inform people about sector performance and the impact of our regulatory interventions.

Because we know how important it is to make a considered analysis of our information as widely available as possible, we are now also committed to publishing regular analytical reports, again, twice per year, one in the spring and one in the autumn. The autumn report describes general trends and figures about fertility treatments based on the latest clinic data (this time about the year 2010). The spring publication is based on a more in-depth analysis of one thematic area of interest (the last one looked in detail at multiple births, and you can find it here: <http://www.hfea.gov.uk/6456.html>).

I am grateful to staff in fertility clinics, and at the HFEA itself, for their effort in getting this information collected, corrected, analysed and published. Whether you are a patient, a clinician, a researcher, or just have an interest in the areas of medicine described in these pages, I very much hope you find this report easy to read, useful and informative.

A handwritten signature in black ink that reads "Lisa Jardine".

Professor Lisa Jardine CBE
Chair

Summary

The HFEA collects data about well over 50,000 fertility treatments performed each year in UK licensed clinics.

We are committed to making good use of this data, and making as much of it as possible available to inform patients, facilitate development in clinical practice, and to pursue the wider aim of keeping the public informed about fertility treatment in the UK.

This report is part of that aim, and is the first in what will now be an annual publication. We have consulted users on the content and presentation, but would welcome feedback on ways to improve it and make it more useful.

Here we present overview information about treatments performed in 2010, and at times, in 2009. We also highlight some changes over time.

As in previous years, the number of treatment cycles performed has continued to rise. The majority of these treatments have been funded by the patients themselves.

The overall pregnancy and live birth rates have remained steady at a time of notable changes to clinical practice – increasing numbers of embryo transfers are of blastocysts stage embryos, and more women are opting to have only one embryo transferred at a time to reduce their risk of a multiple pregnancy. We have also seen the overall multiple pregnancy and multiple birth rates fall.

Since the HFEA was created in 1991, nearly 170,000 babies have been born as a result of the IVF treatment we license. These babies now form almost 2% of the babies born in the UK.

The HFEA remains committed to presenting accessible and useful information about the activities we licence. We will therefore keep monitoring these, and other trends.

Key points:

- Almost all women receiving fertility treatment in 2010 were doing so with the aim of conceiving a child immediately. The majority of these women were aged 37 and under. Most of them funded their treatment privately.
- The most common number of embryos transferred in each treatment cycle is still two. The proportion of embryo transfers which are eSET decreases as women's age increases. Most embryos are transferred when they reach cleavage stage, except in eSET procedures in younger women, when more are transferred at the blastocyst stage.
- The pregnancy rate has remained steady between 2009 and 2010, but the multiple pregnancy rate has decreased.
- After a double blastocyst transfer a much higher percentage of pregnancies confirmed by ultrasound were of two or more fetuses, approaching half in women aged 18 - 34. By receiving eSET this risk is reduced to a similar level of that found in natural conceptions.
- Between 2008 and 2009 the overall live birth rate per cycle started has

remained broadly steady. During the same time period, the overall multiple birth rate has declined. The HFEA will continue monitoring these figures.

- Frozen transfers overall are less successful than fresh ones, but this trend is reversed in women in older age groups. Thawed blastocyst stage embryos seem to be more successful than cleavage stage ones.
- Over half of the women receiving fresh donor eggs are aged over 40. However, live birth rates for donated eggs compare very well with those for patients' own eggs. The live birth rates for IVF using donated sperm, and donated embryos also compare well with those for patients' own eggs.
- Between 2008 and 2010 significant changes have been made in clinical practice; more embryos are being transferred at the blastocyst stage, and as part of an active decision to only transfer one embryo, even if more are available. The resulting multiple pregnancy rate has shown a decline in the same period.
- The number of IVF cycles performed each year has increased steadily since 1991. During that time, the number of DI cycles has fallen, which may be a result of more couples choosing ICSI in order to treat male factor infertility. The live birth rate after IVF has increased from only 14%, to nearly a quarter by 2009. In 2009, nearly 2% of all the babies born in the UK had been conceived through IVF treatment.

Section 1: Overview

► How many fertility clinics were there in the UK in 2010?

In 2010 71 clinics licensed by the HFEA provided fertility treatment¹. The largest number of clinics is in London, see Table 1.

The number of women treated in each region ranged from 1,239 in Northern Ireland, to 13,946 in London. This is based on the location of the clinic, rather than where women live.

We know people may travel to clinics in other regions for treatment and so the higher numbers in London could be partly explained by women travelling there from elsewhere in the UK and also from abroad.

Table 1: Number of clinics performing IVF and DI, by region, and number of women receiving fertility treatment, 2010

Region	Clinics performing IVF	Clinics performing DI	Women treated ²
North East	5	5	1,837
North West	4	4	4,868
Yorkshire & Humber	4	4	2,943
East Midlands	4	5	3,134
West Midlands	7	7	3,287
East of England	4	4	3,004
London	15	15	13,946
South East	10	9	5,240
South West	6	6	2,614
Northern Ireland	2	1	1,239
Scotland	7	7	3,439
Wales	3	4	1,138

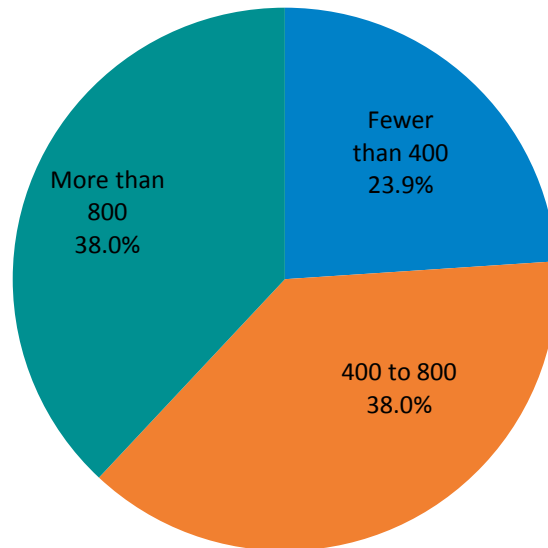
The clinics carried out widely different numbers of treatment cycles, from fewer than 50 IVF cycles in some clinics to over 2,000 IVF cycles performed in others. Around three quarters of clinics performed more than 400 IVF treatment cycles in 2010. Around one quarter of clinics performed more than 1,000.

Figure 1 is overleaf.

¹ This does not include clinics only providing intrauterine insemination (IUI) with partner sperm.

² The sum of this column is greater than the total number of women treated, as some women will have received treatment in more than one location, and will have been counted in both. Additionally, women may have had both DI and IVF treatment in one year, and also been counted in both.

Figure 1: Percentage of clinics performing each number of IVF cycles per year, 2010



► **How many women received fertility treatment?**

In 2010, 45,264 women had a total of 57,652 cycles of IVF or ICSI and 1,985 women had a total of 3,878 cycles of DI.

Of the women who had IVF or ICSI treatment³:

- The vast majority, 43,733 (96.6%), started treatment to try to conceive a baby during that cycle of treatment.
- 1.7% were part of an egg sharing agreement.
- 1.3% had IVF or ICSI to produce eggs or embryos for donation.
- 0.8% had treatment but did not have a transfer straight away but stored their eggs or embryos for later use. This might be, for example, where the woman is not well enough for the embryos to be transferred or where treatment was carried out before the woman had cancer treatment which might affect her fertility. Very few women have treatment specifically to store eggs or embryos for later use without an acute medical reason.

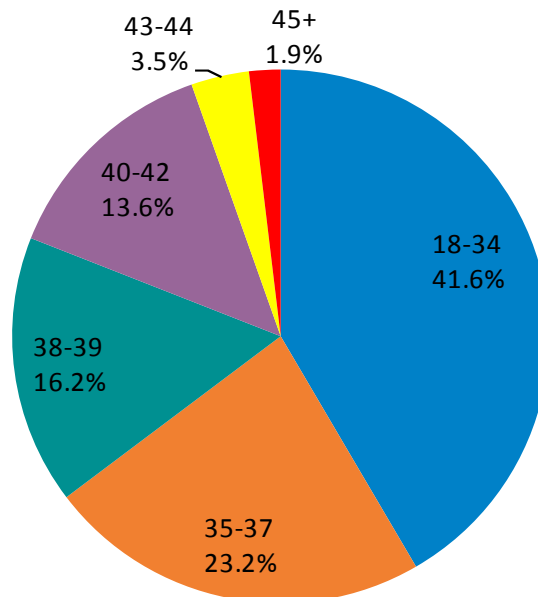
In 2009, 54,451 cycles of IVF or ICSI were performed, and 3,847 of DI. 2010 therefore saw an increase of 5.9% and 0.8% in the number of IVF and DI cycles respectively.

³ Sum is not equal to 100% as some women will have undergone more than one type of treatment in a year and therefore been counted twice in the breakdown, but not in the total.

► How old were the women receiving treatment?

The majority – almost two thirds – of women who received IVF treatment were aged 37 and under.

Figure 2: Percentage of all IVF cycles performed, by age group, 2010



Women having IVF treatment were on average 35.1 years old. The average length of time patients reported trying to conceive was 4.7 years (range 0 to 20 years).

Women having DI treatment were on average 35.2 years old and had been trying to conceive for on average 4.1 years (range 0 to 17 years).

For information on how the ages of women receiving treatment has changed over time, please see Figure 21 and Figure 22.

► Who funded the treatment?

A minority (40.6%) of IVF treatment cycles was funded by the NHS in 2010. The majority (59.4%) were funded privately. In 2009, the figures were similar: 38.5% and 61.5% for NHS and private funding respectively.

For DI, an even smaller minority of cycles was funded by the NHS (18.8%) in 2010; 81.2% were funded privately, with 18.7% (NHS) and 81.3% (private) in 2009.

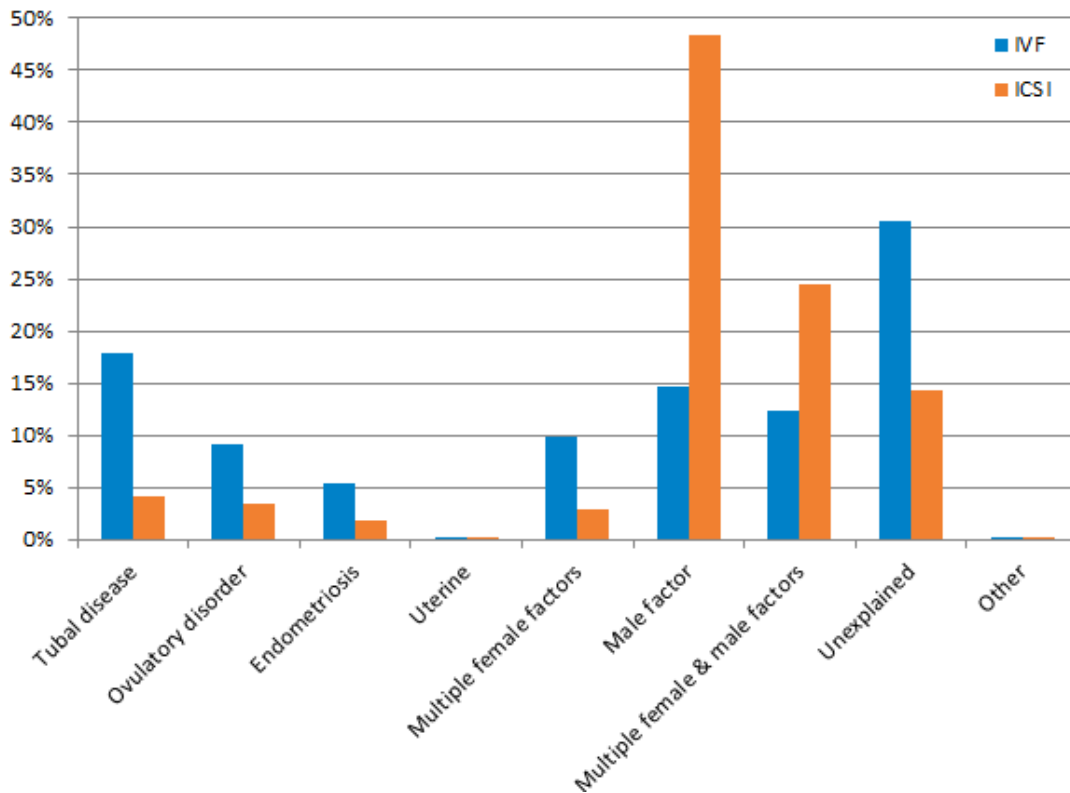
Key points: Almost all women receiving fertility treatment in 2010 were doing so with the aim of conceiving a child immediately. The majority of these women were aged 37 and under. Most of them funded their treatment privately.

