
ICMART PRELIMINARY WORLD REPORT 2016

ESHRE
Copenhagen, Denmark
July 7, 2020

ICMART is a non-State actor in
official relations with the World
Health Organization.



David Adamson: USA/Canada

Fernando Zegers: Chile

Jacques de Mouzon: France

Osamu Ishihara: Japan

Silke Dyer: South Africa

Ragaa Mansour: Egypt

Manish Banker: India

Georgina Chambers: Australia

Markus Kupka: Germany

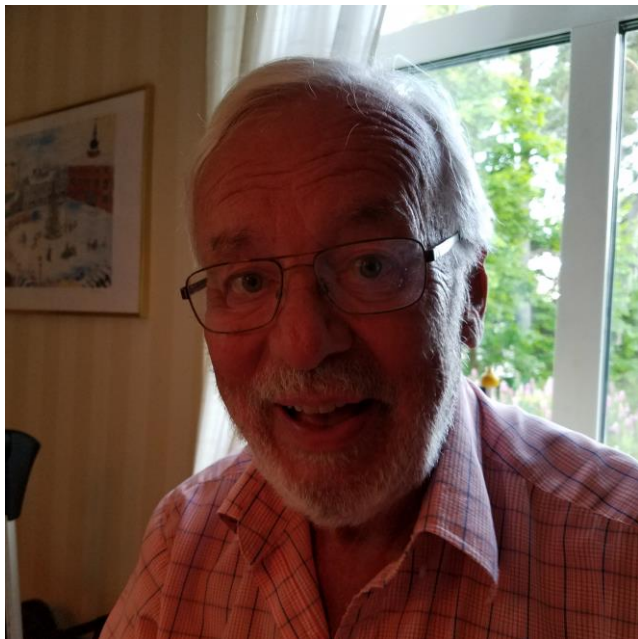
Disclosure

- The authors declare that they have no commercial or financial interest pertaining to the subject of this presentation or its content.



In Memorium

Karl Nygren, MD, PhD



First Chair of EIM
ESHRE Executive Committee
Honorary ESHRE Member

Chair of ICMART
2003 to 2011

Renowned Colleague

Dear Friend

<https://www.eshre.eu/Press-Room/ESHRE-News>



Definition of Infertility 2017



A **disease** characterized by the failure to establish a clinical pregnancy after 12 months of regular, unprotected sexual intercourse or due to an **impairment** of a **person's capacity to reproduce** either as an **individual** or with his/her **partner**. Fertility interventions may be initiated in less than one year based on medical, sexual and reproductive history, age, physical findings and diagnostic testing. Infertility is a **disease**, which **generates disability** as an **impairment of function**.



ICMART International Glossary



ASRM PAGES



The International Glossary on Infertility and Fertility Care, 2017

Fernando Zegers-Hochschild,^a G. David Adamson,^b Silke Dyer,^c Catherine Racowsky,^d Jacques de Mouzon,^e Rebecca Sokol,^f Laura Rienzi,^g Arne Sunde,^h Lone Schmidt,ⁱ Ian D. Cooke,^j Joe Leigh Simpson,^k and Sheryl van der Poel^l

Human Reproduction, pp. 1–16, 2017
doi:10.1093/humrep/dex234

human
reproduction

ESHRE PAGES

The International Glossary on Infertility and Fertility Care, 2017^{†‡§}

Fernando Zegers-Hochschild^{1,*}, G. David Adamson², Silke Dyer³, Catherine Racowsky⁴, Jacques de Mouzon⁵, Rebecca Sokol⁶, Laura Rienzi⁷, Arne Sunde⁸, Lone Schmidt⁹, Ian D. Cooke¹⁰, Joe Leigh Simpson¹¹, and Sheryl van der Poel¹²

[†]Led by The International Committee for Monitoring Assisted Reproductive Technologies (**ICMART**) in Partnership with the American Society for Reproductive Medicine (**ASRM**), European Society of Human Reproduction and Embryology (**ESHRE**), International Federation of Fertility Societies, (**IFFS**), March of Dimes (**MOD**), African Fertility Society (**AFS**), Groupe Inter-africain d'Etude de Recherche et d'Application sur la Fertilité (**GIERAF**), Asian Pacific Initiative on Reproduction (**ASPIRE**), Middle East Fertility Society (**MEFS**), Red Latinoamericana de Reproducción Asistida (**REDLARA**), International Federation of Gynecology and Obstetrics (**FIGO**).



