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# Assisted reproductive techniques in Latin America: the Latin American Registry, 2013


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Fernando Zegers-Hochschild is the founder and chairman of the Latin American Registry of Assisted Reproduction and co-founder and Vice-Chair of the International Committee for Monitoring Assisted Reproduction. For 30 years he has served on various World Health Organization task forces, and acted as expert to the United Nations and the Inter American Court of Human Rights in issues related with human reproduction and reproductive rights. His main research interests include monitoring trends in the safety, efficacy and influence of cultural diversity on the practice of assisted reproduction, as well as bioethical challenges resulting from its use. He has authored over 120 scientific articles and book chapters.

**Abstract** Multinational data on assisted reproduction techniques undertaken in 2013 were collected from 158 institutions in 15 Latin American countries. Individualized cycle-based data included 57,456 initiated cycles. Treatments included autologous IVF and intracytoplasmic sperm injection (ICSI), frozen embryo transfers, oocyte donations. In autologous reproduction, 29.22% of women were younger than 35 years, 40.1% were 35–39 years and 30.6% were 40 years or older. Overall delivery rate per oocyte retrieval was 20.6% for ICSI and 25.4% for IVF. Multiple births included 20.7% for twins and 1.1% for triplets and over. In oocyte donations, twins reached 30% and triplets 1.4%. In singletons, pre-term births were 7.5%: 36.58% in twins and 65.52% in triplets. The relative risk for prematurity was 4.9 (95% CI 4.5 to 5.3) in twins and 8.7 (95% CI 7.6 to 10.0) in triplets and above. Perinatal mortality was 29.4 per 1000 in singletons, 39.9 per 1000 in twins and 71.6 per 1000 in high order multiples. Elective single embryo transfer represented only 2% of cycles, with delivery rate of 39.1% in women aged 34 years or less. Given the effect of multiple births and prematurity, it is mandatory to reduce the number of embryos transferred in the region. 

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**KEYWORDS:** assisted reproductive technology, epidemiology, IVF/ICSI, Latin America, perinatal outcome, registry

## Introduction

The Latin American Registry of Assisted Reproduction (RLA) was established in 1990, as the first multinational and regional registry collecting data on assisted reproduction techniques. For the first 20 years, summary data were obtained electronically via a web page from every participating institution, belonging to 12 countries in the region. Since 2010, new software has been developed and implemented, which allows for the collection of cycle-based data from every treatment cycle. Data collection is therefore recorded individually, starting with ovarian stimulation until birth or spontaneous abortion.

Today, individualized data are obtained from assisted reproduction technique treatments carried out in 158 institutions in 15 countries, covering more than 80% of assisted reproduction technique cycles carried out in the region. This report corresponds to the 25th edition of RLA. Previous reports, from 1990 to 1998, are available as printed copies; and from 1999 to 2009 as PDF files, which can be downloaded from the web page of the Latin American Network of Assisted Reproduction (REDLARA) at: <http://www.redlara.com>. Today, reports are published simultaneously in *RBM Online*, and in the *JBRA Assisted Reproduction*, the official journal of REDLARA.

The main objectives of RLA are to disseminate information on assisted reproduction technique procedures carried out in Latin America; monitor outcomes, as well as trends in safety and efficacy among centres and countries; empower infertile couples in their capacity to evaluate risks and benefits when requesting assisted reproduction technique treatments; and develop a robust database for epidemiological studies.

In this report, we report information on availability, effectiveness and perinatal outcomes of assisted reproduction technique treatment started between 1 January 2013 and 31 December 2013, and babies born up to September 2014. It is also our aim to describe regional trends on how assisted reproduction techniques are practised in the region, including the number of embryos transferred, multiple births and its effect on pre-term births and perinatal mortality.

## Material and methods

Data on assisted reproduction techniques were collected from 158 centres in 15 countries (Table S1), covering IVF, intracytoplasmic sperm injection (ICSI), oocyte donation (both fresh and frozen), frozen embryo transfer, and preimplantation genetic diagnosis (PGD) and screening, registered together as PGD. In addition to assisted reproduction techniques, data on intrauterine insemination (IUI) using husband and donor semen were also included. This report includes treatments started between 1 January 2013 and 31 December 2013, and babies born up to September 2014. As part of the accreditation programme, all participating institutions agree to have their data registered and published by the Latin American Registry of Assisted Reproduction. Given it is a multinational registry, no other consent form was requested.

As was the case in the previous 2 years, data were collected using an individualized cycle-based software. The

method of collecting and reporting data is also similar to that used in the previous 2 years, making all tables comparable (Zegers-Hochschild et al., 2015).

Each centre entered their data directly onto an online RLA web-based system. Built-in algorithms for internal consistency (any error or discrepancy not identified by the software) was discussed and clarified by RLA's central office. Given that the RLA is a voluntary multinational registry, centres are not obliged to upload each case immediately as the cycle is initiated. Therefore, some cases are sent to the RLA upon recruitment whereas others are included retrospectively.

As the new cycle-based registry has only been available for 2 years, the calculation of cumulative delivery rates could not be made directly. Therefore, we made estimates by adding deliveries derived from fresh and frozen transfers in every age group.

When appropriate, the chi-squared test was used to analyse independence of categorical variables.  $P < 0.05$  was considered statistically significant. Relative risks are presented with the corresponding 95% confidence interval. All terminologies used in this registry correspond to the glossary published in 2009 by the International Committee for Monitoring Assisted Reproductive Technologies and the World Health Organization (Zegers-Hochschild et al., 2009). Cases of severe ovarian hyperstimulation syndrome, requiring hospitalization or medical interventions, were registered.

## Results

### Participating centres

One hundred and fifty-eight centres in 15 countries reported assisted reproduction technique procedures carried out during 2013. They included 36,494 initiated autologous fresh IVF-ICSI cycles; 10,912 frozen embryo transfers; 8434 oocyte donation (heterologous) cycles, of which, 5927 were fresh transfers and 2507 frozen embryo transfers; and 1616 initiated cycles for fertility preservation.

Access to assisted reproduction technique procedures, defined as the sum of IVF-ICSI initiated cycles, frozen embryo transfer and oocyte donation cycles, per million women aged 15-45 years, reached a mean of 425 with large variation between countries (Table 1).

### Size of participating institutions

Excluding fertility preservation, a total of 55,840 initiated cycles was reported. The number of initiated cycles by institution ranged from 23 to 2765, where 21% of reporting centres carried out 100 cycles or fewer; 35% carried out between 100 and 250 cycles; 21% carried out between 251 and 500 cycles; 17% carried out between 500 and 1000 cycles; and 6% carried out 1000 or more cycles.

### Assisted reproduction technique procedure and access

As in previous years, most initiated cycles were reported by Brazil, representing 44% of all cycles, followed by Argentina

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