► What types of infertility were treated with IVF or ICSI?

Information about the type of infertility a couple are seeking treatment for is collected when patients are registered with the HFEA. The data here is split into those receiving IVF and those receiving ICSI. About half (52.1% in 2009) of fresh treatments involved ICSI. Because ICSI involves the injection of a single sperm into an egg, it can be used in male factor infertility, for instance low sperm count, or low sperm motility. This is reflected in Figure 3, overleaf, where the proportion of male factor infertility treated with ICSI is much greater than that by standard IVF.

Figure 3: Percentages of couples seeking standard IVF or ICSI treatment, by the reason they sought treatment, 2010

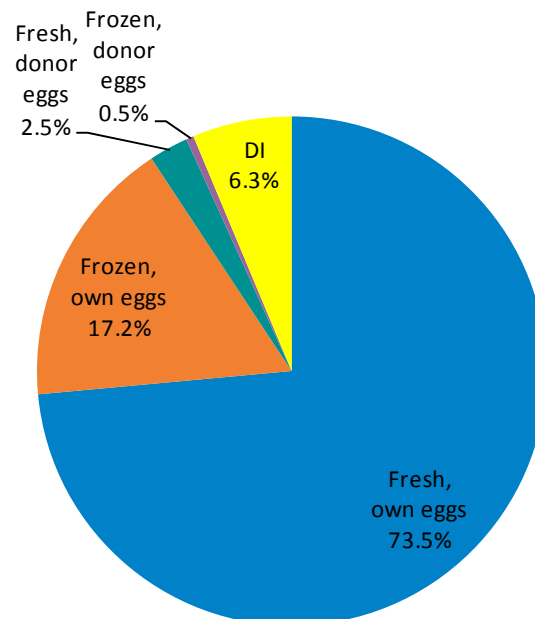
Percentage of cycles started



► **What types of cycles were started?**

In the majority of treatment cycles – almost three quarters – the woman's own freshly collected eggs were used. A smaller number use embryos created from the woman's own eggs, which had been frozen previously and then thawed just before transfer.

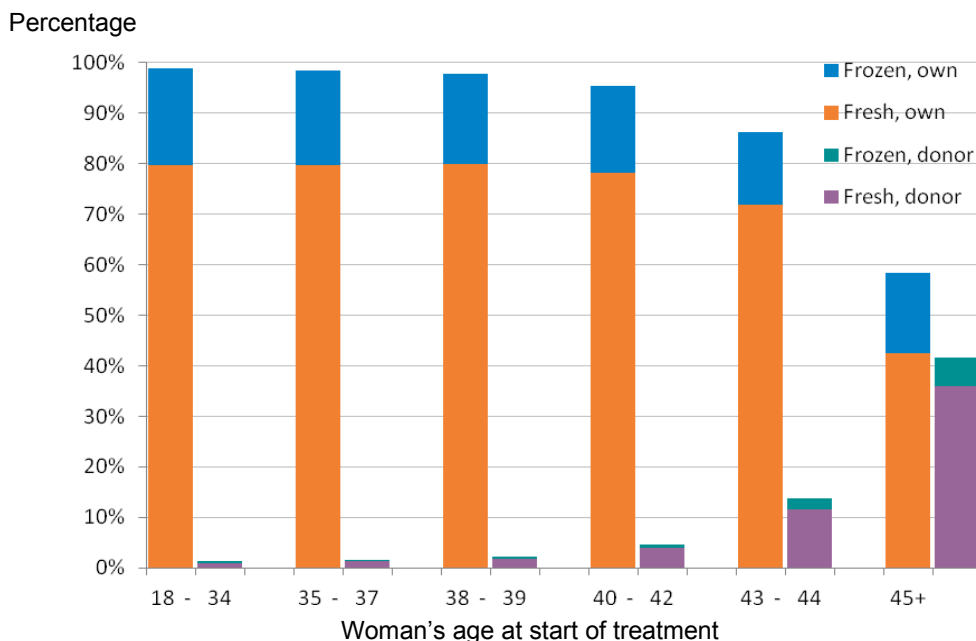
Figure 4: Proportion of treatment cycles started, IVF types and DI, 2010



► **How did the age of the women being treated affect which IVF treatment they received?**

The type of IVF cycle (fresh or frozen, donor or patient's own eggs) varied by the women's age, see Figure 5. As noted above, the majority of women used their own eggs, but here we see that the proportion of women using donor eggs increases with age.

Figure 5: The distribution of different types of treatment women have, by age, 2010



Fresh and frozen cycles

The number of both fresh and frozen IVF cycles performed has increased from 2009 to 2010. Frozen cycles have seen a bigger increase than fresh ones, increasing by 12.0% compared to 4.7%, and so take up a slightly greater proportion of all transfers in 2010 than in 2009. This may be because of the increase in women receiving eSET and therefore having good quality embryos available to freeze after treatment and use in a subsequent cycle.

Table 2: Number of fresh and frozen cycles started, 2009 and 2010

	2009		2010	
	Fresh	Frozen	Fresh	Frozen
Proportion of cycles	82.1%	17.9%	81.1%	18.9%

Stimulated and non-stimulated cycles

Some fertility clinics now offer natural IVF cycles. This is when no stimulatory drugs are used. Of the 45,227 fresh cycles performed in 2010 using a woman's own eggs, 401 (0.9%) were natural. Although the number of natural cycles increased slightly from 2009, when 369 cycles were performed with no drugs, the proportion remained the same (0.9%).

Of the 3,878 DI cycles performed in 2010, around half (1,916 or 49.4%) did not use stimulatory drugs. This represents only a very slight change since 2009, when 50.8% did not use stimulatory drugs.

Pre-implantation genetic diagnosis (PGD)

PGD is used in conjunction with IVF and is where one or two cells are removed from an embryo and tested for specific genetic disorders before the embryo is transferred into the woman's uterus. PGD is used to look for a specific disorder in couples with a high risk of transmitting a serious hereditary condition, such as cystic fibrosis or Huntingdon's disease. An up to date list of all the disorders for which PGD is allowed can be found on our website at www.hfea.gov.uk/cps/hfea/gen/pgd-screening.htm

12 clinics provided this treatment in 2010, four more than in 2009. A total of 373 of the IVF treatment cycles started in 2010 involved the use of PGD, an increase on 2009 figures (Table 3).

Table 3: Pre-implantation genetic diagnosis, cycles and results in 2009

Number of cycles	288
Number of patients	232
Number of births	86
Number of babies	100
Live birth rate, per cycle started	29.9%

Treatment cycles involving donated sperm and eggs and embryos

For the results of treatments using donated sperm, eggs and embryos, please see Table 19 to Table 22.

Donor Insemination – 71 clinics performed DI treatment in 2010. The number of DI cycles performed in the UK has stayed about the same between 2009 and 2010 (Table 4). See Table 21 for live birth results.

Table 4: Number of donor insemination cycles, 2009 and 2010

Year of treatment:		2009	2010
Age	18 – 34	1,629	1,614
	35 – 37	843	882
	38 – 39	609	577
	40 – 42	576	574
	43 – 44	144	164
	45 +	46	67
	All ages	3,847	3,878

Donated eggs – 62 clinics performed treatment using donated eggs in 2010, two fewer than in 2009 (64). A total of 2.8% of the fresh IVF cycles started in 2010 involved the use of donor eggs, the same proportion as in 2009.

Table 5: Donated eggs, cycles and patients, 2009 and 2010

Year of treatment:	2009	2010
Number of cycles	1,254	1,320
Number of patients	1,204	1,269

Donated Sperm – 67 clinics performed treatment using donated sperm in IVF treatment in 2010, two fewer than in 2009 (69). A total of 4.2% of the fresh IVF cycles started in 2010 involved the use of donor sperm, a slight increase from 3.6% in 2009.

Table 6: Donated sperm used in IVF treatment, cycles and patients, 2009 and 2010

Year of treatment:	2009	2010
Number of cycles	1,615	1,963
Number of patients	1,326	1,629

Donated embryos – 41 clinics performed treatment using donated embryos in 2010, up from 33 in 2009. A total of 0.4% of the fresh IVF cycles started in 2010 involved the use of donor embryos, a similar proportion to that (0.3%) in 2009.

Table 7: Donated embryos, cycles and patients, 2009 and 2010

Year of treatment:	2009	2010
Number of cycles	155	209
Number of patients	140	185

Section 2: Embryo Transfers

► How many embryos were transferred, in total, during 2010?

A total of 87,923 embryos were transferred during the course of fertility treatment which started in 2010:

- 44,253 embryos were transferred during IVF treatment
- 42,995 were transferred during ICSI treatment⁴

► How many embryos were transferred in each cycle?

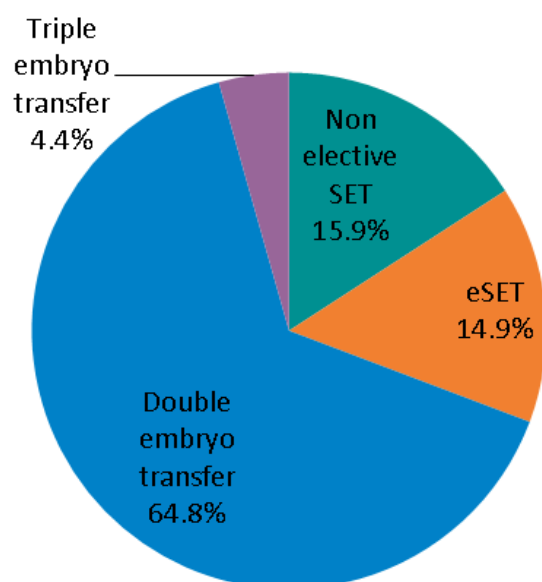
For women under the age of 40, one or two embryos can be transferred each time. For women aged 40, or over, a maximum of three can be used.

The number of embryos is restricted because of the risks associated with multiple births. Remaining embryos may be frozen for future IVF attempts, if they are suitable.

Women who have a good chance of becoming pregnant, and have several embryos available may choose to only have one embryo transferred in order to reduce the risk of a multiple pregnancy. This is known as elective single embryo transfer, or eSET.

Figure 6 shows that two embryos was still the most likely number to be transferred in each cycle. Only around 1 in 6 women overall (14.9%) received an eSET, and a similar amount (15.9%) received a non-elective SET (i.e. only one embryo was available to transfer).

Figure 6: Proportion of all transfers (fresh and frozen), by number of embryos transferred



⁴ 365 embryos were transferred during treatment involving both IVF and ICSI, and 310 embryos where neither IVF nor ICSI were specified on the reporting form.

