

**Council on  
Human Reproductive Technology  
2023 Annual Statistics**

published in July 2024\*

\* Statistics on live birth events in relation to reproductive procedures performed in 2023 will be covered in the final version of the Annual Statistics 2023 to be available in 2025.

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# Introduction

The Council on Human Reproductive Technology was established under section 4 of the Human Reproductive Technology Ordinance (Cap. 561) (“the Ordinance”) in April 2001 to regulate the provision of reproductive technology (RT) procedures, the conducting of embryo research, the handling, storing or disposing of gametes or embryos used or intended to be used in connection with a RT procedure or embryo research, and surrogacy arrangement.

According to section 5(1) of the Ordinance, the Council shall keep under review information about RT activities and publish statistics and summaries concerning relevant activities which have been carried on. To this end, the *Annual Statistics* has been published since 2009.

This *2023 Annual Statistics* lists out different RT activities carried out by the licensed centres in operation in the year. It provides graphs, charts and tables that summarize information about the RT activities and its outcomes in 2023. The figures in this publication are based only on RT cycles performed in 2023 and cannot be used to calculate cumulative success rates.

As at 31.12.2023, there were a total of 40 valid licences issued by the Council, including 19 Artificial Insemination by Husband (AIH) licences, 18 Treatment licences and 3 Research licences. This publication provides information on the reported outcomes of all RT cycles started in the licensed AIH and treatment centres.

RT cycles include any process in which (1) a RT procedure is performed or (2) frozen embryos have been thawed with the intent of transferring them to a woman. For example, an RT cycle could include an embryo transfer. Another cycle could include egg retrieval and storage of embryos.

Of the 8,494 non-donor in vitro fertilization (IVF) and frozen-thawed embryo transfer (FET) cycles reported in 2023, a total of 5,440 (64.0%) were started with the intent to transfer at least one embryo. The other 3,054 cycles (36.0%) were banking cycles, where eggs or embryos were cryopreserved (frozen) and stored for potential future use.

A patient’s chances of having a pregnancy and live-birth delivery when using RT are influenced by many factors. Some of these factors are patient-related, such as the patient’s age or the cause of infertility. This *Annual Statistics* includes the figures on infertility diagnosis of patients for the reference of readers.

This is the interim version of the *2023 Annual Statistics*. The statistics on live birth events in relation to RT procedures performed in 2023 will be covered in the final version of the *Annual Statistics 2023* to be available in 2025.

The figures in this report provide data on trends of the types of procedures performed. The figures also include RT cycles that used fresh or frozen oocytes (for non-donor IVF cycles only).

# Key Terms used in the Annual Statistics

Terms	Description
Artificial insemination by husband (AIH)	The placing of sperm inside a woman's vagina or uterus (i.e. womb) by means other than sexual intercourse. In artificial insemination by husband (AIH), the husband's sperm is used.
Clinical pregnancy	A pregnancy documented by one or more gestational sacs on ultrasound or the histological confirmation of gestational products in miscarriages or ectopic pregnancies.
Clinical pregnancy rate	Clinical pregnancy rate is expressed as number of clinical pregnancies per 100 treatment cycles started/commenced or per 100 cycles reaching the stage of attempted oocyte recovery/retrieval or embryo transfer (ET).
Donor insemination (DI)	Also known as artificial insemination by donor (AID). DI is an artificial insemination whereby sperm collected from a man who is not the woman's husband is used.
Ectopic pregnancy	A pregnancy in which implantation has taken place outside the uterine cavity.
Heterotopic pregnancy	Simultaneous existence of intrauterine and ectopic pregnancy.
In vitro fertilisation (IVF)	In vitro fertilization (a) means the fertilization of an egg by sperm outside the human body, whether or not the egg was originally removed from the body of that or any other woman; (b) includes any procedure involving the induction or aspiration of an egg, or the culture of an egg for the purposes of any such fertilization. It includes IVF without ICSI and IVF with ICSI.
Intracytoplasmic sperm injection (ICSI)	A method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
Live birth event	For the purposes of the Code of Practice on Reproductive Technology and Embryo Research issued by the Council, live birth event shall mean an event of the birth of one or more than one live child from one single pregnancy. The birth of live twins, triplets and so on will therefore be considered as a single "live birth event".
Live birth event rate	Unless otherwise specified, live birth event (single and multiple live births included) rate is expressed per 100 treatment cycles started, i.e. live birth event rate = Number of live birth events/Number of treatment cycles x 100%

Terms	Description
Microsurgical epididymal sperm aspiration/extraction (MESA/MESE)	A surgical procedure performed with the assistance of an operating microscope to retrieve sperm from the epididymis of men with obstructive azoospermia. In the absence of optical magnification, any surgical procedure to retrieve sperm from the epididymis should also be registered as MESE.
Miscarriage (Spontaneous abortion)	A loss of an intrauterine pregnancy detected clinically or by ultrasound, and less than 24 weeks' gestation (as estimated by the day of embryo transfer or day of ovulation).
Multiple live birth event rate	Unless otherwise specified, multiple live birth event rate is expressed per 100 treatment cycles started, i.e. Multiple live birth event rate = Number of multiple live birth events/Number of treatment cycles x 100%
No. of no pregnancy	The number of treatment cycles started and reported by the licensed centre with an outcome of "no pregnancy", including those abandoned and those ending with elective cryopreservation of embryos.
Ongoing pregnancy	Ongoing pregnancy with foetal cardiac activity during the period of the year being reported on.
Ongoing pregnancy rate	Ongoing pregnancy rate is expressed as number of ongoing pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer.
Testicular sperm aspiration/extraction (TESA/TESE)	A surgical procedure involving one or more testicular biopsies or needle aspirations to obtain sperm for use in IVF and/or ICSI.
Treatment cycle	The process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period. This annual statistics only covered treatment cycles that led to (1) Gamete transfer/embryo replacement/insemination, or stopped because of (2) Elective cryopreservation of all embryos or (3) Cycle abandonment.

# **Key Statistics and Charts**

# Key Statistics for 2023

## A (for non-donor IVF cycles only)

1 Type of RT procedures (%)		2 Patient diagnosis <sup>3</sup> (%)							
(Please refer to <b>Chart A1</b> )		(Please refer to <b>Chart A2</b> )							
		<b>Single cause</b>					<b>Multiple causes</b>		
IVF <sup>1</sup> (with ICSI <sup>2</sup> )	33.47	Endometriosis	2.9	Male factor	21.6	Tubal problem	2.1	Female & male factors	33.8
IVF (without ICSI)	8.77	Immunologic problem	0.2	Ovulatory problem	3.2	Other Causes	14.8	Female factors only:	5.6
Frozen-thawed ET	57.76			Tubo-peritoneal problem	3.9	Unexplained	11.9		

Pregnancy & Live Birth Outcomes	Age Group <sup>4</sup>							All/ Overall%
	25 or below	26-30	31-35	36-40	41-45	46-50	51 or above	
<b>3 Fresh embryos from patient couple's own gametes</b>								
a Number of patients	4	109	901	1437	438	33	0	<b>2922</b>
b Number of treatment cycles <sup>5</sup>	4	114	989	1669	725	87	NA	<b>3588</b>
c Number of treatment cycles with embryo transferred	1	8	135	289	130	7	NA	<b>570</b>
d Average number of embryo transferred	1.00	1.00	1.19	1.14	1.52	1.86	NA	<b>1.24</b>
e <i>Clinical pregnancy rate</i> <sup>6</sup> (%)	0.0	3.5	5.3	4.8	2.2	0.0	NA	<b>4.2</b>
<b>4 Frozen embryos from patient couple's own gametes</b>								
a Number of patients	2	129	1075	1761	581	34	1	<b>3583</b>
b Number of treatment cycles <sup>5</sup>	2	170	1504	2396	789	44	1	<b>4906</b>
c Number of treatment cycles with embryo transferred	2	168	1488	2384	783	44	1	<b>4870</b>
d Average number of embryo transferred	1.00	1.19	1.14	1.15	1.33	1.36	1.00	<b>1.18</b>
e <i>Clinical pregnancy rate</i> <sup>6</sup> (%)	50.0	52.4	47.5	39.4	28.8	15.9	0.0	<b>40.4</b>