ICMART Access and ART Utilization



RBMO

VOLUME 00 ISSUE 0 2020

ART utilization: an indicator of access to infertility care

Silke Dyer^{1,*}, Georgina M Chambers², G David Adamson³, Manish Banker⁴,
Jacques De Mouzon⁵, Osamu Ishihara⁶, Markus Kupka⁷, Ragaa Mansour⁸,
Fernando Zegers-Hochschild⁹ representing the International Committee for Monitoring
Assisted Reproductive Technology



Worldwide Trends In Gender Equality



2002



Participation and Coverage



- 25 countries in 1991 → 78 in 2016
 - Almost all of Europe, the Americas, Australia-NZ
 - Missing countries : Middle-East, Asia
 - 14 African countries (Benin, Burkina Faso, Cameroon, Egypt, Ethiopia, Ghana, Ivory Coast, Mali, Mauritius, Morocco, Nigeria, South Africa, Togo, Tunisia)
- 2,887 clinics (+196)
 - 81 % of all clinics in reporting countries
- 40 countries >90% coverage (+9); 32 (full +8)
- But incomplete information

63-70% of World ART activity



ESHRE and EIM



Latin America



- REDLARA (Latin American Network of ART) data collection from 15 countries and 200 centers
- Website and registry access: www.redlara.com

RBMO

RBMO VOLUME 41 ISSUE 1 2020

**Assisted reproductive technologies in Latin America:
the Latin American Registry, 2017**



Africa



- ANARA (African Network and Registry for ART) involved in 2016 data collection from 14 countries
- Website and registry access: www.anara-africa.com

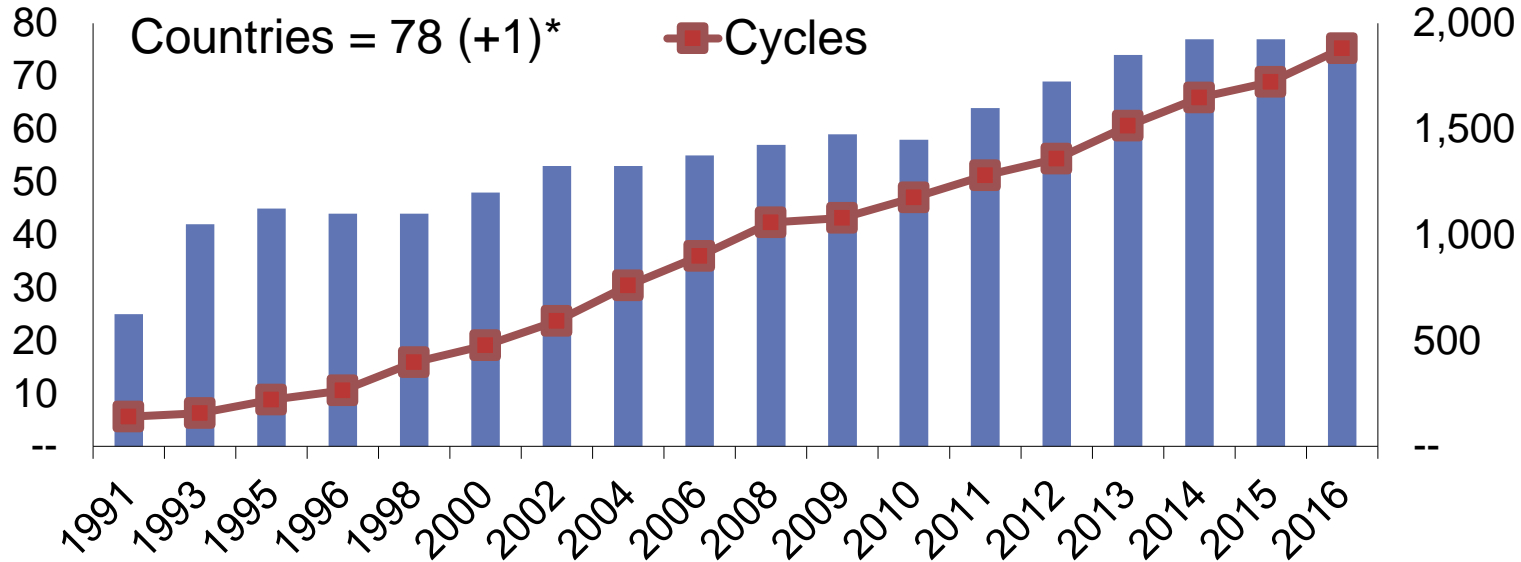


World Report Coverage History



Countries

Thousand cycles



2016: 1,882,018 cycles (+9.3%)



