Reproductive Medicine Act monitoring

Key results 2019

Bern, 26 May 2021

Gerberngasse 27 • CH-3011 Bern • Tel. 031 312 65 75 • info@buerovatter.ch • www.buerovatter.ch

1 Introduction: Reproductive Medicine Act monitoring

The Reproductive Medicine Act (RMA) specifies the conditions under which, in Switzerland, techniques of medically assisted reproduction may be used in humans. On 1 September 2017, a partial revision of the RMA came into force, involving in particular the legalisation of preimplantation diagnosis.

Also included in the revised Act are provisions concerning evaluation (Art. 14*a* RMA). Whether the Act fulfils its purpose is to be determined by a review of its effectiveness.[1] To provide a basis for the evaluation of the legislation, the Federal Office of Public Health (FOPH) is also conducting a monitoring programme. This programme systematically collects data on reproductive medicine in Switzerland, thus creating transparency. Büro Vatter (policy research and consultancy) was requested to carry out data collection and processing for this monitoring. The most important results are published online by the FOPH.

Thematically, this report is structured in accordance with the FOPH web page. No figures or tables are included; instead, for each section, reference is made to the analyses and explanations provided by the FOPH on the web page "Reproductive Medicine: facts & figures".[2]

[1] https://www.bag.admin.ch/bag/de/home/medizin-und-forschung/fortpflanzungsmedizin/wirksamkeitspruefung-fmedg.html (accessed 25 May 2021)

[2] https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin.html (accessed 25 May 2021)

2 Medical practice in the area of reproductive medicine

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung.html

2.1 Assisted reproductive techniques

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/verfahren-der-fortpflanzungsmedizin.html

Couples starting IVF treatment: In 2019, 2,872 couples started in vitro fertilisation (IVF) treatment – a slight decrease compared to 2017 (2,930 couples) and 2018 (2,987). In previous years, demand appears to have been higher: in every year from 2008 to 2016, between roughly 3,500 and 4,000 couples started IVF treatment. Since 2017, however, whether a couple is actually undergoing IVF treatment for the first time is checked electronically against existing records in the FIVNAT Registry. Multiple counting, as occurred in previous years, is thus avoided.

Reason for IVF treatment: In almost all cases, the reason for starting IVF treatment was infertility. In 2019, only 26 couples started IVF treatment to avoid the risk of transmitting a serious genetic disease – a larger number than in 2018 (15 couples).

IVF treatment overall: The total number of couples undergoing IVF treatment in a given year has also not changed significantly since 2017. In 2019, it was 5,993 couples. As in previous years, around 11,000 treatment cycles were conducted (2019: 11,163). The number of couples from whom IVF embryos were preserved in 2019 was 2,605 – also roughly the same as in the previous year (2,659). Before 1 September 2017, preservation of embryos was only permitted in exceptional cases. In the revised legislation, preservation of embryos was legalised and made subject to the same requirements as preservation of impregnated ova (Art. 16 para. 1 RMA).

Preimplantation diagnosis (permissible since 1 September 2017): Here, a distinction is to be made between testing for specific genetic diseases (preimplantation genetic diagnosis, PGD) and screening for chromosome abnormalities (preimplantation genetic screening, PGS). As in the previous years, these diagnostic procedures were only performed for a small proportion of the couples undergoing IVF treatment, although the number has risen. PGD was performed for 14 couples in 2018 and for 23 in 2019. In the case of PGS, the number increased from 183 to 306 couples. In addition, both PGD and PGS were performed for 21 couples in 2019 (compared to 8 in 2018). Preimplantation diagnostic techniques were thus used for 5.8% of all couples undergoing IVF treatment in 2019.

2.2 Handling of embryos from in vitro fertilisation

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/umgang-mit-embryonen-nach-in-vitro-fertilisation.html

Embryos developed: For several years up to 2016, the total number of embryos developed per year was between roughly 18,000 and 19,000. Thereafter, the total rose sharply, reaching 33,945 in 2018, before falling to 32,575 in 2019. The increase after 2017 is most likely attributable, in particular, to two changes in the legislation. Firstly, up to a maximum of twelve embryos may now be developed per treatment cycle (previously three; Art. 17 para. 1 RMA). Secondly, the preservation of embryos is now no longer only permissible in exceptional cases (Art. 16 para. 1 RMA).

Embryos preserved: As a result of these changes in the legislation, the number of embryos preserved also increased dramatically: 251 embryos were preserved in 2016 and 10,766 in 2018, with a further slight increase to 11,029 in 2019.

Embryos transferred: Conversely, the same period saw a marked decrease in the number of embryos transferred – from 14,659 in 2016 to 10,520 in 2018. The decline continued in 2019, with 9,641 embryos being transferred. This trend is attributable to two developments. Firstly, after the partial revision of the RMA, fewer embryos, on average, were transferred per cycle than previously: in 2016, two or three embryos were transferred in almost two thirds (66%), and one embryo in only a third of all cases (34%); in 2019, however, only one embryo was transferred in 79% of all cases. Secondly, the number of transfers has declined: from 2009 to 2016, more than 8,500 transfers were recorded each year; since then, the figure has decreased, with 7,891 transfers being recorded in 2019.

Embryos destroyed: Compared to 2016, the total number of embryos destroyed has almost quadrupled: while 3,297 embryos were destroyed in 2016, the total rose to 12,884 in 2018. A slight decrease was seen in 2019, with 12,557 embryos being destroyed. As in previous years, by far the most frequent reason for destruction was failure of embryo development (11,222 embryos).