<b>5 Trends of RT Procedures</b>	
a Number of patients and treatment cycles	Please refer to <b>Chart A5(a)</b>
b <i>Proportion of ICSI cycles</i> (%)	Please refer to <b>Chart A5(b)</b>

## B

<b>1 Storage of Gametes and Embryos</b>	
a Number of gametes and embryos stored by licensed centres	Please refer to <b>Chart B1(a)</b>
b Number of gametes or embryos stored or used for research	Please refer to <b>Chart B1(b)</b>

Remarks:

NA Not applicable

- (1) **In vitro fertilization (IVF)** (a) means the fertilization of an egg by sperm outside the human body, whether or not the egg was originally removed from the body of that or any other woman; (b) includes any procedure involving the induction or aspiration of an egg, or the culture of an egg for the purposes of any such fertilization.  
It includes Conventional IVF (IVF without ICSI) and IVF with ICSI.
- (2) **Intracytoplasmic sperm injection (ICSI)** means a method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
- (3) Total patient diagnosis percentages may be greater than 100% because more than one diagnosis can be reported for each treatment cycle.
- (4) The age of wife has been used in calculating the age of patient.
- (5) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.

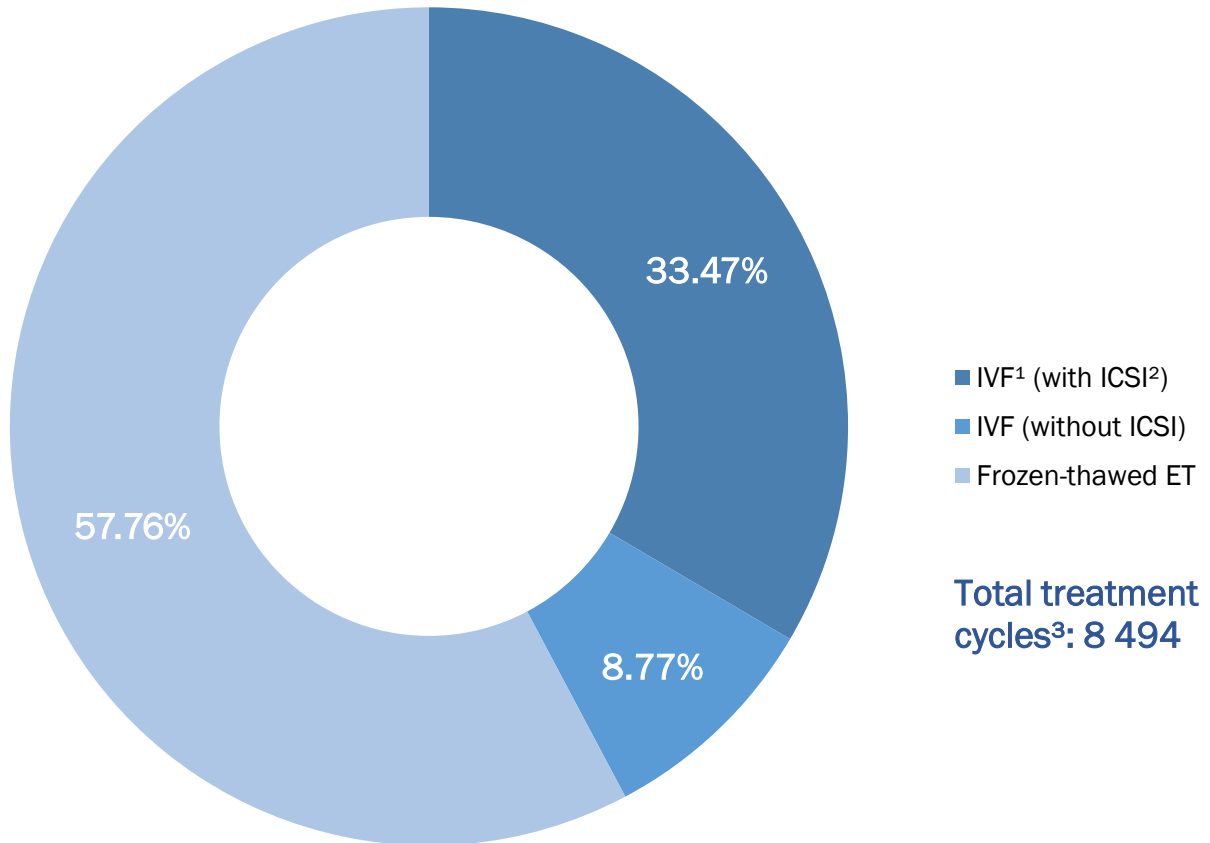
This annual statistics only covered treatment cycles that led to (1) Gamete transfer/embryo replacement/insemination, or stopped because of (2) Elective cryopreservation of all embryos or (3) Cycle abandonment.

- (ii) In this Key Statistics, the treatment cycles for (a) RT procedures involving donated gametes/embryos and (b) involving artificial insemination (i.e. AIH and DI) are excluded in the above table and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above table.
- (6) (i) **Clinical pregnancy** means a pregnancy documented by one or more gestational sacs on ultrasound or the histological confirmation of gestational products in miscarriages or ectopic pregnancies.
- (ii) **Clinical pregnancy rate** is expressed as number of clinical pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer. i.e. Clinical pregnancy rate = Number of clinical pregnancies/Number of treatment cycles x 100%
- (7) Licensed centres are required to report the details concerning outcome of pregnancy within 12 months after treatment. Information on live birth for treatment cycles carried out in the later part of 2023 is not yet available.