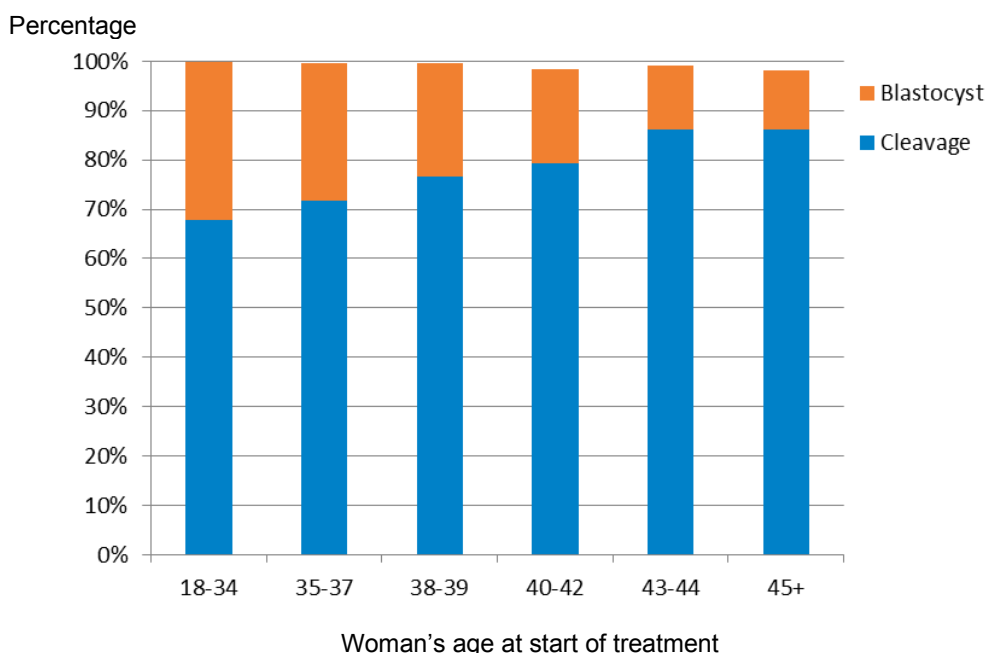
► Does the number of embryos transferred differ for cleavage or blastocyst transfers?

Blastocysts are embryos which are grown in the laboratory incubator for five to six days before they are transferred into the womb.

Blastocyst transfer is a relatively new procedure in the UK; previously almost all embryos were transferred after two to three days in the incubator, when they are known as cleavage stage embryos. Not all embryos will develop into blastocysts, and the embryologist will use their judgement to decide whether to continue culturing embryos beyond the cleavage stage, or transfer them then.

Overall (Figure 7), younger women had a higher proportion of blastocyst transfers than older women. The proportion of cleavage stage transfers gradually increases with age⁵.

Figure 7: Percentage of fresh embryo transfers involving cleavage or blastocyst stage embryos, 2010



The picture is slightly different with eSETs (Table 8 overleaf), where over half of the transfers (58.1%) were of blastocysts. This pattern was consistent for women aged under 40, only in the over 40s age groups were the majority of transfers cleavage stage embryos. Where two embryos are transferred, cleavage stage transfers are consistently the majority over blastocyst transfers.

Table 8 is overleaf.

⁵ Note that the bars do not sum to 100%, most noticeably in the older age groups; this is because a small number of embryos are transferred at day 1 (2PN stage), or day 4 (morula stage).

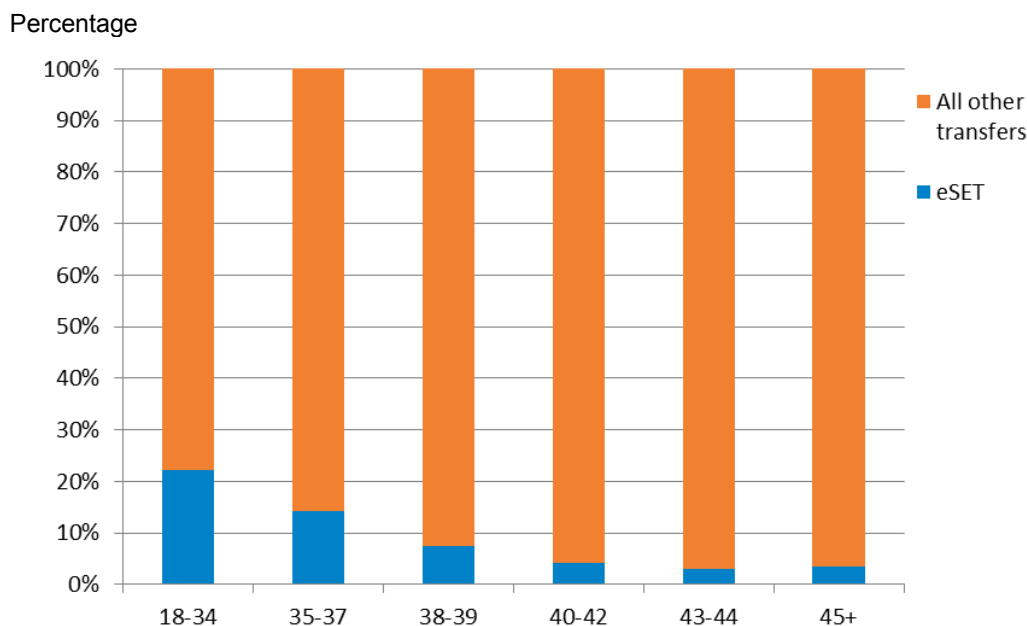
Table 8: Embryos transferred, as a percentage of all fresh embryos transferred, by age and whether the embryo was cleavage or blastocyst, 2010

	No. embryos:	eSET		Double embryo transfer	
	Stage:	Cleavage	Blastocyst	Cleavage	Blastocyst
Age	18 – 34	41.7%	58.3%	78.2%	21.6%
	35 – 37	39.4%	60.5%	77.4%	22.2%
	38 – 39	44.9%	55.1%	77.0%	22.7%
	40 – 42	55.1%	44.9%	73.5%	25.1%
	43 – 44	64.3%	35.7%	81.6%	17.5%
	45 +	66.7%	33.3%	83.3%	15.8%
	All ages	41.9%	58.1%	77.3%	22.3%

► **What proportion of transfers were elective SET, and how did this vary by the age of the woman?**

The women who have the best chance of becoming pregnant are usually those aged 37 and under, who are on their first or second attempt at IVF. These are the women who are most likely to decide to have only one embryo transferred. Figure 8 below shows that the women in the age groups 18 to 34 and 35 to 37 have the highest proportion of eSETs, but these are still in the minority.

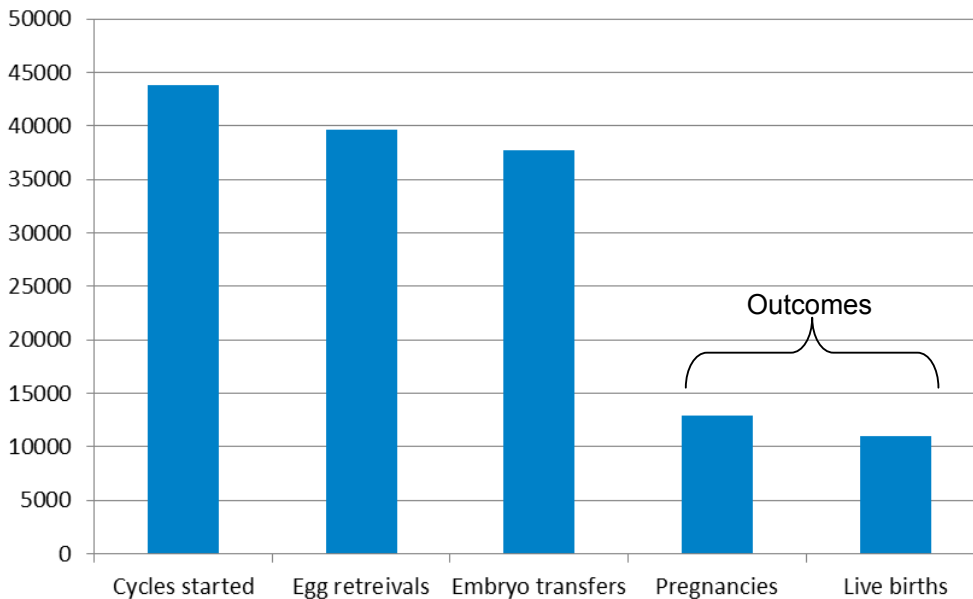
Figure 8: eSETs as a proportion of all embryo transfers performed, 2010.



► Why are some cycles abandoned before treatment is completed?

For a variety of reasons, not all treatment cycles result in a successful egg collection, and not all egg collections result in an embryo being transferred. Figure 9 shows that around a quarter of cycles started results in a live birth. These figures relate to fresh cycles started with the intention of conceiving immediately in 2009. Outcomes have been added to give an indication of the proportion of cycles which progress to pregnancy and birth.

Figure 9: Number of fresh IVF treatment cycles started which reached each stage of the treatment process, 2009.



The most common reason identified for a cycle to fail before the egg retrieval stage is because the woman's ovaries don't respond enough to treatment (42.6%). 6.3% fail at this stage because the woman's ovaries respond too much to treatment, which can be dangerous as it could lead to Ovarian Hyperstimulation Syndrome (OHSS). A further 51.0% fail for other, unspecified reasons.

The most common reason a cycle fails between egg retrieval and embryo transfer is because of a **risk** of OHSS (48.9% of cycles abandoned after egg retrieval but before transfer, 730 patients). It is important to note that a **risk** of OHSS is not the same as a diagnosis, and identifying this can be a safe part of the clinical management of the woman.

Key points: The most common number of embryos transferred in each treatment cycle is still two. The proportion of embryo transfers which are eSET decreases as women's' age increases. Most embryos are transferred when they reach cleavage stage, except in eSET procedures in younger women, when more are transferred at the blastocyst stage.

Section 3: Results - IVF cycles using fresh, own eggs

IVF cycles using the woman's own fresh eggs make up over three quarters (78.5%) of all IVF treatment cycles performed each year. In this publication therefore we give more detailed results for these common treatments. In the past we have mainly published live birth figures, but in order to give the most up to date information, we are now including pregnancy figures. The live birth figures included are from cycles started in 2009, and the pregnancy figures are from cycles started in 2010.

► How many pregnancies resulted from IVF treatment using a woman's own fresh eggs?

A total of 12,386 pregnancies were reported as a result of IVF treatment which started in 2009 and a total of 13,015 pregnancies were reported as a result of IVF treatment which started in 2010.

► How is the pregnancy rate affected by the woman's age?

The likelihood of getting pregnant following IVF treatment is strongly linked to the age of the woman being treated. On average, a woman aged 18 – 34 is substantially more likely to conceive than a woman who is older.

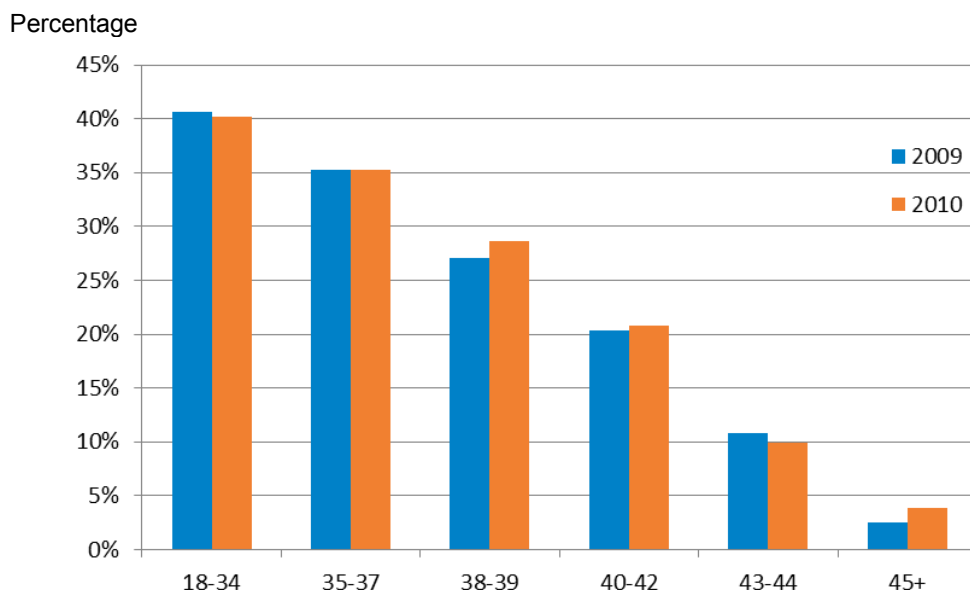
Full live birth rates by age, treatment type and clinic are published regularly and in more detail on [Choose a Fertility Clinic](#) on our website.