10 Main Contributors in 2016



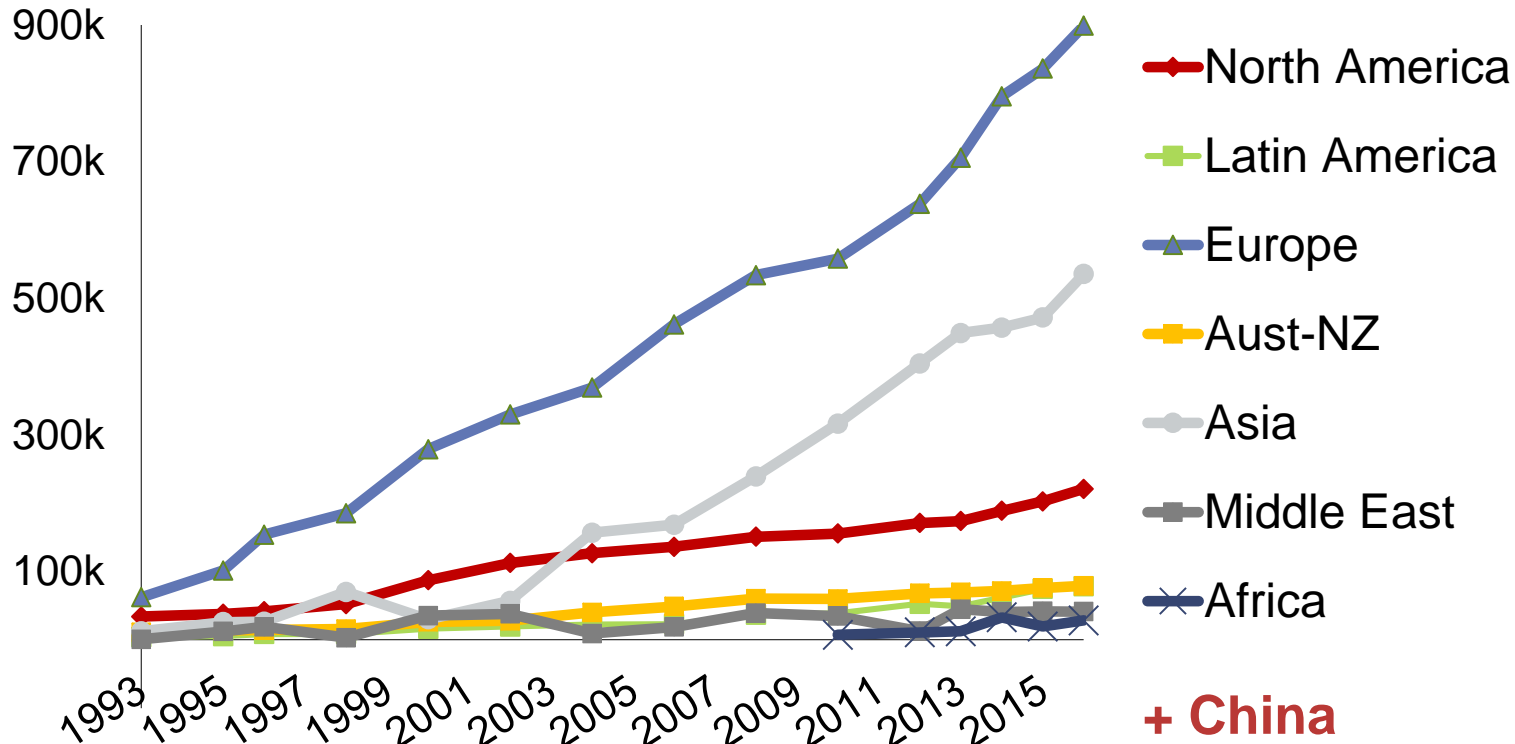
Country	Cycles
Japan	447,763
US	190,149
Spain	131,219
Russia	117,276
France	103,987
Germany	99,226
Italy	73,442
Australia	72,497
UK	66,144
Israel	41,143