## Charts for selected Key Statistics

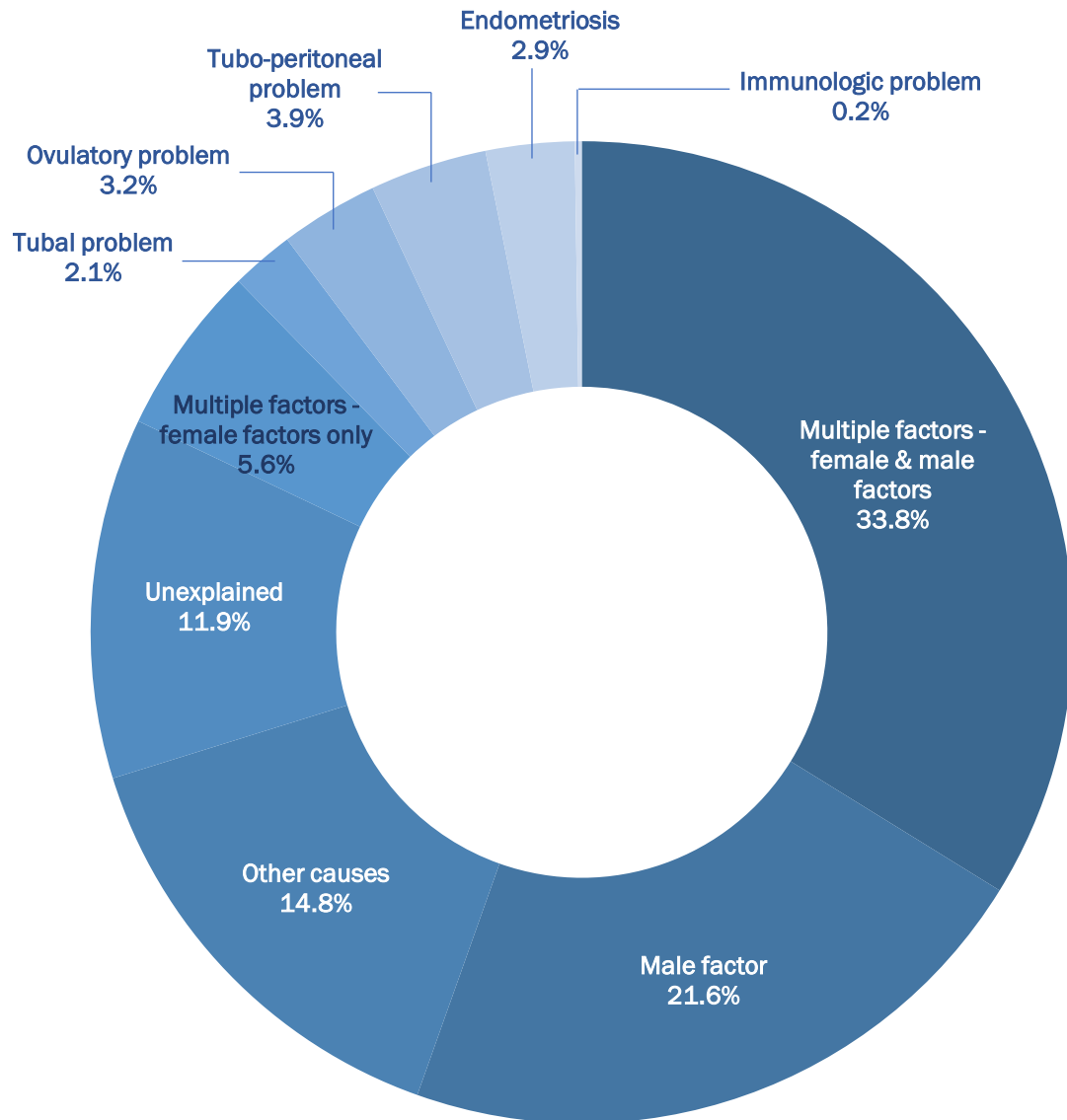
**Chart A1 - Type of RT Procedures taken by Patients (%)**  
(for non-donor IVF cycles only)



Remarks:

- (1) **In vitro fertilization (IVF)** (a) means the fertilization of an egg by sperm outside the human body, whether or not the egg was originally removed from the body of that or any other woman; (b) includes any procedure involving the induction or aspiration of an egg, or the culture of an egg for the purposes of any such fertilization. It includes **IVF without ICSI** and **IVF with ICSI**.
- (2) **Intracytoplasmic sperm injection (ICSI)** means a method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
- (3) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.  
(ii) In this chart, the treatment cycles for (a) RT procedures involving donated gametes/embryos and (b) involving artificial insemination (i.e. AIH and DI) are excluded in the above chart and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above chart.

**Chart A2 - Patients Diagnosis (%)**  
**(for non-donor IVF cycles only)**

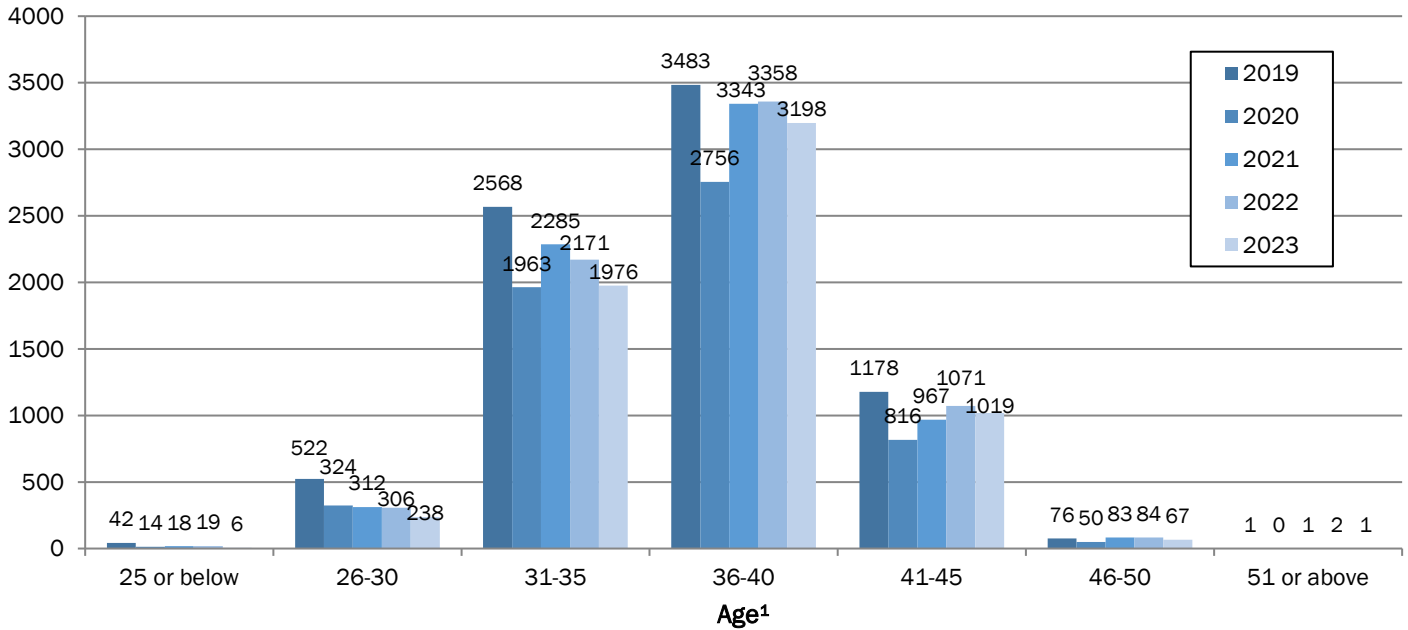


Remarks:

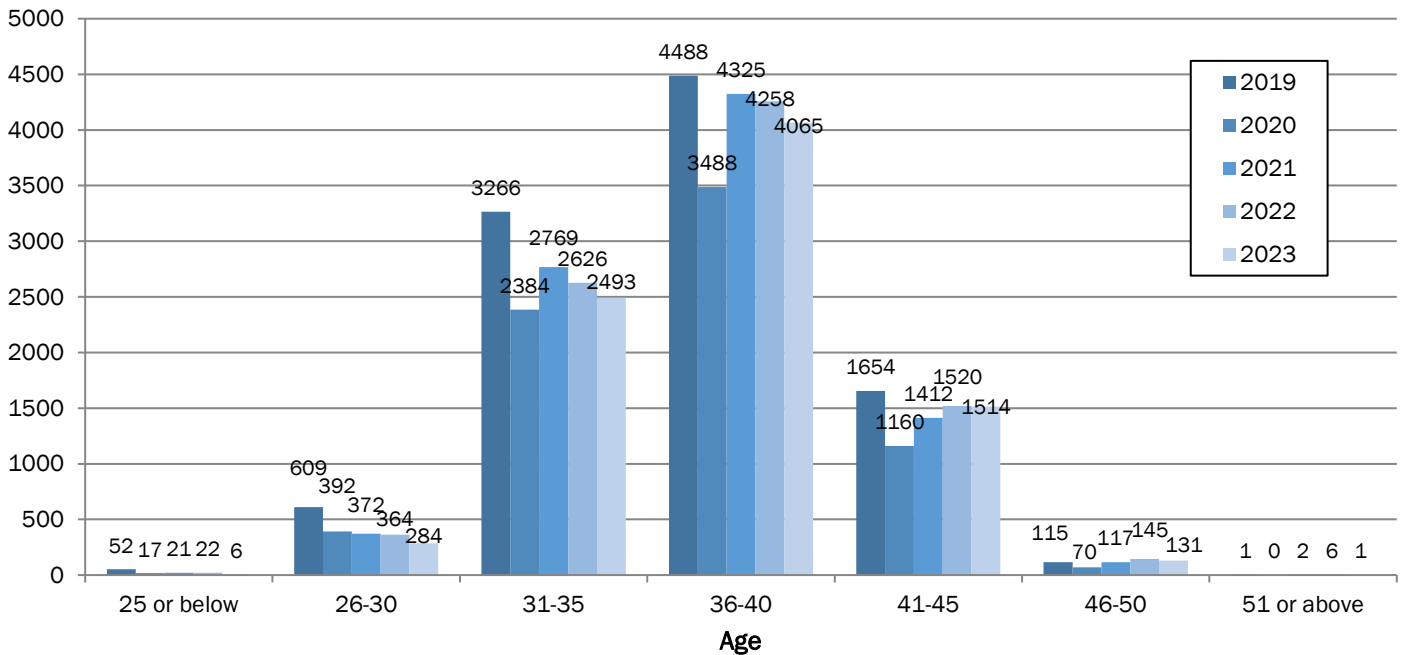
- (1) "Other causes" of infertility diagnosis reported by licensed centres included advanced maternal age, reduced ovarian reserve, coital problem, polycystic ovary syndrome, etc.

# Chart A5(a) - Number of Patients and Treatment Cycles (for non-donor IVF cycles only)

## Number of Patients



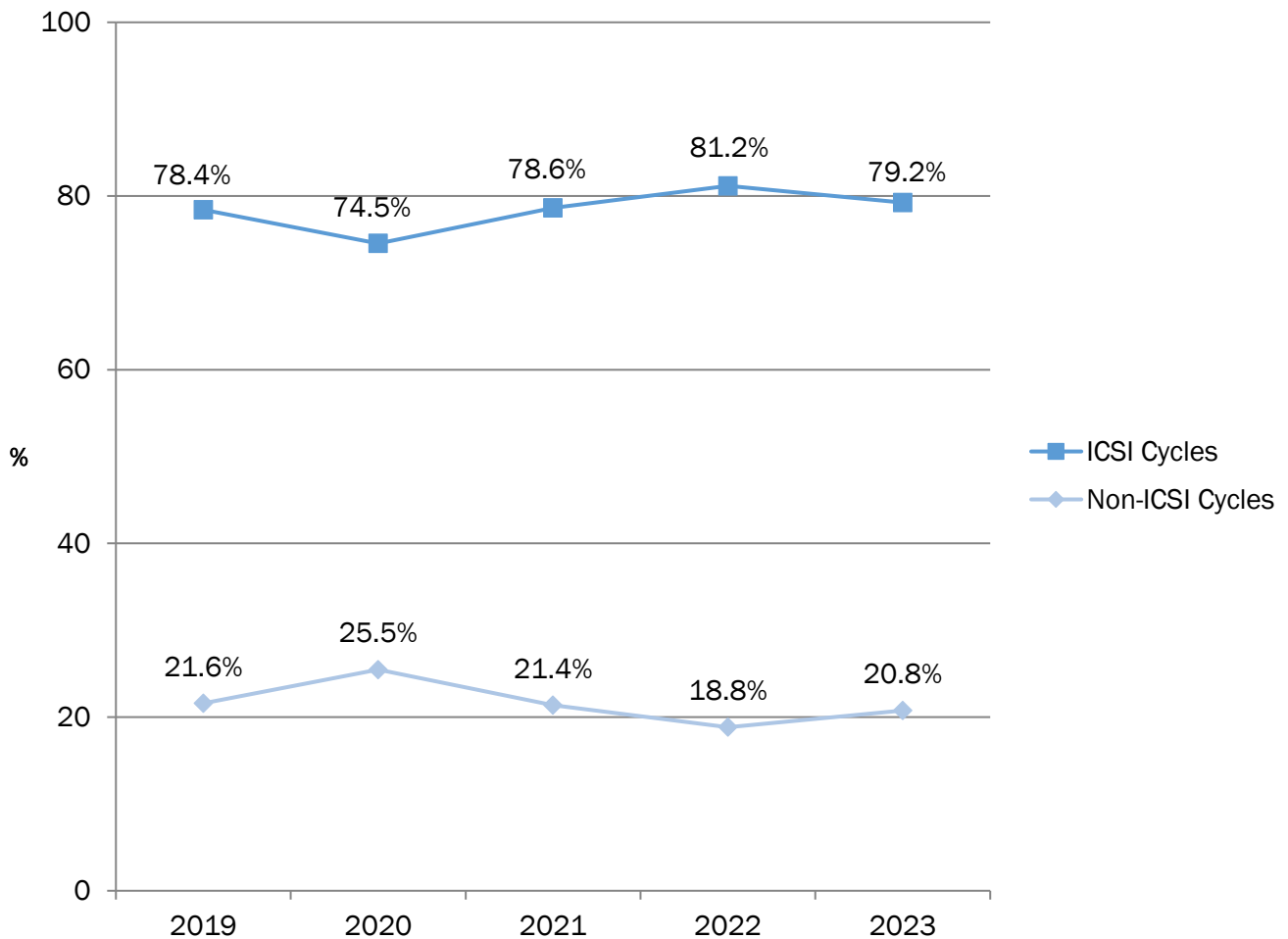
## Number of Treatment Cycles<sup>2</sup>



Remarks:

- (1) The age of wife has been used in calculating the age of patient.
- (2) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.
- (ii) In this chart, the treatment cycles for (a) RT procedures involving donated gametes/embryos and (b) involving artificial insemination (i.e. AIH and DI) are excluded from the above chart and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above chart.