The pregnancy rate for all women treated with embryos created from their own fresh eggs has remained steady between 2009 and 2010 (Table 9 and Figure 10, overleaf).

Table 9: Pregnancy rate (per embryo transfer) for patients receiving IVF treatment, 2009 and 2010.

Year of treatment:		2009	2010
Age	18 – 34	40.7%	40.2%
	35 – 37	35.3%	35.2%
	38 – 39	27.1%	28.6%
	40 – 42	20.4%	20.8%
	43 – 44	10.8%	9.9%
	45 +	2.5%	3.9%
	All ages	33.4%	33.4%

Figure 10: Pregnancy rate (per embryo transfer) for patients receiving IVF treatment using their own fresh eggs, 2009 and 2010



► Does the pregnancy rate differ when one or two cleavage or blastocyst embryos are transferred?

Table 10 shows that the pregnancy rate tends to be higher when blastocysts are transferred, be it one (eSET) or two.

Overall, there is almost no difference in the pregnancy rate after an eSET blastocyst transfer or a double blastocyst transfer. This should be considered together with the multiple pregnancy rate after blastocyst transfer (Table 12), which is considerably higher after a double blastocyst transfer.

It should again be noted that blastocyst transfer is not suitable for every woman and that women who are able to have embryos cultured to blastocyst stage may be those who are more likely to get pregnant anyway.

Table 10: Pregnancy rate (per embryo transfer), by stage and number of embryos transferred, 2010

	No. embryos:	eSET		Double embryo transfer	
	Stage:	Cleavage	Blastocyst	Cleavage	Blastocyst
Age	18 – 34	30.8%	48.0%	39.6%	52.1%
	35 – 37	27.9%	47.2%	33.9%	47.2%
	38 – 39	17.2%	35.2%	28.2%	42.5%
	40 – 42			17.0%	35.1%
	43 – 44	11.7%	21.7%	6.8%	14.3%
	45 +				
	All ages	28.3%	46.3%	32.7%	46.1%

Figures are aggregated due to the small numbers involved.

► **What is the multiple pregnancy rate for IVF treatment using a woman's own fresh eggs?**

A multiple pregnancy is a pregnancy where two or more fetuses all develop at one time in the womb. The multiple pregnancy rate is the percentage of pregnancies confirmed by ultrasound which were multiple pregnancies.

The overall multiple pregnancy rate has decreased between 2009 and 2010 (Table 11). The decrease is most pronounced in women aged 18 – 34, who saw the greatest increase in eSET over the same period. For a closer look at the multiple pregnancy and eSET rates since 2008 see the short term trends section. The apparent increase in the multiple pregnancy rate for women aged 40 and over may be due to the small number of pregnancies and multiple pregnancies reported in this group; we will continue to monitor these trends.

Table 11: Multiple pregnancy rate (% of pregnancies), fresh own eggs, 2009 and 2010

Year of treatment:		2009	2010
Age	18 – 34	28.3%	23.5%
	35 – 37	24.6%	22.6%
	38 – 39	21.5%	19.7%
	40 – 42	17.0%	18.5%
	43 – 44	8.8%	10.4%
	45 +		
	All ages	25.4%	22.2%

Figures are aggregated due to the small numbers involved.

► **Does the multiple pregnancy rate differ when one or two cleavage or blastocyst embryos are transferred?**

Multiple pregnancies following single embryo transfer are rare and happen when the embryo splits in two, resulting in identical twins.

After the transfer of two cleavage stage embryos around a quarter of pregnancies confirmed by ultrasound were of two or more babies, but this is affected by the woman's age, and is even higher in younger women (around a third of pregnancies).

Table 12 (overleaf) also shows that transferring two blastocysts at one time carries an even higher risk of multiple pregnancy than transferring two cleavage stage embryos.

By receiving eSET, the risk of a multiple pregnancy is similar to that of all conceptions, which is 1.64%⁶.

⁶ Office for National Statistics, 2010, Statistical Bulletin: Live births in England and Wales by characteristics of birth www.statistics.gov.uk/pdfsdir/birth1110.pdf. The ONS figures will contain multiple births after fertility treatment, as well as natural conceptions as they cover *all* recorded births in England and Wales.

Table 12: Multiple pregnancy rate (% of pregnancies), fresh own eggs, by stage and number of embryos transferred, 2010

	Stage:	Cleavage stage embryo		Blastocyst stage embryo		
	Transfer type:	eSET	Double	eSET	Double	
Age	18 – 34	<2.0%	32.3%	<2.0%	45.1%	
	35 – 37	<2.0%	24.4%	<2.5%	41.4%	
	38 – 39		17.8%		32.0%	
	40 – 42		14.9%		27.2%	
	43 – 44					
	45 +					
	All ages	<2.0%	26.6%	<2.0%	39.8%	

Figures are aggregated due to the small numbers involved.

► **What is the live birth rate for IVF treatment using a woman's own fresh eggs?**

A total of 13,364 babies were born as a result of IVF treatment using a woman's fresh, own eggs in 2009, including those born as multiples.

The live birth rate per cycle started has decreased very slightly for women of all ages between 2008 and 2009. Only women aged 18 - 34 and 45 and over showed a decrease of greater than one percentage.

The live birth rate has shown a decline year on year before; for instance between 2003 and 2004 it dropped one percentage point. However, it recovered the next year and continued to increase to the levels we see today.

Table 13: Live birth rate, per cycle started, fresh own eggs, 2008 and 2009

	Year of treatment:	2008	2009
	Age		
	18 – 34	33.7%	32.3%
	35 – 37	27.5%	27.2%
	38 – 39	19.7%	19.2%
	40 – 42	12.5%	12.7%
	43 – 44	4.9%	5.1%
	45 +	2.7%	1.5%
	All ages	25.8%	25.2%

► **What is the multiple birth rate for IVF treatment using a woman's own fresh eggs?**

The multiple birth rate (Table 14) closely follows the multiple pregnancy rate (Table 11), showing a continuing decline between 2009 and 2010, again most notably in the women aged 18 – 34.

Table 14: Multiple birth rate (% of live births), fresh own eggs, 2008 and 2009.

Year of treatment:		2008	2009
Age	18 – 34	29.4%	24.9%
	35 – 37	22.5%	22.1%
	38 – 39	17.8%	17.7%
	40 – 42	13.8%	14.5%
	43 – 44	6.0%	7.0%
	45 +		
	All ages	24.9%	22.4%

Figures are aggregated due to the small numbers involved.

Key points: The pregnancy rate has remained broadly steady between 2009 and 2010, but the multiple pregnancy rate has decreased.

After a double blastocyst transfer a much higher percentage of pregnancies confirmed by ultrasound were of two or more fetuses, approaching half in women aged 18 - 34. By receiving eSET this risk is reduced to a similar level to all conceptions.

Between 2008 and 2009 the overall live birth rate per cycle started has declined slightly. During the same time period, the overall multiple birth rate has declined markedly. The HFEA will continue monitoring these figures.

Results - IVF cycles using frozen embryos from a woman's own eggs

In 2010 there were 10,556 cycles using thawed frozen embryos created from the woman's own eggs and in 2009 there were 9,428 making a 12% increase.

► What is the pregnancy rate using frozen embryos from a woman's own eggs?

The pregnancy rate after thawed frozen embryo transfers (Table 15) is generally lower than when fresh embryos are transferred (see Table 9). The pregnancy rates have again remained broadly steady between 2009 and 2010, but have increased slightly in the older age groups. It is notable that the pregnancy rate does not drop away as substantially in the older age groups as it does in the fresh cycles. This may be because the embryos transferred in the frozen cycle were created using eggs collected some time ago, when the woman was herself younger.

Table 15: Pregnancy rate, per frozen embryo transfer, 2009 and 2010

Year of treatment:		2009	2010
Age	18 – 34	24.0%	24.4%
	35 – 37	23.1%	24.0%
	38 – 39	23.5%	21.3%
	40 – 42	17.0%	18.0%
	43 – 44	11.6%	16.7%
	45 +	17.4%	19.9%
	All ages	22.3%	22.8%

► How does the pregnancy rate differ by the stage of the thawed embryo?

In frozen transfers there is a marked difference between the pregnancy rates for eSET and DET and between cleavage and blastocyst transfers, but the risk of a multiple pregnancy is of course reduced considerably by receiving eSET.

Table 16: Pregnancy rate, per frozen embryo transfer by stage of thaw and number of embryos transferred, 2010

No. embryos:		eSET		Double embryo transfer	
Age	Embryo stage	Cleavage	Blastocyst	Cleavage	Blastocyst
Age	18 – 34	18.2%	27.9%	24.5%	31.6%
	35 – 37	18.4%	29.2%	25.0%	31.1%
	38 – 39	14.6%	29.1%	19.5%	28.0%
	40 – 42			19.3%	25.9%
	43 – 44			20.1%	28.8%
	45 +				
	All ages	17.1%	28.5%	23.1%	30.3%

Figures are aggregated due to the small numbers involved.

► **What is the multiple pregnancy rate for IVF treatment using frozen embryos from a woman's own eggs?**

The overall multiple pregnancy rate after frozen transfers is lower than that seen after fresh transfers (Table 12). However, a slight increase has been seen between 2009 and 2010 overall, and an apparently sharp increase in the older age groups; this may well be due to the small numbers of outcomes in these groups.

Table 17: Multiple pregnancy rate (% of pregnancies), 2009 and 2010

Year of treatment:		2009	2010
Age	18 – 34	21.6%	22.8%
	35 – 37	16.8%	19.7%
	38 – 39	16.1%	10.2%
	40 – 42	10.3%	16.1%
	43 – 44	10.9%	18.1%
	45 +		
	All ages	18.0%	19.3%

Figures are aggregated due to the small numbers involved.

► **What is the live birth rate for IVF treatment using frozen embryos from a woman's own eggs?**

As noted earlier, on average, women aged 18 – 34 when their treatment starts are more likely to have a baby than those who are older. This can be seen in pregnancies and in live births after fresh embryo transfers (Table 9 and Table 13) and in pregnancies after frozen transfers (Table 15). Table 18 shows that the live birth rate also follows this trend and remained steady overall between 2008-09, though it declined slightly for the 18 – 34 group.

Table 18: Live birth rate per cycle started, after frozen embryo transfer using woman's own eggs, 2008 and 2009

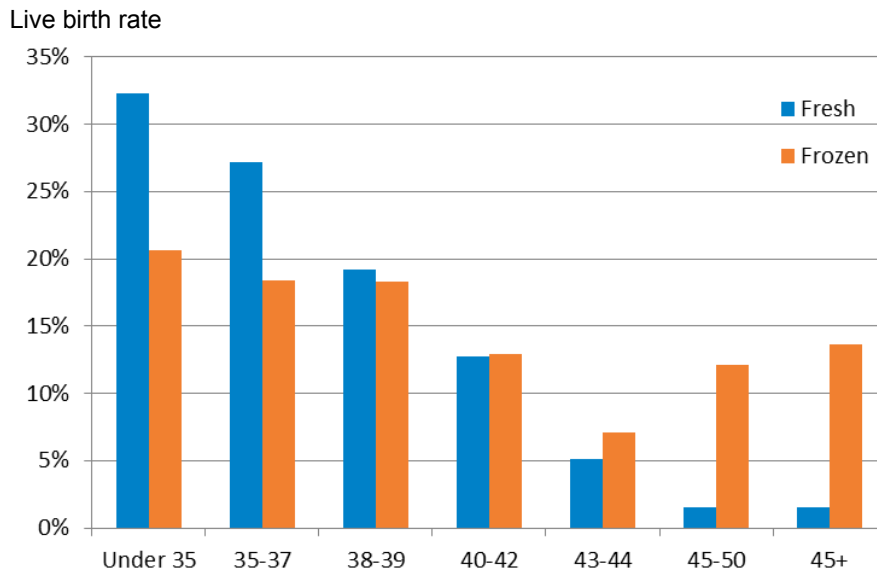
Year of treatment:		2008	2009
Age	18 – 34	22.5%	20.7%
	35 – 37	17.5%	18.4%
	38 – 39	16.1%	18.3%
	40 – 42	13.0%	12.9%
	43 – 44	10.2%	7.1%
	45 +	10.5%	12.1%
	All ages	18.2%	18.1%

► **How does the live birth rate of frozen embryo transfers compare to that of fresh embryo transfers?**

As noted above, fresh transfers *tend* to be more successful than frozen ones, with a higher overall pregnancy rate and higher overall live birth rate. Comparing live birth rates directly between fresh and frozen transfers (Figure 11) we see that while this trend is true for the youngest groups (where most of the cycles are performed), the trend is reversed in the older age groups. Again, this may be because the embryos transferred in the frozen cycle were created using eggs collected some time ago, when the woman was herself younger.