71.3% of
1,882,018
cycles

**PLUS CHINA:
SEPARATE REPORT
LATER IN PRESENTATION**



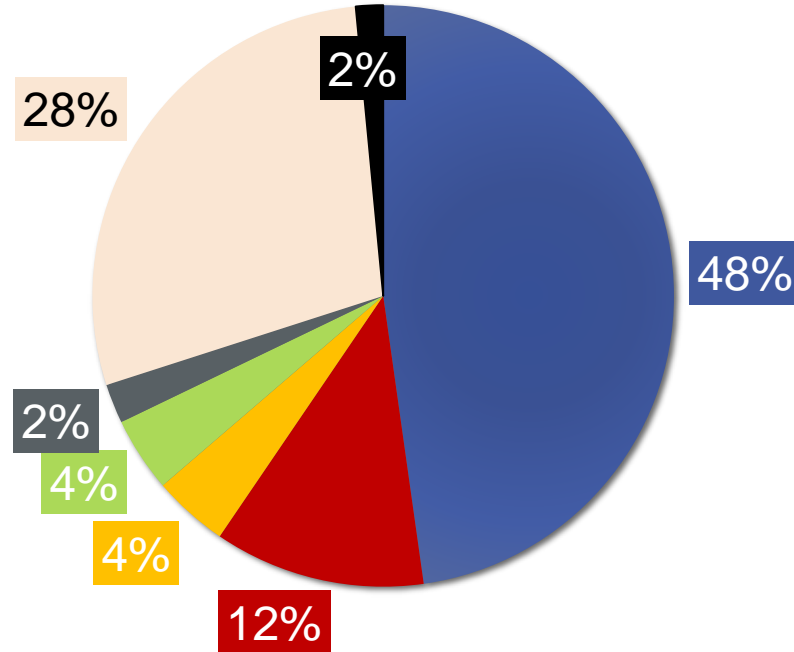
Growth of ART Cycles by Region



Regional Contribution 2016



N=1,882,018 Reported Cycles



- Europe
- North America
- Australia
- Latin America
- Middle East
- Asia
- Africa