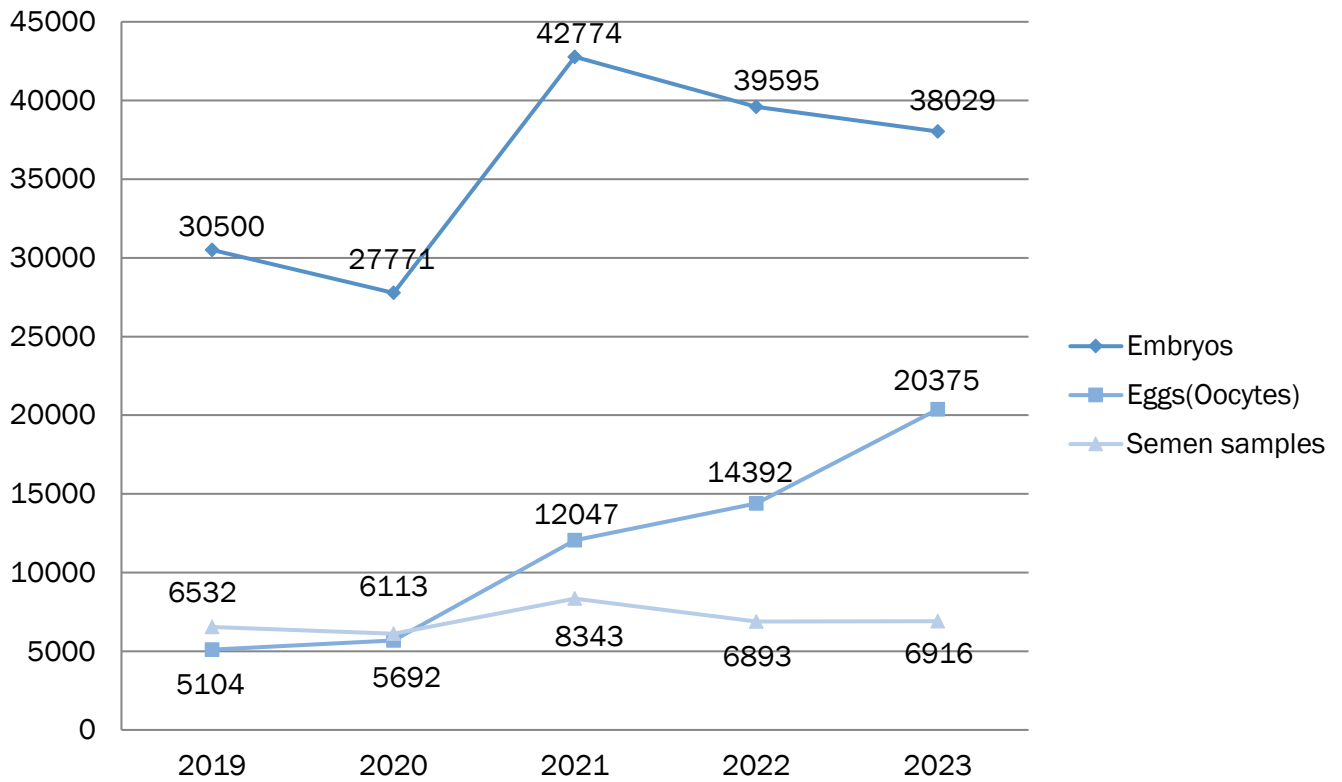
**Chart A5(b) - Proportion of ICSI<sup>1</sup> Cycles (%)  
(amongst all non-donor IVF cycles<sup>2</sup>)**



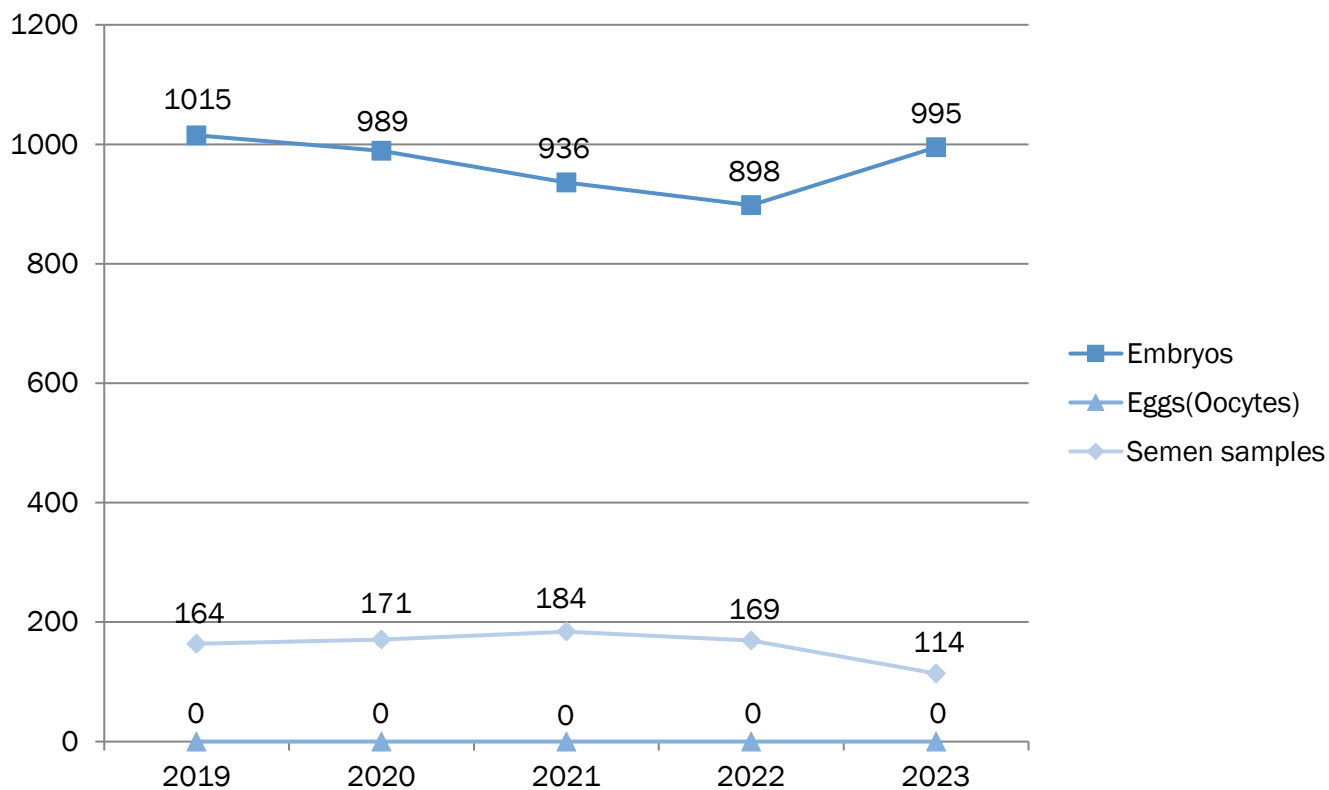
Remarks:

- (1) **Intracytoplasmic sperm injection (ICSI)** means a method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
- (2) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.
- (ii) In this chart, the treatment cycles for (a) RT procedures involving donated gametes/embryos and (b) involving artificial insemination (i.e. AIH and DI) are excluded from the above chart and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above chart.

**Chart B1(a) - Number of Gametes and Embryos Stored by Licensed Centres**



**Chart B1(b) - Number of Donated Gametes or Embryos Stored or Used for Research**



	Number of Donated Embryos Used for Research				
	2019	2020	2021	2022	2023
Embryos	96	75	0	3	0

# **Detailed Statistics Tables**

## Table 1 - Gamete and Embryo Donations Made in 2023

(Based on the information on Annual Statistics Forms received in the calendar year)

### a) Gamete and Embryo Donors by Age Group and Sex

Age Group	Gamete		Embryo		Total
	Female Donors	Male Donors	Female Donors	Male Donors	
25 or below	6	6	0	0	12
26-30	5	7	0	0	12
31-35	4	4	0	0	8
36-40	0	4	0	0	4
41-45	0	1	0	0	1
46-50	0	0	0	0	0
51 or above	0	0	0	0	0
<b>Total</b>	<b>15</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>37</b>

### b) Donors and Donated Materials

Donated Materials	Number of Donors	Number of Donations Made
Semen	22	27
Eggs (oocytes)	15	15
Embryos <sup>1</sup>	0	0

Remark:

(1) Both the female and male donors of the couple will be counted for an embryo donation.