Figure 11 is overleaf.

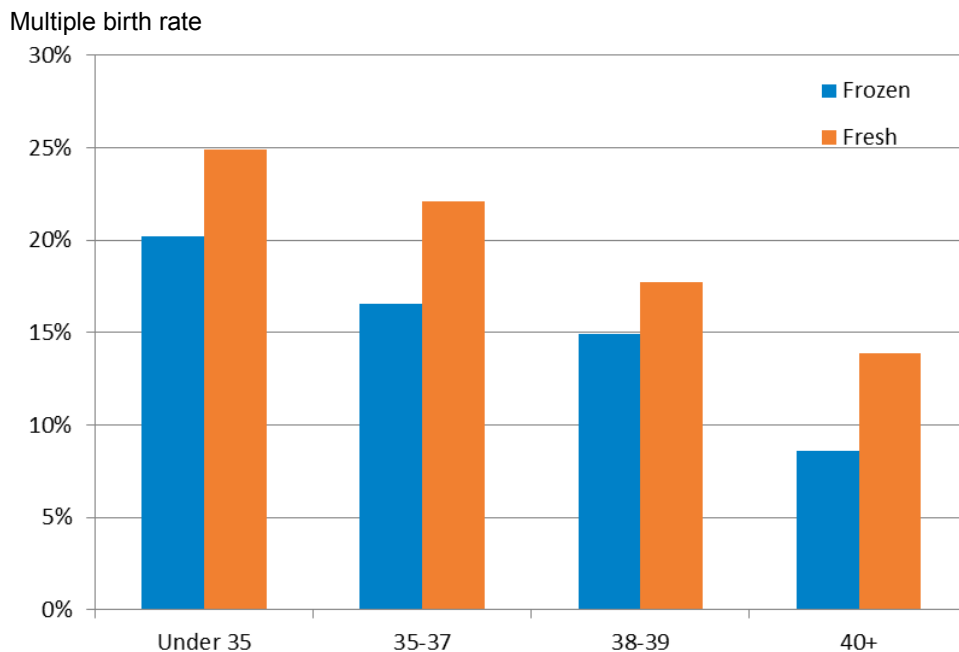
Figure 11: Live birth rate per cycle started, fresh and frozen embryo transfers, 2009.



► **What is the multiple birth rate when using frozen embryos from a woman's own eggs?**

The multiple birth rate tends to be higher after fresh transfers than after frozen ones (Figure 12). Overall after frozen transfers, the rate is 17% of all live births, compared with 22.4% after fresh transfers (both 2009). In this graph the age groups over 40 have been grouped together because of the small numbers involved which can be uninformative when presented separately.

Figure 12: Multiple birth rate (% of all live births) for frozen and fresh transfers, 2009



Key points: Frozen transfers overall are less successful than fresh ones, but this trend is reversed in women in older age groups. Thawed blastocyst stage embryos seem to be more successful than cleavage stage ones.

Results – Cycles using donated eggs, sperm and embryos

Note that because this section focuses on live birth results rather than pregnancies the data is from 2009.

► What is the live birth rate for IVF treatment using fresh donor eggs?

When using a woman's own eggs, we have seen that the live birth rate typically declines with age. This is a reflection of the declining quality in the woman's eggs as she ages. As egg donors must be aged 18 - 35 when they donate, the patient recipient's age is less of a factor and so the live birth rate for older women is considerably higher than when their own eggs are used (see Table 13). A total of 1,254 cycles of IVF were performed in 2009 using donated eggs. This resulted in 417 births, and 550 babies being born

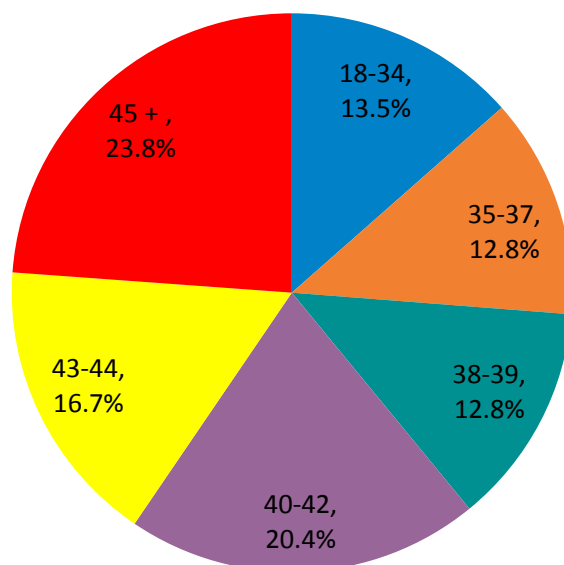
Table 19: Live birth rate per cycle started, for women using fresh donor eggs, 2009

Year of treatment:		2009
Age	18 – 34	31.4%
	35 – 37	32.5%
	38 – 39	24.8%
	40 – 42	33.2%
	43 – 44	34.9%
	45 +	38.1%
	All ages	33.3%

► How old were the women receiving fresh donor eggs?

Over half of the treatment cycles using fresh donated eggs were performed in women over 40, this compares with around a fifth of women seeking treatment overall. Figure 5 showed that the proportion of women using donated eggs increases with age.

Figure 13: Percentage of fresh cycles using donated eggs, by age group, 2009



► **What is the live birth rate for fresh egg IVF using donated sperm?**

A total of 1,615 cycles of fresh egg IVF were performed in 2009 using donated sperm. This resulted in 474 births, and 585 babies being born. The live birth rate is generally higher than when partner sperm has been used (see Table 13).

Table 20: Live birth rate per cycle started, for fresh egg IVF using donor sperm, 2009

Year of treatment:		2009
Age	18 – 34	42.7%
	35 – 37	34.8%
	38 – 39	21.9%
	40 – 42	15.4%
	43 – 44	10.9%
	45 +	
	All ages	29.3%

Figures are aggregated due to the small numbers involved.

► **What is the live birth rate for Donor Insemination?**

A total of 3,847 cycles of fresh IVF were performed in 2009 using donated sperm. This resulted in 425 births, and 455 babies being born.

Table 21: Live birth rate per cycle started, for DI, 2009

Year of treatment:		2009
Age	18 – 34	15.0%
	35 – 37	11.4%
	38 – 39	8.2%
	40 – 42	5.9%
	43 – 44	0.7%
	45 +	0.0%
	All ages	11.0%

► **What was the live birth rate when using fresh donated embryos?**

A total of 155 cycles of IVF were performed using fresh donated embryos in 2009. This resulted in 52 live births and 66 babies being born.

Around half of cycles performed using fresh donated embryos were performed in women aged 40 and over.

Table 22: Live birth rate per cycle started, using fresh donor embryos, 2009

Year of treatment:		2009
Age	18 – 34	32.0%
	35 – 37	32.7%
	38 – 39	
	40 – 42	
	43 – 44	36.0%
	45 +	
	All ages	33.5%

Figures are aggregated due to the small numbers involved.

► **How many women took part in egg sharing arrangements and what was the live birth rate?**

In 2009, 738 women donated eggs as part of an egg sharing cycle, 820 of which were performed. In the women donating eggs, this resulted in 308 live births (a live birth rate per cycle started of 37.6%), including 75 multiple births.

714 women received eggs as part of an egg sharing arrangement, in 740 cycles. This resulted in 236 live births (a live birth rate per cycle started of 31.9%), including 73 multiple births.

► **How many couples in same-sex partnerships had treatment, and what were the live birth rates?**

A total of 461 cycles of IVF were performed in women who registered with a female partner in 2009. This resulted in 138 live births and 173 babies being born. The live birth rate per cycle started was therefore 29.9%.

A total of 945 cycles of DI were performed in women who registered with a female partner in 2009. This resulted in 93 live births and 102 babies being born. The live birth rate per cycle started was therefore 9.8%.

Key points: Over half of the women receiving fresh donor eggs are aged over 40. However, live birth rates for donated eggs compare very well with those for patients' own eggs. The live birth rates for IVF using donated sperm, and donated embryos also compare well with those for patients' own eggs.

Section 4: Trends

Short term trends

In January 2009 the HFEA introduced a policy to promote eSET and minimise the risk of multiple births from IVF treatment. All clinics must have their own strategy around eSET, which sets out how they will lower their multiple birth rate to within a maximum rate set by the HFEA. The HFEA lowers the maximum multiple birth rate each year, after careful evaluation, towards an ultimate aim of a multiple birth rate of not more than 10% each year. Although no target was in place in 2008, that year was used as a 'benchmark' and is therefore used as the start of these shorter term trends.

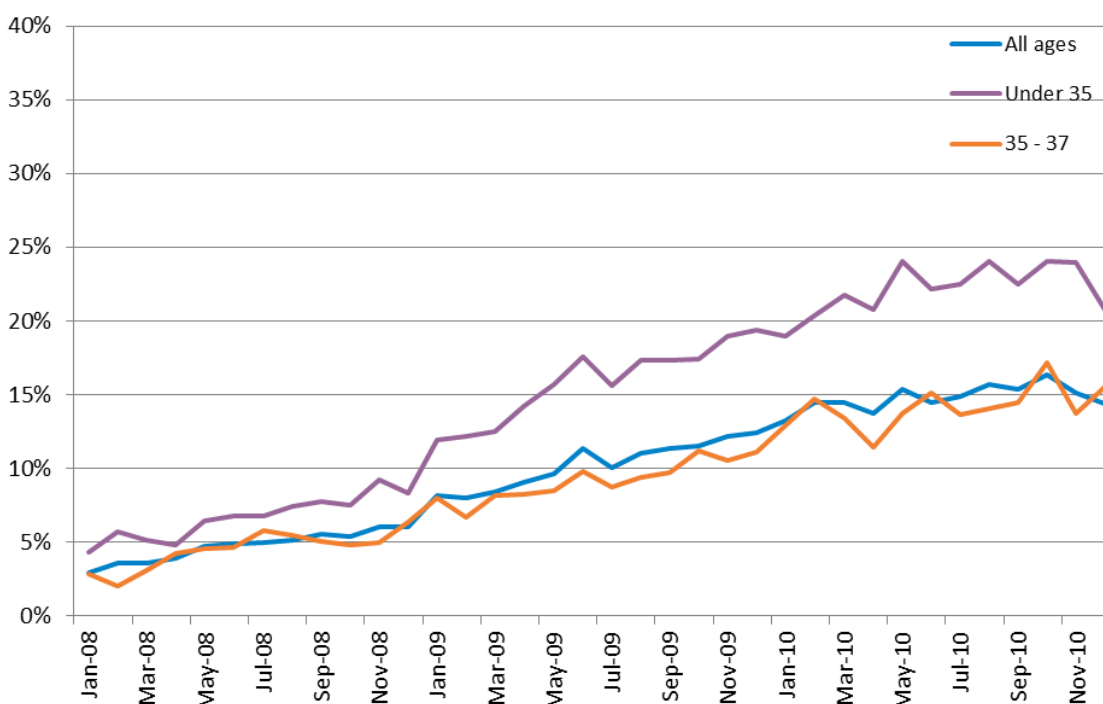
► How has the eSET rate changed since January 2008?