2.3 Pregnancy and birth after in vitro fertilisation

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/schwangerschaft-geburt-in-vitro-fertilisation.html

Birth rate: Of all treatment cycles started in 2019, 19% resulted in a birth. The birth rate thus continued to rise slightly, having been 17% in 2016 and 2017, and 18% in 2018.

Births after IVF with preimplantation diagnosis: In 2019, 65 IVF treatments with preimplantation diagnosis resulted in a birth (48 after PGS, 9 after PGD, and 8 after PGS and PGD). Compared to 2018, this figure thus increased once again. In total, 2,080 IVF treatments carried out in 2019 resulted in a (singleton or multiple) birth – a further increase over 2017 and 2018.

Multiple births after IVF: Since the entry into force of the revised RMA, the number of multiple births has decreased. Of the IVF treatments carried out in 2017, 295 resulted in a twin birth and 6 in a triplet birth. In 2019, only 122 sets of twins and 5 sets of triplets were born following IVF treatment. Over the same period, the proportion of singleton births increased from 84% to 94%. For comparison, of all births recorded in Switzerland in 2019, just under 2% were multiple births.

Premature births: 335 births after IVF in 2019 occurred before the end of the 37th week. The proportion of premature births thus decreased from 21% of all births after IVF in 2017 to 16% in 2019.

2.4 Preservation of reproductive cells

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/konservierung-eigenvorsorge-und-spende.html

Oocytes and ovarian tissue preserved: Individuals may have their reproductive cells preserved as a precautionary measure. The maximum preservation period is generally 10 years (Art. 15 RMA). As of 31 December 2019, oocytes or ovarian tissue was preserved from a total of 1,390 women. Preservation was undertaken for medical reasons in 675 cases and for other reasons in 715 cases.

Sperm and testicular tissue preserved: As of 31 December 2019, sperm or testicular tissue was preserved from 4,972 men. Preservation was undertaken for medical reasons in 3,910 cases and for other reasons in 1,062 cases.

3 Actors in reproductive medicine

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/akteure-der-fortpflanzungsmedizin.html

Physicians with a licence: The number of physicians with a licence for reproductive medicine in accordance with Art. 8 RMA has increased – from 79 in 2017 to 89 in 2019 and 91 in 2020; of this total, 52 are authorised to carry out preimplantation diagnostic procedures. In 2017 – the year in which preimplantation diagnosis was legalised – 15 were authorised to conduct procedures of this kind. The increase is associated with the above-mentioned rise in the number of IVF treatments where these procedures have actually been performed.

Laboratories conducting genetic testing on embryos: In 2019, seven genetic laboratories in Switzerland were authorised to conduct genetic testing on embryos; this number has remained unchanged since 2017. Only five of these laboratories actually carried out tests of this kind in 2019.

4 Sperm donor-conceived children

https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/kinder-aus-samenspende.html

Reported births registered: Since 2001, physicians performing IVF have been required to report births of sperm donor-conceived children to the Federal Office for Civil Registration (EAZW), so that the children can subsequently obtain information about the donor. In the EAZW donor data registry, a total of 3,661 births were registered from 2001 to the end of 2018; these may be multiple births. Since then, there has been a further marked increase in the number of births registered: at the end of 2019, 4,126 births were registered – i.e. 465 were newly registered in 2019. By the end of 2020, another 108 had been registered, bringing the total number of births included in the EAZW registry on 31 December 2020 to 4,234.

Registered sperm donors: In the period from 2001 to the end of 2019, 776 sperm donors were registered following births reported to the EAZW. A year later, the total had increased by 1 to 777.

Children's requests for information: In 2020, for the first time, one child conceived using donated sperm cells requested information from the EAZW on the donor, in accordance with Art. 27 para. 1 RMA. The donor concerned agreed to make contact.

5 Sources used for RMA monitoring

As far as possible, monitoring relies on existing data sources. Only a small proportion of the information is specially collected for the monitoring programme, using direct surveys of physicians licensed to conduct activities in accordance with Art. 8 para. 1 RMA. Monitoring is based on the following data sources.

- *FIVNAT:* Fécondation In Vitro National (FIVNAT) is a committee of the Swiss Society for Reproductive Medicine (SGRM) which collects in vitro fertilisation (IVF) data. Some of this data has also been published for many years by the Swiss Federal Statistical Office; for this reason, some IVF statistics go back as far as 2007.
- *Physicians with a licence:* These are physicians who use assisted reproductive techniques, preserve reproductive cells or arrange the supply of sperm cells and therefore require a licence under Article 8 RMA. For monitoring purposes, they are directly surveyed, inter alia, on insemination using preserved sperm cells, on the precautionary preservation of reproductive material by individuals, and on donated sperm cells stored by them. Information is thus collected on activities requiring a licence which are not directly connected with IVF treatment.
- *Cantonal licensing authorities:* Responsibility for enforcement of the RMA lies with the cantonal licensing authorities, who are surveyed for monitoring purposes. They provide, inter alia, information on licence holders.
- *EAZW:* The Federal Office for Civil Registration (EAZW) manages data in accordance with the RMA on sperm donors and children conceived through sperm donation. The first data available for monitoring relates to 2018.
- *SFSO:* The SFSO criminal justice statistics cover offences against the criminal provisions of the RMA. Up to 2019, however, no convictions based on these provisions are recorded.
- *FOPH:* The FOPH grants licences to laboratories which perform genetic testing on reproductive cells or embryos. These laboratories require authorisation under Article 8 of the Federal Act on Human Genetic Testing (HGTA). For monitoring, data on these laboratories is obtained from the FOPH.