<p><b>Source (for licensed centres)</b> AS Form 8</p>
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## Table 2 - Pregnancy and Birth Outcomes for Main Types of RT Procedures in 2023

(Based on the information on Data Collection Forms received in the calendar year)

Item		RT procedures involving patients' own gametes/embryos				RT procedures involving donated gametes/embryos	
		IVF <sup>1</sup>		Frozen-thawed ET	AIH <sup>3</sup>	DI <sup>3</sup>	RT procedures other than DI
		with ICSI <sup>2</sup>	without ICSI				
1	Number of patients	2212	710	3583	1691	3	38
2	Number of treatment cycles <sup>4</sup>	2843	745	4906	2720	5	50
3	Number of treatment cycles with embryo transferred	394	176	4870	NA	NA	43
4	Number of cycles of insemination	NA	NA	NA	2649	5	NA
<b>Treatment Outcome<sup>5</sup></b>							
5a	Number of clinical pregnancy <sup>6(i)</sup>	96	56	1981	277	1	23
	i Number of ongoing pregnancy <sup>7(i)</sup>	81	48	1668	241	0	19
	ii Number of miscarriage <sup>8</sup>	14	8	300	30	0	4
	iii Number of hydatidiform mole	0	0	0	0	1	0
	iv Number of ectopic pregnancy <sup>9</sup>	0	0	12	6	0	0
	v Number of heterotopic pregnancy <sup>10</sup>	0	0	0	0	0	0
	vi Number of termination of pregnancy	1	0	1	0	0	0
5b	Number of no pregnancy <sup>11</sup>	2747	689	2919	2437	4	27
5c	Number of lost to follow up <sup>12</sup>	0	0	6	6	0	0
5d	i <i>Clinical pregnancy rate<sup>6(iii)</sup> (per treatment cycle) (%)</i>	3.4	7.5	40.4	10.2	20.0	46.0
	ii <i>Clinical pregnancy rate (per treatment cycle with embryo transferred) (%)</i>	24.4	31.8	40.7	NA	NA	53.5
	iii <i>Clinical pregnancy rate (per cycle of insemination) (%)</i>	NA	NA	NA	10.5	20.0	NA
5e	i <i>Ongoing pregnancy rate<sup>7(ii)</sup> (per treatment cycle) (%)</i>	2.8	6.4	34.0	8.9	0.0	38.0
	ii <i>Ongoing pregnancy rate (per treatment cycle with embryo transferred) (%)</i>	20.6	27.3	34.3	NA	NA	44.2
	iii <i>Ongoing pregnancy rate (per cycle of insemination) (%)</i>	NA	NA	NA	9.1	0.0	NA

### Remarks:

NA Not applicable

- (1) **In vitro fertilization (IVF)** (a) means the fertilization of an egg by sperm outside the human body, whether or not the egg was originally removed from the body of that or any other woman; (b) includes any procedure involving the induction or aspiration of an egg, or the culture of an egg for the purposes of any such fertilization. It includes **IVF without ICSI** and **IVF with ICSI**.
- (2) **Intracytoplasmic sperm injection (ICSI)** means a method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
- (3) **Artificial insemination** refers to the placing of sperm inside a woman's vagina or uterus (i.e. womb) by means other than sexual intercourse. In **artificial insemination by husband (AIH)**, the husband's sperm is used. In **artificial insemination by donor (AID or DI)**, sperm collected from a man who is not the woman's husband is used.

- (4) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.
- This annual statistics only covered treatment cycles that led to (1) Gamete transfer/embryo replacement/insemination, or stopped because of (2) Elective cryopreservation of all embryos or (3) Cycle abandonment.
- (ii) In this table, the treatment cycles for RT procedures involving donated gametes/embryos and those involving artificial insemination (i.e. AIH and DI) are shown. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above table
- (5) Figures on **treatment outcome** reported in the interim statistics will be replaced when outcome of pregnancy is available in the final statistics. Licensed centres are required to report the details concerning **pregnancy outcome** within 12 months after treatment. Information on live birth for treatment cycles carried out in the later part of 2023 is not yet available.
- (6) (i) **Clinical pregnancy** means pregnancy documented by one or more gestational sacs on ultrasound or the histological confirmation of gestational products in miscarriages or ectopic pregnancies.
- (ii) **Clinical pregnancy rate** is expressed as number of clinical pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer.
- **Clinical pregnancy rate per treatment cycles** [Item 5d(i)] = Number of clinical pregnancies [Item 5a]/Number of treatment cycles[Item 2] x 100%
  - **Clinical pregnancy rate per treatment cycles with embryo transferred** [Item 5d(ii)] = Number of clinical pregnancies [Item 5a]/Number of treatment cycles with embryo transferred [Item 3] x 100%
  - **Clinical pregnancy rate per cycles of insemination** [Item 5d(iii)] = Number of clinical pregnancies [Item 5a]/Number of cycles of insemination [Item 4] x 100%
- (7) (i) Ongoing pregnancy means ongoing pregnancy with foetal cardiac activity during the period of the year being reported on.
- (ii) **Ongoing pregnancy rate** is expressed as number of ongoing pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer.
- **Ongoing pregnancy rate per treatment cycles** [Item 5e(i)] = Number of ongoing pregnancies [Item 5a(i)]/Number of treatment cycles [Item 2] x 100%
  - **Ongoing pregnancy rate per treatment cycles with embryo transferred** [Item 5e(ii)] = Number of ongoing pregnancies [Item 5a(i)]/Number of treatment cycles with embryo transferred [Item 3] x 100%
  - **Ongoing pregnancy rate per cycles of insemination** [Item 5e(iii)] = Number of ongoing pregnancies [Item 5a(i)]/Number of cycles of insemination [Item 4] x 100%
- (8) Miscarriage (Spontaneous abortion) refers to loss of an intrauterine pregnancy detected clinically or by ultrasound, and less than 24 weeks' gestation (as estimated by the day of embryo transfer or day of ovulation).
- (9) Ectopic pregnancy refers to a pregnancy in which implantation has taken place outside the uterine cavity.
- (10) Heterotopic pregnancy refers to simultaneous existence of intrauterine and ectopic pregnancy.
- (11) Number of no pregnancy refers to the number of treatment cycles started and reported by the licensed centre with an outcome of "no pregnancy", including those abandoned and those ending with elective cryopreservation of embryos.
- (12) Figures on number of lost to follow up cases will be reported in the interim statistics and it will be updated when pregnancy outcome is available in the final statistics.

**Source (for licensed centres)**

DC Form 1, 2, 3 & 7

### Table 3 - Pregnancy and Birth Outcomes by Age Group and Main Type of RT Procedures in 2023

(for non-donor treatment cycles only)

(Based on the information on Data Collection Forms received in the calendar year)

<b>IVF<sup>1</sup> (with ICSI<sup>2</sup>)</b>					
Age Group <sup>4</sup>	Number of Patients	Number of Treatment Cycles <sup>5</sup>	Number of Treatment Cycles with Embryo Transferred	Ongoing Pregnancy <sup>6</sup>	
				n <sup>6(i)</sup>	(%) <sup>6(ii)</sup>
25 or below	4	4	1	0	(0.0)
26-30	89	94	7	4	(4.3)
31-35	668	746	90	34	(4.6)
36-40	1016	1227	167	33	(2.7)
41-45	405	688	123	10	(1.5)
46-50	30	84	6	0	(0.0)
51 or above	0	NA	NA	NA	
<b>Total</b>	<b>2212</b>	<b>2843</b>	<b>394</b>	<b>81</b>	<b>(2.8)</b>
<b>IVF (without ICSI)</b>					
Age Group	Number of Patients	Number of Treatment Cycles	Number of Treatment Cycles with Embryo Transferred	Ongoing Pregnancy	
				n	(%)
25 or below	0	NA	NA	NA	
26-30	20	20	1	0	(0.0)
31-35	233	243	45	15	(6.2)
36-40	421	442	122	32	(7.2)
41-45	33	37	7	1	(2.7)
46-50	3	3	1	0	(0.0)
51 or above	0	NA	NA	NA	
<b>Total</b>	<b>710</b>	<b>745</b>	<b>176</b>	<b>48</b>	<b>(6.4)</b>
<b>All IVF (Fresh cycles)</b>					
Age Group	Number of Patients	Number of Treatment Cycles	Number of Treatment Cycles with Embryo Transferred	Ongoing Pregnancy	
				n	(%)
25 or below	4	4	1	0	(0.0)
26-30	109	114	8	4	(3.5)
31-35	901	989	135	49	(5.0)
36-40	1437	1669	289	65	(3.9)
41-45	438	725	130	11	(1.5)
46-50	33	87	7	0	(0.0)
51 or above	0	NA	NA	NA	
<b>Total</b>	<b>2922</b>	<b>3588</b>	<b>570</b>	<b>129</b>	<b>(3.6)</b>