Since January 2008, the proportion of transfers performed which are eSET has increased across the sector. In 2008, 39,206 embryo transfers were performed, of these 1,884, or 4.8% were eSET. In 2010, 48,850 embryo transfers were performed, 7,265, or 14.9%, of which were eSET.

This increase has been greatest in younger women, particularly those aged 18 – 34, though the rate of increase in this group has tailed off since mid-2010. The professional bodies recommend that women aged under 37 at the start of treatment (amongst other factors) are best suited to receive eSET⁷.

Figure 14: eSETs as a percentage of all embryo transfers, 2008 to 2010

Percentage of embryo transfers
eSET



⁷ Cutting, R, *et al* (2008) Elective Single Embryo Transfer: Guidelines for Practice British Fertility Society and Association of Clinical Embryologists. Human Fertility. 1-16

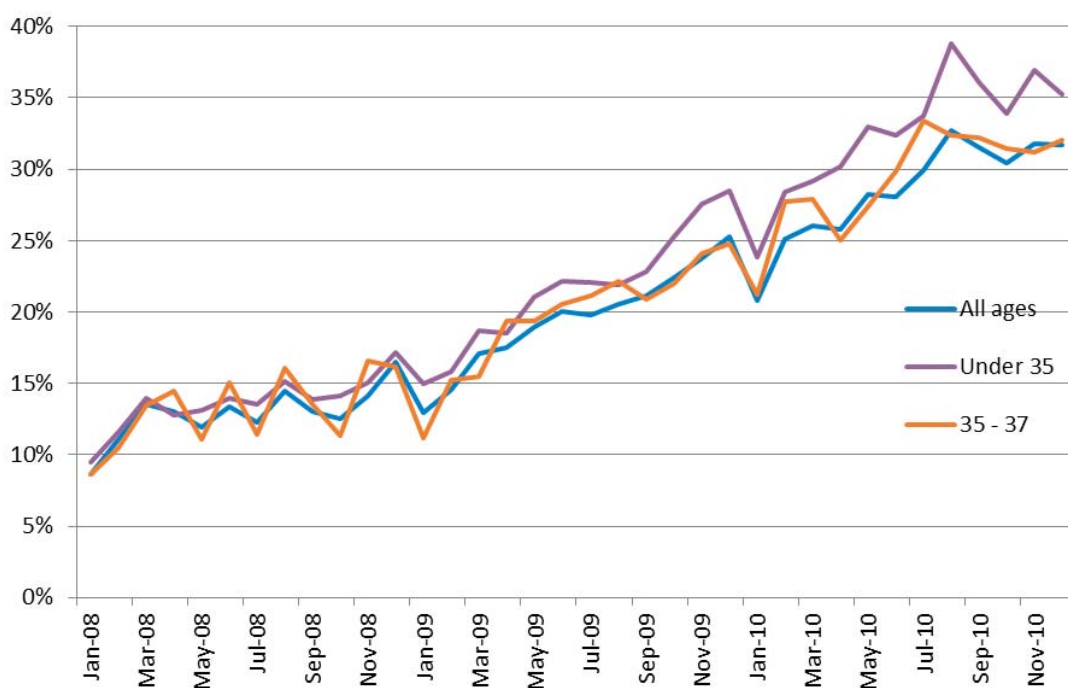
► How has the proportion of blastocyst transfers changed since January 2008?

Since 2008 there has been a steady increase in the percentage of embryos transferred at the blastocyst stage.

Figure 15 shows the percentage of all embryos transferred which were at blastocyst stage, and how this has changed, month by month. This has increased from 8.6% of all embryo transfers in January 2008, to 31.7%, nearly a third, in December 2010.

Figure 15: Blastocyst transfers as a percentage of all embryo transfers, 2008 to 2010

Percentage of embryo transfers



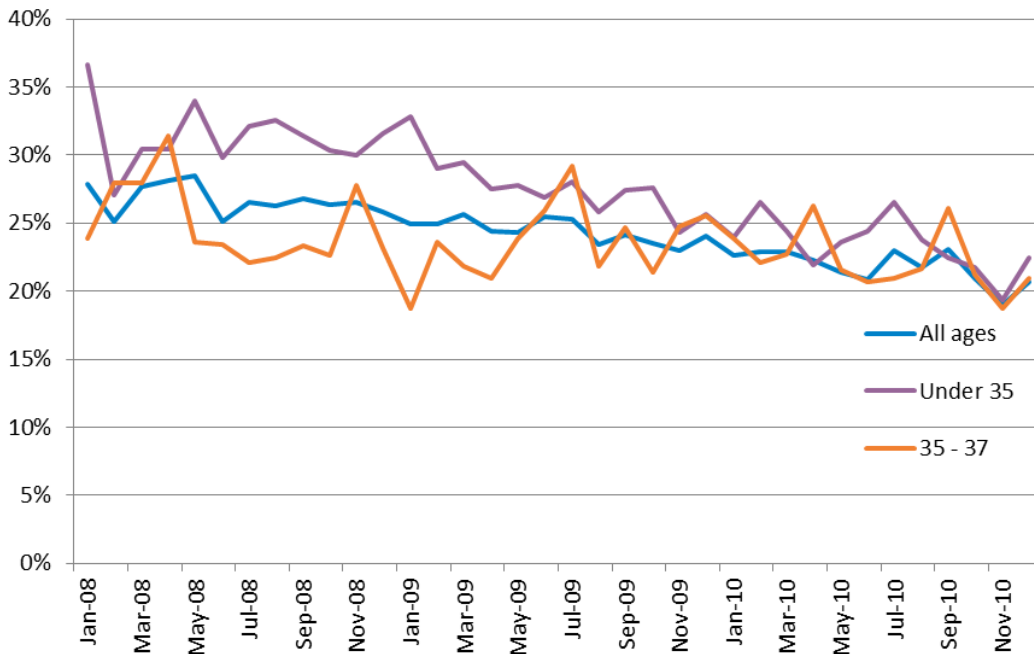
► **How has the multiple pregnancy rate changed since January 2008?**

A multiple pregnancy is a pregnancy where two or more fetuses develop at one time in the womb. The multiple pregnancy rate is the percentage of pregnancies confirmed by ultrasound to which were multiple pregnancies.

Figure 16 shows the multiple pregnancy rate has decreased between 2008 and the end of 2010. The decrease is most pronounced in women aged 18 - 34, who saw the greatest increase in eSET (Figure 14). We can see variability from month to month, but overall the trend is downwards, going from 26.7% overall in 2008, to 21.8% overall in 2010.

Figure 16: Monthly multiple pregnancy rate (% of pregnancies), 2008 to 2010

Multiple pregnancy rate

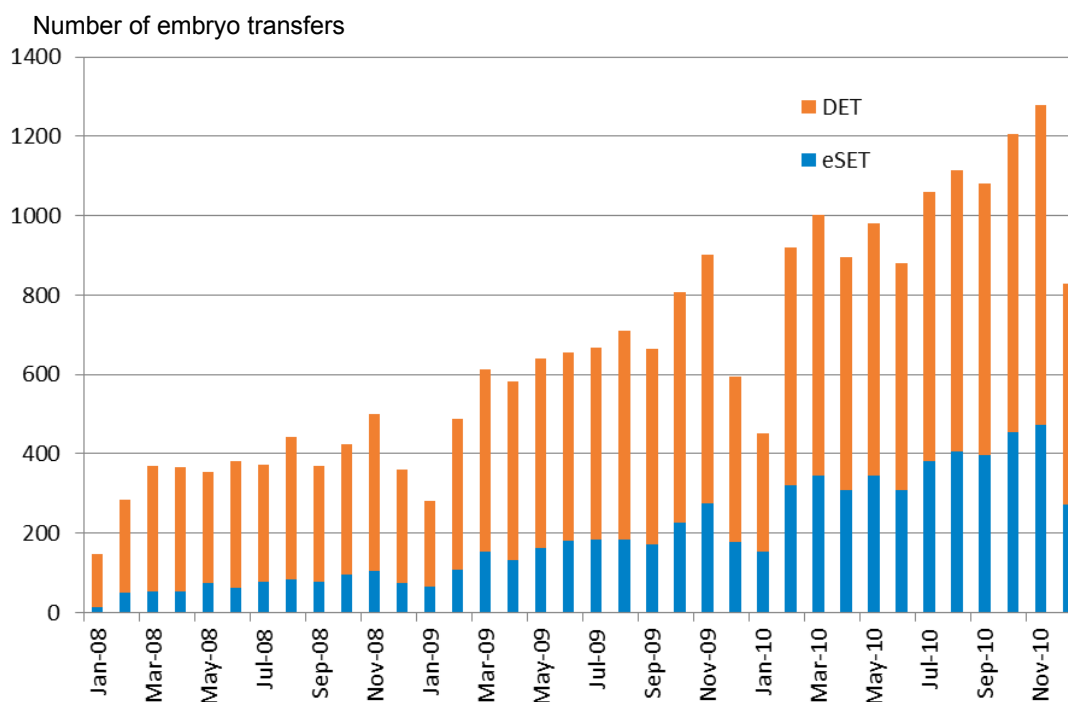


► How has the proportion of blastocyst transfers which are single or double changed since January 2008?

When clinics in the UK were introducing blastocyst transfer, in early 2008, doctors tended to transfer two blastocysts at a time.

Figure 17 shows that as the technique has become more widespread (the overall number has increased), the proportion of these which are eSET has increased. Generally, fewer embryos are transferred in January and December of each year, and this is noticeable in this graph.

Figure 17: Proportion of fresh blastocyst transfers which were eSET or DET, 2008 to 2010



Key points: Between 2008 and 2010 significant changes have been made in clinical practice; more embryos are being transferred at the blastocyst stage, and as part of an active decision to only transfer one embryo, even if more are available. The resulting multiple pregnancy rate has shown a decline in the same period.

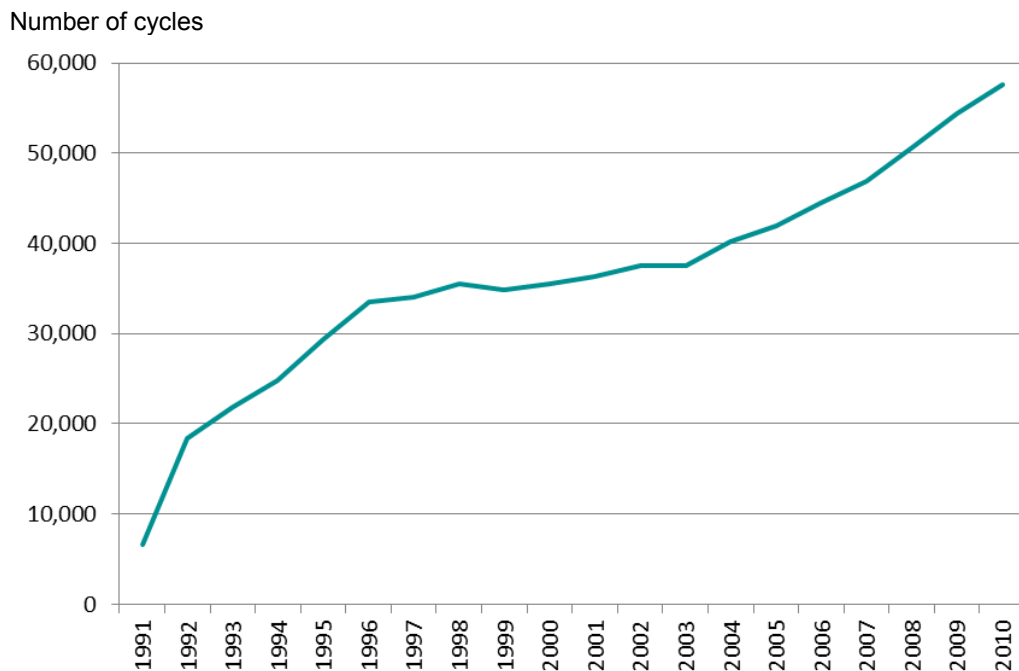
Longer term trends

The HFEA has been collecting data since 1991 and have a unique source of information in the Register. IVF treatments can change rapidly, being at the forefront of scientific practice. You can see more long term data in our Long Term Data publication on our website.