Frozen-thawed ET					
Age Group	Number of Patients	Number of Treatment Cycles	Number of Treatment Cycles with Embryo Transferred	Ongoing Pregnancy	
				n	(%)
25 or below	2	2	2	1	(50.0)
26-30	129	170	168	79	(46.5)
31-35	1075	1504	1488	622	(41.4)
36-40	1761	2396	2384	796	(33.2)
41-45	581	789	783	166	(21.0)
46-50	34	44	44	4	(9.1)
51 or above	1	1	1	0	(0.0)
<b>Total</b>	<b>3583</b>	<b>4906</b>	<b>4870</b>	<b>1668</b>	<b>(34.0)</b>
AIH <sup>3</sup>					
Age Group	Number of Patients	Number of Treatment Cycles	Number of cycles of insemination	Ongoing Pregnancy	
				n	(%)
25 or below	1	1	1	0	(0.0)
26-30	130	222	212	18	(8.1)
31-35	799	1343	1306	146	(10.9)
36-40	603	913	894	70	(7.7)
41-45	141	220	218	7	(3.2)
46-50	16	20	17	0	(0.0)
51 or above	1	1	1	0	(0.0)
<b>Total</b>	<b>1691</b>	<b>2720</b>	<b>2649</b>	<b>241</b>	<b>(8.9)</b>

Remarks:

NA Not applicable

- (1) **In vitro fertilization (IVF)** (a) means the fertilization of an egg by sperm outside the human body, whether or not the egg was originally removed from the body of that or any other woman; (b) includes any procedure involving the induction or aspiration of an egg, or the culture of an egg for the purposes of any such fertilization. It includes **IVF without ICSI** and **IVF with ICSI**.
- (2) **Intracytoplasmic sperm injection (ICSI)** means a method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
- (3) **Artificial insemination** refers to the placing of sperm inside a woman's vagina or uterus (i.e. womb) by means other than sexual intercourse. In **artificial insemination by husband (AIH)**, the husband's sperm is used. In **artificial insemination by donor (AID or DI)**, sperm collected from a man who is not the woman's husband is used.
- (4) The age of wife has been used in calculating the age of patient.
- (5) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.

This annual statistics only covered treatment cycles that led to (1) gamete transfer/embryo replacement/insemination, or stopped because of (2) elective cryopreservation of all embryos or (3) cycle abandonment.

- (ii) In this table, the treatment cycles for RT procedures involving donated gametes/embryos are excluded from the above table and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above table.
- (6) **Ongoing pregnancy** means ongoing pregnancy with foetal cardiac activity during the period of the year being reported on.
- (i) n = Number of ongoing pregnancies
  - (ii) **Ongoing pregnancy rate** is expressed as number of ongoing pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer. i.e.  $\text{Ongoing pregnancy rate} = \frac{\text{number of ongoing pregnancies [n]}}{\text{Number of treatment cycles}} \times 100\%$
- (7) Licensed centres are required to report the details concerning outcome of pregnancy within 12 months after treatment. Information on live birth for treatment cycles carried out in the later part of 2023 is not yet available.

**Source (for licensed centres)**

DC Form 1 & 7

**Table 4 - Effect of One/Two/Three Embryo(s) Transferred (Fresh/Frozen Cycle with or without ICSI<sup>1</sup>) on Pregnancy and Birth Outcomes<sup>2</sup> in 2023 (For non-donor IVF cycles only)**

(Based on the information on Data Collection Forms received in the calendar year)

<b>One Embryo Transferred</b>				
Age Group <sup>3</sup>	Number of Patients	Number of Treatment Cycles <sup>4</sup> with Embryo Transferred	Ongoing Pregnancy <sup>5</sup>	
			n <sup>5(i)</sup>	(%) <sup>5(ii)</sup>
25 or below	3	3	1	(33.3)
26-30	118	145	69	(47.6)
31-35	1074	1401	566	(40.4)
36-40	1793	2293	711	(31.0)
41-45	489	611	129	(21.1)
46-50	24	31	3	(9.7)
51 or above	1	1	0	(0.0)
<b>Total</b>	<b>3502</b>	<b>4485</b>	<b>1479</b>	<b>(33.0)</b>

<b>Two Embryos Transferred</b>				
Age Group <sup>3</sup>	Number of Patients	Number of Treatment Cycles <sup>4</sup> with Embryo Transferred	Ongoing Pregnancy <sup>5</sup>	
			n <sup>5(i)</sup>	(%) <sup>5(ii)</sup>
25 or below	0	NA	NA	
26-30	27	30	14	(46.7)
31-35	193	217	100	(46.1)
36-40	325	368	146	(39.7)
41-45	225	275	42	(15.3)
46-50	16	18	1	(5.6)
51 or above	0	NA	NA	
<b>Total</b>	<b>786</b>	<b>908</b>	<b>303</b>	<b>(33.4)</b>

### Three Embryos Transferred

Age Group <sup>3</sup>	Number of Patients	Number of Treatment Cycles <sup>4</sup> with Embryo Transferred	Ongoing Pregnancy <sup>5</sup>	
			n <sup>5(i)</sup>	(%) <sup>5(ii)</sup>
25 or below	0	NA	NA	
26-30	1	1	0	(0.0)
31-35	5	5	4	(80.0)
36-40	12	12	3	(25.0)
41-45	24	27	6	(22.2)
46-50	2	2	0	(0.0)
51 or above	0	NA	NA	
<b>Total</b>	<b>44</b>	<b>47</b>	<b>13</b>	<b>(27.7)</b>

Remarks:

NA Not applicable

- (1) **Intracytoplasmic sperm injection (ICSI)** means a method of gamete micromanipulation by which a single sperm is injected into the inner cellular structure of the egg.
- (2) Figures on **treatment outcome** reported in the interim statistics will be replaced when pregnancy outcome is available in the final statistics. Licensed centres are required to report the details concerning **pregnancy outcome** within 12 months after treatment. Information on live birth for treatment cycles carried out in the later part of 2023 is not yet available.
- (3) The age of wife has been used in calculating the age of patient.
- (4) (i) **Treatment cycles** refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.  
  
This annual statistics only covered treatment cycles that led to (1) gamete transfer/embryo replacement/insemination, or stopped because of (2) elective cryopreservation of all embryos or (3) cycle abandonment.  
  