► How has the number of cycles performed each year since 1991 changed?

The number of IVF cycles (including ICSI and earlier micromanipulation techniques) performed every year in the UK has increased almost every year since 1991. The annual increases slowed down in the late 1990s and early 2000s, but picked up again after around 2003 to the levels we see today.

Figure 18: Number of IVF cycles performed each year, 1991 to 2010



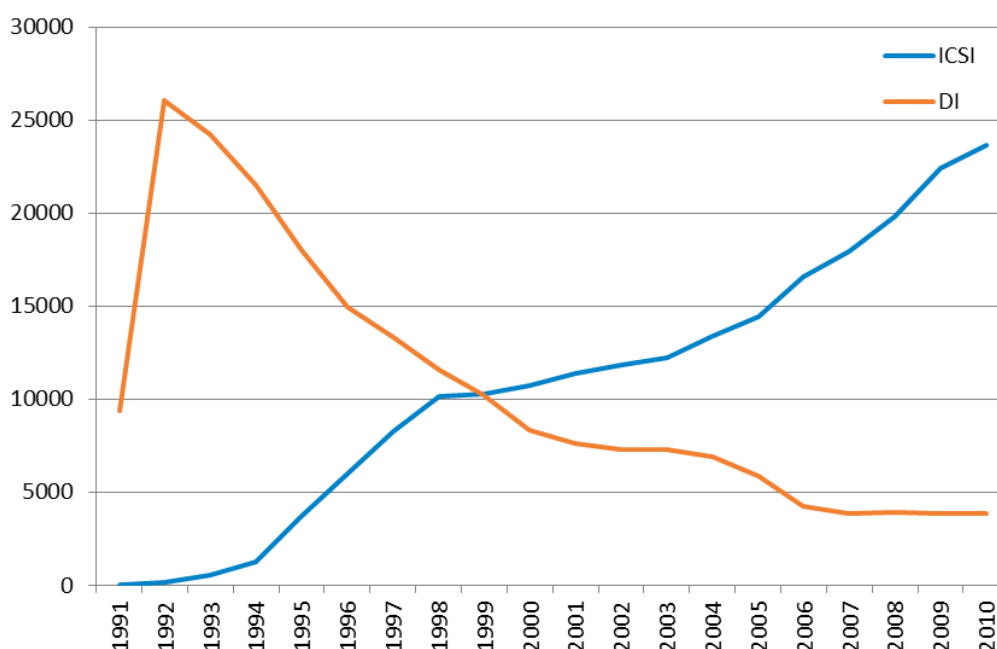
► How has the number of DI cycles changed as the proportion of those using ICSI increased?

ICSI is a way of treating male factor infertility – only one sperm is required for treatment to be successful and live birth rates are similar to standard IVF. Figure 19 shows that as ICSI treatment has become more widespread, DI has been declining. ICSI treatments outstripped DI by the early 2000s. Of course, there are likely to be additional factors which affect the number of cycles of each treatment type performed, but ICSI does provide an alternative to DI for many couples. Now, because of ICSI, more men are able to have a child they are genetically related to.

Note that the sharp increase from 1991 to 1992 is because data was only collected for part of the year in 1991, so the number of DI cycles is fewer than when a whole year's data was collected in 1992.

Figure 19: Number of ICSI cycles and number of DI cycles, 1991 to 2010

Number of cycles started each year.

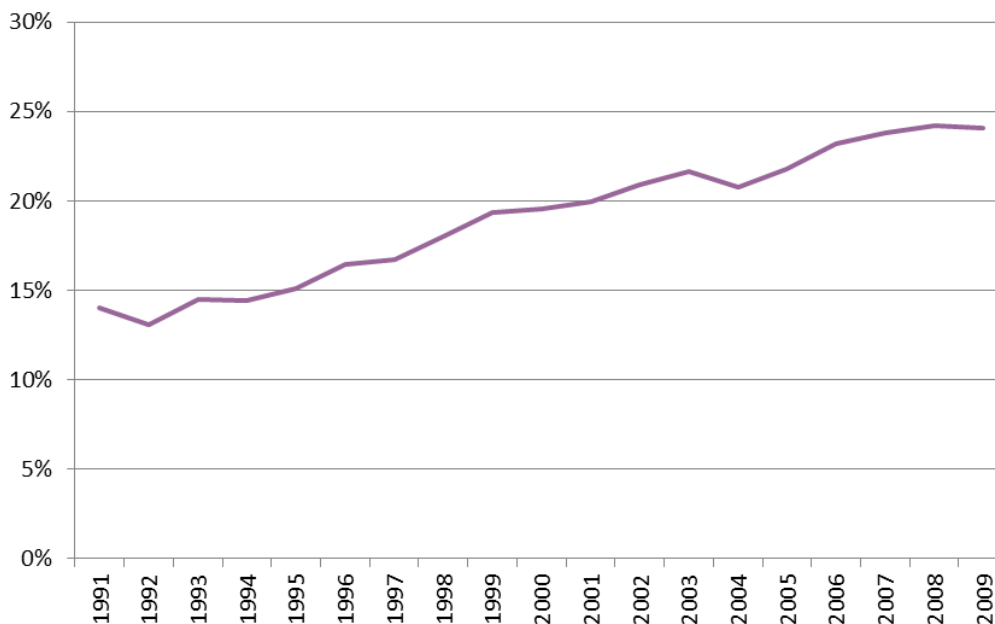


► **How has the live birth rate for IVF cycles changed since 1991?**

The live birth rate has increased fairly consistently since 1991; from 14.0% in 1991 to 24.1% in 2009. Some years have shown a steadying off, and even a decline, including a very slight decline in the most recent years. However, the overall trend is clearly an increasing one, reflecting improvements in clinical practice.

Figure 20: Live birth rate per cycle started, for IVF cycles, 1991 to 2009

Live birth rate, per cycle started



► **How has the age of the women being treated changed since 1991?**

Since 1991 the average age of women being treated has increased by 1.5 years for IVF, from 33.6 to 35.1, and 3.3 years for DI treatments from 31.9 to 35.2. This reflects the wider trend seen in the UK for women to have their children later.⁸

Figure 21: Average age of women treated with fresh and DI, 1991 to 2010

Woman's age at start of treatment

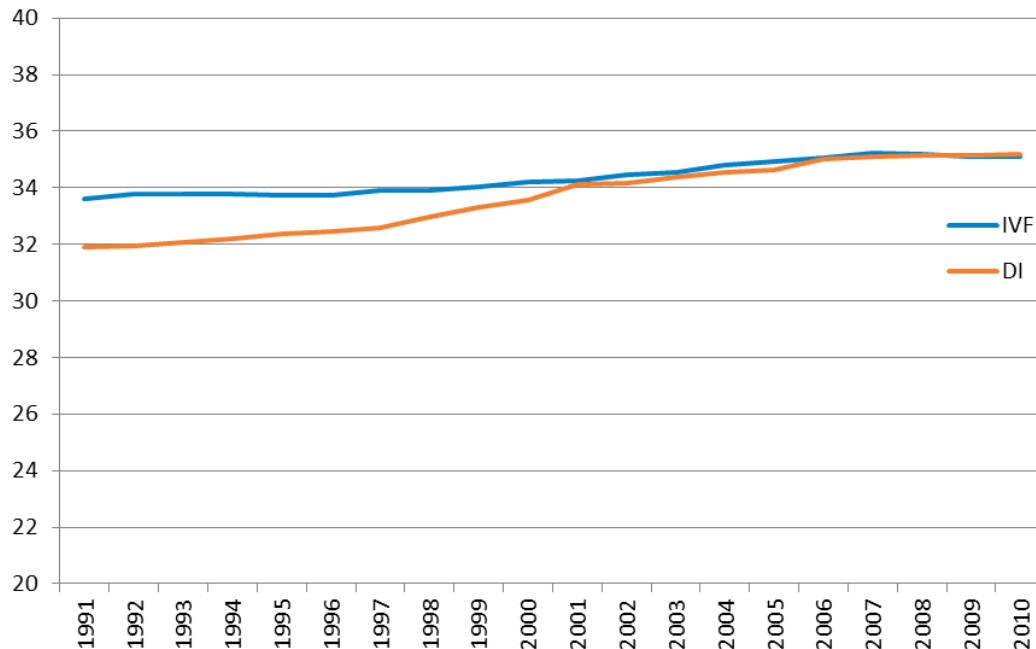
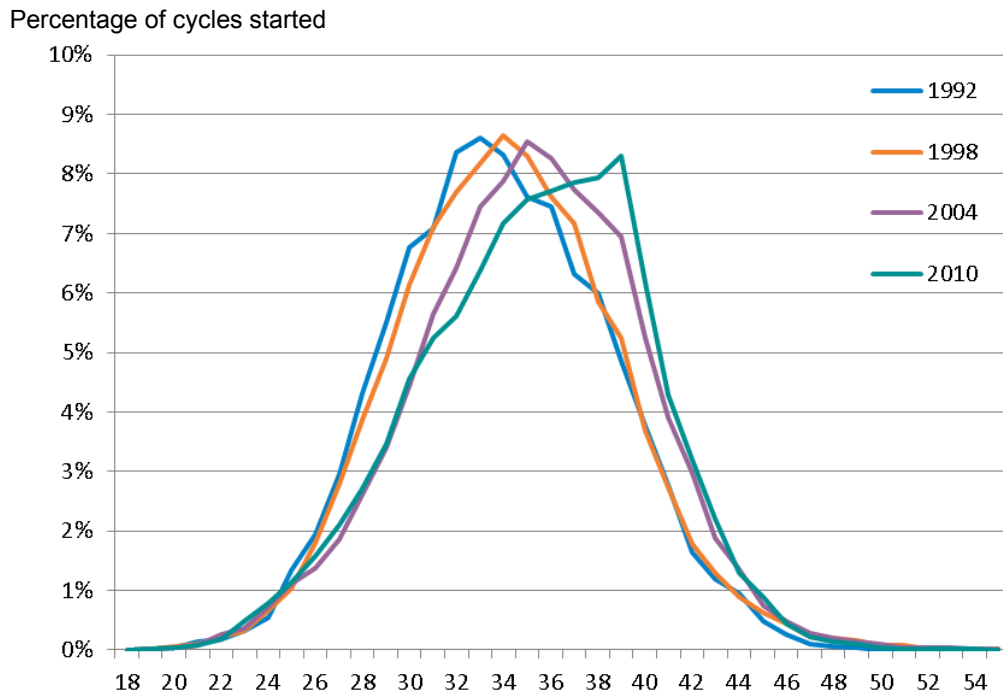


Figure 22 (overleaf) also shows the trend for women to start fertility treatment later. The peak of the curve (showing the ages of the most women starting treatment) moves to the right – up the age scale - over the four years identified. Note too that the shape of the curve has changed, in particular, there is a sharp peak in 2010 for women aged 39, before the line drops down very quickly as age increases beyond this.

Figure 22 is overleaf.

⁸ Statistical Bulletin for Births and deaths in England and Wales 2010, Office for National Statistics

Figure 22: Percentage of cycles started, by women's age at the start of treatment, 1991 to 2010



► **How many babies in the UK have been born as a result of IVF treatment since 1991?**

Since the first IVF baby was born in 1978, an estimated 3.75 million babies have been born worldwide after IVF treatment⁹. In the UK 168,476 babies have been born after IVF treatment started between 1991 and 2009.