(ii) In this table, treatment cycles for (a) RT procedures involving donated gametes/embryos and (b) involving artificial insemination (i.e. AIH and DI) are excluded from the above table and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above table.
- (5) **Ongoing pregnancy** means ongoing pregnancy with foetal cardiac activity during the period of the year being reported on.
  - (i) n = Number of ongoing pregnancies with single foetus and multiple foetuses.
  - (ii) **Ongoing pregnancy rate** is expressed as number of ongoing pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer. i.e. Ongoing pregnancy rate = number of ongoing pregnancies [n]/Number of treatment cycles with embryo transferred x 100%

**Source (for licensed centres)**

DC Form 1

**Table 5 - Pregnancy and Birth Outcomes by Age Group using Fresh/Frozen Oocytes (Fresh Cycles) in 2023  
(For non-donor IVF cycles only)**

(Based on the information on Data Collection Forms received in the calendar year)

<b>Fresh Cycles using Fresh Oocytes</b>					
Age Group <sup>1</sup>	Number of Patients	Number of Treatment Cycles <sup>2</sup>	Number of Treatment Cycles with Embryo Transferred	Ongoing Pregnancy <sup>3</sup>	
				n <sup>3(i)</sup>	(%) <sup>3(ii)</sup>
25 or below	2	2	1	0	(0.0)
26-30	106	111	7	3	(2.7)
31-35	846	916	126	45	(4.9)
36-40	1307	1495	279	62	(4.1)
41-45	388	604	119	8	(1.3)
46-50	27	59	7	0	(0.0)
51 or above	0	NA	NA	NA	
<b>Total</b>	<b>2676</b>	<b>3187</b>	<b>539</b>	<b>118</b>	<b>(3.7)</b>

<b>Fresh Cycles using Frozen Oocytes</b>					
Age Group <sup>1</sup>	Number of Patients	Number of Treatment Cycles <sup>2</sup>	Number of Treatment Cycles with Embryo Transferred	Ongoing Pregnancy <sup>3</sup>	
				n <sup>3(i)</sup>	(%) <sup>3(ii)</sup>
25 or below	0	NA	NA	NA	
26-30	1	1	1	1	(100.0)
31-35	7	9	3	0	(0.0)
36-40	21	22	9	3	(13.6)
41-45	19	20	12	3	(15.0)
46-50	2	2	0	0	(0.0)
51 or above	0	NA	NA	NA	
<b>Total</b>	<b>50</b>	<b>54</b>	<b>25</b>	<b>7</b>	<b>(13.0)</b>

Remarks:

NA Not applicable

(1) The age of wife has been used in calculating the age of patient.

(2) (i) Treatment cycles refers to the process in which a reproductive technology (RT) procedure is carried out, where a woman has undergone ovarian stimulation or monitoring with the intent of having RT procedure, or frozen embryos have been thawed with the intent of transferring them to a woman. A treatment cycle starts (a) on the day when superovulatory drugs are commenced or (b) from the date of the last menstrual period.

(ii) In this table, treatment cycles for (a) RT procedures involving donated gametes/embryos and (b) involving artificial insemination (i.e. AIH and DI) are excluded from the above table and separately shown in Table 2. To avoid double counting, treatment cycles in which one patient engages in more than one type of RT procedure in one cycle (e.g. IVF and FET) are also excluded in the above table.



- (3) **Ongoing pregnancy** means ongoing pregnancy with foetal cardiac activity during the period of the year being reported on.
- (i) n = Number of ongoing pregnancies
  - (ii) **Ongoing pregnancy rate** is expressed as number of ongoing pregnancies per 100 treatment cycles started /commenced or per 100 cycles reaching the stage of attempted oocyte retrieval or embryo transfer.  
i.e. Ongoing pregnancy rate = number of ongoing pregnancies [n]/Number of treatment cycles x 100%
- (4) Licensed centres are required to report the details concerning outcome of pregnancy within 12 months after treatment. Information on live birth for treatment cycles carried out in the later part of 2023 is not yet available.

**Source (for licensed centres)**

DC Form 1

**Table 6 - Infertility Diagnosis of Patients in 2023***(Based on the information on Data Collection Forms received in the calendar year)*

<b>A) Infertility Diagnosis by Age of Wives Receiving RT Procedures (other than DI and AIH)</b>								
Diagnosis	Age Group (Number of Patients)							
	25 or below	26-30	31-35	36-40	41-45	46-50	51 or above	All
Male factor	2	56	422	560	90	4	0	1134
Tubal problem	0	8	42	48	11	0	0	109
Endometriosis	0	3	66	75	9	0	0	153
Immunologic problem	0	0	1	8	2	1	0	12
Tubo-peritoneal problem	1	10	74	104	13	0	0	202
Ovulatory problem	1	10	70	78	11	0	0	170
Unexplained	0	10	178	348	85	2	0	623
Other causes <sup>3</sup>	3	23	191	336	193	26	2	774
Multiple causes - female & male factors	0	50	438	876	381	27	1	1773
Multiple causes - female factors only	0	14	80	142	51	7	0	294
<b>Total</b>	<b>7</b>	<b>184</b>	<b>1562</b>	<b>2575</b>	<b>846</b>	<b>67</b>	<b>3</b>	<b>5244</b>

Remark:

- (1) All treatment cycles for RT procedures involving donated gametes/embryos are excluded.

<b>B) Infertility Diagnosis by Age of Wives Receiving AIH</b>								
Diagnosis	Age Group (Number of Patients)							
	25 or below	26-30	31-35	36-40	41-45	46-50	51 or above	All
Male factor	1	47	277	142	22	3	0	492
Endometriosis	0	2	17	21	0	0	0	40
Ovulatory problem	0	10	61	39	1	2	0	113
Unexplained	0	26	151	93	14	1	0	285
Other causes <sup>3</sup>	0	12	73	106	35	6	0	232
Multiple causes - female & male factors	0	29	190	169	63	4	1	456
Multiple causes - female factors only	0	4	30	33	6	0	0	73
<b>Total</b>	<b>1</b>	<b>130</b>	<b>799</b>	<b>603</b>	<b>141</b>	<b>16</b>	<b>1</b>	<b>1691</b>

### C) Reasons for Treatment by Age of Husbands - DI

Reasons	Age Group (Number of Patients)							
	25 or below	26-30	31-35	36-40	41-45	46-50	51 or above	All
Obstructive azoospermia	0	0	0	0	0	0	0	0
Non-obstructive azoospermia	0	0	1	0	1	0	0	2
Severe deficits in semen quality in couples who do not wish to undergo intracytoplasmic sperm injection	0	0	0	0	0	0	0	0
Genetic	0	0	1	0	0	0	0	1
Infectious disease in the male partner (such as HIV)	0	0	0	0	0	0	0	0
Severe rhesus isoimmunisation	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0
Multiple causes	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>

Remarks:

- (1) Age of wife is used in calculating the age of patient in Infertility Diagnosis by Age of Patients Receiving RT Procedures (other than DI and AIH) and receiving AIH procedures while the age of husband is used in calculating the age of patient in Reasons for Treatment by Age of Patients - DI.
- (2) One patient may undergo more than one type of RT procedure during the calendar year (e.g. both IVF and AIH).
- (3) "Other causes" of infertility diagnosis reported by licensed centres included advanced maternal age, reduced ovarian reserve, coital problem, polycystic ovary syndrome, etc.

**Source (for licensed centres)**

DC Form 1, 7 and 3 respectively

**Table 7 - Current Research Projects ending December 2023**

Name of Licensed Centre	Name of Project	Project Duration (in months)
Assisted Reproductive Technology Unit (IVFHK), Prince of Wales Hospital / The Chinese University of Hong Kong	A case-series study to establish preimplantation genetic testing (PGT) and its clinical application	36
Department of Obstetrics & Gynaecology, HKU	Derivation of pre-Good Manufacturing Practice (pre-GMP) - quality Human Expanded Potential Stem Cells (EPSCs) from human preimplantation embryos	36
Department of Obstetrics & Gynaecology, HKU	The use of in vitro cultured pre-implantation and post-implantation human embryo for studying the developmental potential of human blastoids	36

Remark:

- (1) The full list of all research projects approved by the Council on Human Reproductive Technology ("the Council") could be accessed at the Council's website  
[https://www.chrt.org.hk/english/embryo/embryo\\_app.html](https://www.chrt.org.hk/english/embryo/embryo_app.html)