► **How has the proportion of babies born being IVF babies changed since 1992?**

Since 1992, the number of babies being born every year in the UK has fluctuated. The number declined through the 1990s, but picked up again and increased in the early to mid 2000s¹⁰. During this time, the proportion of those babies born who were IVF babies has steadily increased. In 1992, 0.3% of all babies were born as a result of IVF treatment; in 2002 this had reached 1.4%. In 2009, nearly 2% of all babies born in the UK were conceived as a result of IVF treatment.

Key points: The number of IVF cycles performed each year has increased steadily since 1991. During that time, the number of DI cycles has fallen, which may be a result of more couples choosing ICSI in order to treat male factor infertility. The live birth rate after IVF has increased from only 14%, to nearly a quarter by 2009. In 2009, nearly 2% of all the babies born in the UK had been conceived through IVF treatment.

⁹ European Society of Human Reproduction and Embryology (2010) ART Factsheet, published online www.eshre.eu/ESHRE/English/Guidelines-Legal/ART-fact-sheet/page.aspx/1061 accessed 08/11/2011.

¹⁰ England and Wales: Office for National Statistics, Births Summary Tables, 2010, <http://www.ons.gov.uk/ons/rel/vsob1/birth-summary-tables--england-and-wales/2010/index.html>; Scotland: General Register Office for Scotland, www.gro-scotland.gov.uk/statistics/theme/vital-events/births/time-series.html; Northern Ireland: NISRA, Live births, 1887 to 2009, www.nisra.gov.uk/demography/default.asp8.htm

Background

About this report

In this report we present key information about the patients treated, the different treatments used and the pregnancy rates for treatment cycles carried out in 2010, plus the birth rates for cycles carried out in 2009.

How we gathered the data

Clinics are required by law to provide information to the HFEA Register about all licensed fertility treatments they carry out.

The HFEA Register contains information about fertility patients, the treatment they received and its outcomes.

Understanding the data analysis

The information here is different to how we usually publish data. In the past we have given information about live births; however, we've been asked by clinicians and patients for more up-to-date figures and so we are now publishing pregnancy data. We are able to collect pregnancy information much sooner after the treatment cycle than live birth data. However, pregnancy rates do not show the full picture of success that a live birth rate does, as unfortunately not all pregnancies will end in a live birth. This information is given to provide a more up-to-date picture of current clinical practice and outcomes.

The information that the HFEA publishes is a snapshot of data provided to us by licensed clinics at a particular time. The figures supplied in this report are from the HFEA data warehouse containing Register data as at 4th November 2011 unless otherwise stated. Before publication, we carefully check the data, and ask the clinics to confirm its accuracy, for which they remain responsible.

Because clinics may submit data relating to past cycles at any time, the figures published here may differ slightly to those published before or those published in the future.

In October 2007, the HFEA introduced new data collection forms which clinics started using throughout 2008. The new forms may result in clinics reporting pregnancies earlier than they had before and this may have had an impact on the pregnancy figures; this will be monitored as more data becomes available.

Revisions policy

No revisions are planned to this publication unless errors are found which will be corrected.

Next publication date

Autumn 2012

Accessing the data

The data in this publication has, except in specific circumstances, been presented as percentages in order to draw comparisons and maintain understanding for lay readers. If you would like to access the absolute figures these are available to download as a spreadsheet from our website (www.hfea.gov.uk).

Contact us regarding this publication

Media: press.office@hfea.gov.uk

Statistical: statistics@hfea.gov.uk

Acronyms, abbreviations and glossary of frequently used terms

Our website, www.hfea.gov.uk, provides information about individual clinics, the fertility treatments available and a full glossary of terms.

Acronym/Word	Meaning
DET	Double Embryo Transfer – when two embryos are transferred to the woman's uterus at the same time.
DI	Donor Insemination. This is a broad term covering fertility treatment using donor sperm where fertilisation takes place inside the woman's body, unlike in IVF. Instead, donor sperm is introduced to the woman's uterus (IUI), cervix (ICI), or vagina (IVI).
eSET	Elective Single Embryo Transfer – when a woman opts to have one embryo transferred at a time even though she may have more available. This is done to reduce the risk of multiple births.
Egg sharing	An arrangement where a woman seeking IVF treatment undergoes a cycle of treatment in which her eggs are recovered. She then uses a proportion of these eggs in her own treatment and donates the remaining eggs to another woman. The woman donating her eggs may receive benefits such as reduction in the cost of her treatment.
ET	Embryo Transfer
ICSI	Intra-Cytoplasmic Sperm Injection. For some IVF procedures, fertilisation involves a specialised technique known as ICSI. In ICSI, a single sperm is injected directly into the woman's egg.
IUI	Intra Uterine Insemination, a form of DI where the man's sperm is placed directly in to the woman's uterus
IVF	In Vitro Fertilisation. Patient's eggs and her partner's or donor's sperm are collected and mixed together in a laboratory to achieve fertilisation outside the body. The embryos produced may then be transferred into the female patient.
LBR	Live Birth Rate - the percentage of cycles started in one year which resulted in a live birth.
Live birth	A birth event of at least one baby showing some signs of life
MBR	Multiple Birth Rate – the percentage of live births which were of more than one live baby.
Miscarriage	The loss of a pregnancy before the foetus is 24 weeks old.
Multiple birth	A birth event where more than one live baby is born
PGD	Pre-implantation Genetic Diagnosis
Still birth	Birth of a baby after 24 weeks gestation showing no sign of life.

Frequently asked questions

What is infertility?

Infertility is defined as 'failure to conceive after frequent unprotected sexual intercourse for one to two years' by the National Institute for Health and Clinical Excellence (NICE).¹¹

After pregnancy, infertility is the most common reason for women aged 20–45 to see their GP.

Is it a common problem?

Fertility problems affect one in seven couples in the UK – approximately 3.5 million people. Most couples (about 84 out of every 100) who have regular sexual intercourse (that is, every 2 to 3 days) and who do not use contraception will get pregnant within a year. About 92 out of 100 couples who are trying to get pregnant do so within 2 years.¹¹

What do you mean by fertility treatment?

We have used the phrase fertility treatment to cover the medical techniques which assist women to have children.

Types of fertility treatment include IVF (in vitro fertilisation), ICSI (intra-cytoplasmic sperm injection) and Donor Insemination (DI).

In IVF, a woman's eggs are removed from her ovaries by a doctor and are combined with sperm in the laboratory; if embryos then develop, some or all of them will be returned to the woman's body, where they will hopefully lead to a pregnancy. In this publication we use 'IVF' to cover both 'standard' IVF and ICSI, unless otherwise specified.

A full list of treatments available and descriptions of what they involve can be found on our website, www.hfea.gov.uk.

What do you mean by a treatment cycle?

Fertility treatment, such as IVF, normally happens over a period of about two weeks or more; therefore it is called a cycle of treatment rather than a one off procedure.

The start of a cycle is usually taken to be when the woman starts taking drugs to stimulate egg production. In this report we include data on all the cycles that were started, even if they were discontinued before they were completed.

How do you get your data?

The HFEA collects data of all the licensed treatments performed each year in the UK fertility sector. The data is supplied by the clinics performing the treatments and they remain responsible for its accuracy.

How do you determine the live birth rate, pregnancy rate, and multiple pregnancy and birth rates?

Unless otherwise stated, all the rates we quote are for one calendar year.

Live birth rates per cycle started: This is the percentage of cycles started in one year which resulted in a live birth.¹²

¹¹ National Institute for Health and Clinical Excellence (NICE). Fertility: assessment and treatment for people with fertility problems. Clinical guideline 11. London: NICE; 2004. www.nice.org.uk/nicemedia/live/10936/29269/29269.pdf

¹² To calculate this divide the number of live birth events resulting from cycles started in that year, by the number of cycles started in that year. This is multiplied by 100 to give a percentage.

Pregnancy rates per embryo transfer, or per cycle started: This is the percentage of embryo transfers, or cycles which resulted in the woman becoming pregnant (as confirmed by ultrasound). Commonly we want to compare pregnancy rates after different types of embryo transfer (for instance, elective single embryo transfer with double embryo transfer) and when we do this we use the pregnancy rate per embryo transfer.¹³ However pregnancy rates can be presented per cycle started, this difference is always made clear.

Multiple pregnancy rate: This is the percentage of all pregnancies (confirmed by ultrasound) which are of more than one foetus.¹⁴

Multiple birth rate: This is the percentage of all live births which were of more than one live baby.¹⁵

What outcomes are included in your results data?

Our data is presented by the year the treatment cycle started, not the year a consequent pregnancy or birth was reported in. Other data providers, such as the Office for National Statistics (ONS), publish birth rates according to the year the child was born.

There are different ways to account for the outcomes of a treatment. Our live birth data counts all birth events where one or more babies were born showing some sign of life, including those who go on to die within the first month of life (neonatal deaths). Our multiple birth data counts only birth events where two or more babies were born alive, including those where one or more of the babies die within the first month of life.

Still births, where a baby is born after 24 weeks gestation showing no signs of life are not included in either live birth or multiple birth counts. This means that a multiple pregnancy which results in the birth of one live baby and one still born baby would not be counted by the HFEA as a multiple birth. The ONS however classes a multiple birth as a pregnancy resulting in the birth of more than one baby, whether alive or stillborn.

Such differences can make it hard to compare our data to that of other providers.

Why is the 2009 live birth data only being published in 2011?

Results are published according to the year in which the treatment cycle was started, and the clinics then have one year to report the results to us. This means that for a cycle started in December 2009, we may not know the outcome until December 2010. Once submitted, data is checked, which takes time but is essential to ensure the figures are accurate.

¹³ To calculate this divide the number of pregnancies (confirmed by ultrasound) by the number of embryo transfers. This is multiplied by 100 to give a percentage.

¹⁴ To calculate this divide the number of pregnancies which have been confirmed as having 2 or more foetal sacs (multiple pregnancies), by the number of pregnancies which have confirmed 1 or more foetal sacs (all pregnancies). This is multiplied by 100 to give a percentage.

¹⁵ To calculate this divide the number of live birth events which included 2 or more babies showing some sign of life at birth (multiple births), by the number of births which involved 1 or more babies born showing some sign of life at birth (all births). This is multiplied by 100 to give a percentage.

Where can I get more information about individual clinics?

[Choose a Fertility Clinic](#) on our website, has been designed so patients can easily find the latest and most complete information about each licensed UK fertility clinic, helping them decide which clinic best suits them.

Why don't you produce clinic league tables?

It is not meaningful to directly compare clinics' success rates or create 'league tables' of clinics' performance because:

- Clinics treat patients with different problems and this will affect the average success rates we show for clinics
- Most clinics carry out too few cycles each year to reliably predict a patient's future chance of success
- The success rates are from about two years ago and may not be a good indication of success rates at the particular clinic today
- The majority of clinics' outcomes are around the national average

Why do the results for older women seem to vary so much year to year?

We have broken down most of the results presented here into standard age groups. The majority of cycles performed are in the under 40 age groups and as the age increases, the number of women in each group decreases.

If there is only a small number of women in an age group it can make results appear to be very variable, or changeable, when expressed as a percentage. For instance, one year we may see that from 1,000 cycles performed in the youngest age group, there were 300 live births. This would give a live birth rate of 30%. We may see in the same time period that only 10 cycles were performed in the oldest age group, three of which resulted in live births. This also results in a live birth rate of 30%. If the next year, the number of cycles stays the same, but one fewer woman in each age group has a live birth, the percentages will change to 29.9% for the younger women (barely changing), and to 20% for the older one (it appears the rate has dropped dramatically). Because the larger groups are less affected by small changes (possibly caused by chance occurrences), they tend to remain steadier.

For this reason, we do not present percentages where the group size (for instance the number of cycles performed) is fewer than 50. In most of these cases, and in particular where the numbers are less than 5 and patient identifiability becomes a risk, we have aggregated the age groups so that the group size is greater than 50.

Can I access your data?

The data which forms this publication can be downloaded as a spreadsheet from our website, www.hfea.gov.uk.

We also publish a version of our Register in an anonymous form on our website. The data can be imported into a spreadsheet or statistical package for analysis. The data is updated periodically and you can choose to be notified when this happens.