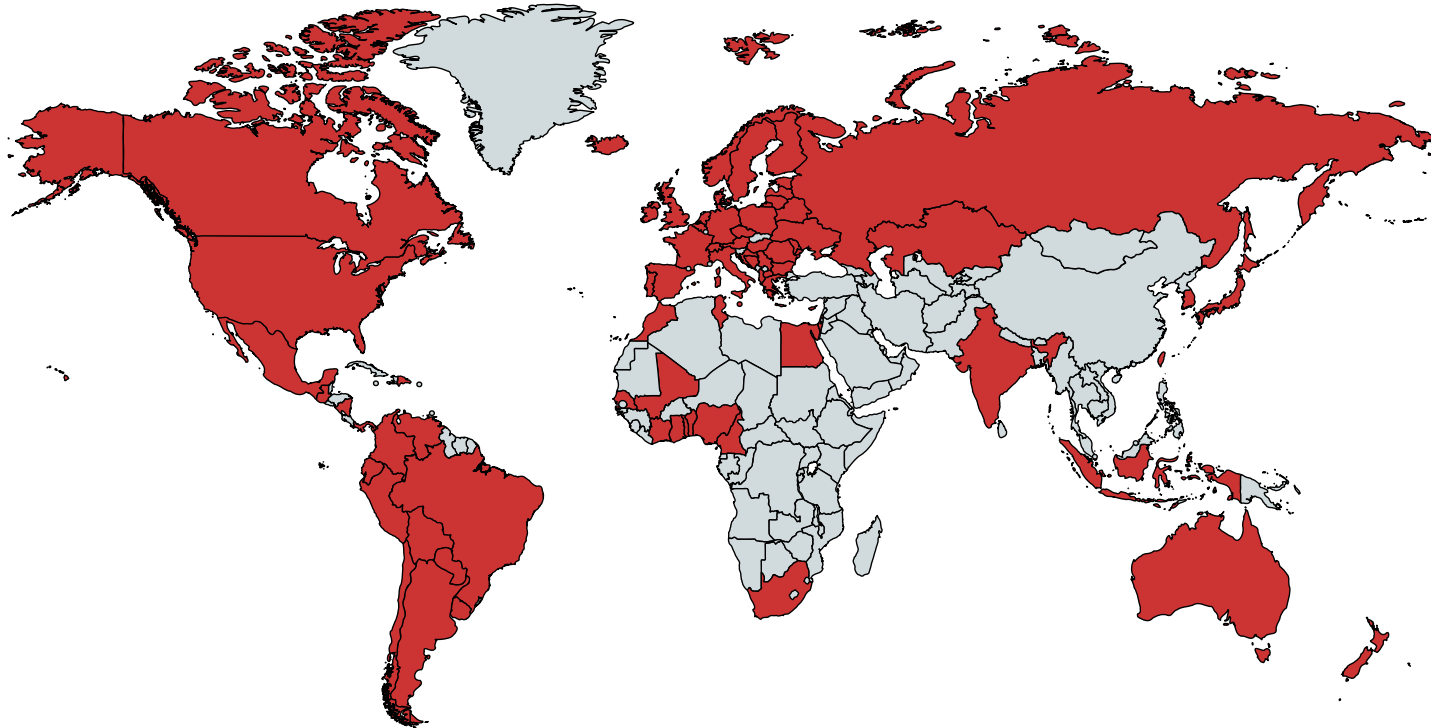
Global Results 2016



- 1,882,018 initiated cycles
- 328,885 deliveries
- Compared to 2015
 - + 159,606 cycles (+9.3%)
 - -7,971 deliveries (-2.4%)
- Recent trend: Freeze-all
 - 149,267 cycles (-4.2%)
 - 104,575 in Japan (+11%)
- Not included in calculations of PR or DR/cycle or aspiration
- Included in cumulative PR
- Probably underreported



ICMART Contributors 2016



Thank You to our Sponsoring Organizations



ICMART REVIEW HR PUBLICATION ART IN CHINA 2016



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China First Comprehensive Internationally Published Report



Human Reproduction, pp. 1–7, 2020
doi:10.1093/humrep/dez245

human
reproduction

ORIGINAL ARTICLE *Reproductive epidemiology*

Assisted reproductive technology service availability, efficacy and safety in mainland China: 2016

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Brief Overview of ART in China



- 1988 First baby Peking University Third Hospital
- 2007 Ministry of Health passed responsibility of qualifying ART clinics to provinces
- 2015 ART available in all provinces in mainland China
- 2016 Two child policy
- Very little financial coverage for ART
- National ART management for technical supervision of service availability, efficacy and safety
- Regular national surveys
- Data support formulation and revision of national policies



Study Design, Size and Duration



- National ART Service Provision Survey
 - ❖ Mainland China
 - ❖ Performed in 2018 to collect 2016 data
 - ART treatment January 1, 2016 through December 31, 2016
 - Retrospective, cross-sectional with follow-up for outcomes
 - Nationwide survey of 31 provinces
 - 445 clinics
- Terminology International Glossary of Infertility and Fertility Care (Zegers et al) except ART includes AIH and AID
- ART service availability, efficacy and safety
 - ❖ Treatment numbers
 - ❖ Outcomes
 - ❖ Complications
- Data collected, analyzed and published



Number of Regions and Clinics



Table I Regional distribution of ART clinics and services provided.

Region	No. of approved clinics	No. of reported clinics	AI treatment cycles	Cycles of IVF + ICSI + FET + PGD
Eastern	246	242	108594	525034
Central	126	125	33842	207932
Western	79	78	18940	173874
Total	451	445	161376	906840

IVF Clinics	323
IUI (AIH & AID) Clinics	443
Institutional data only	6
% of licensed clinics	98.7%
% of cycles reported	100.0%



10 Main Contributors in 2016



Country	Cycles
China	906,840
Japan	447,763
US	190,149
Spain	131,219
Russia	117,276
France	103,987
Germany	99,226
Italy	73,442
Australia	72,497
UK	66,144
Israel	41,143

71.4% of
1,882,018
cycles

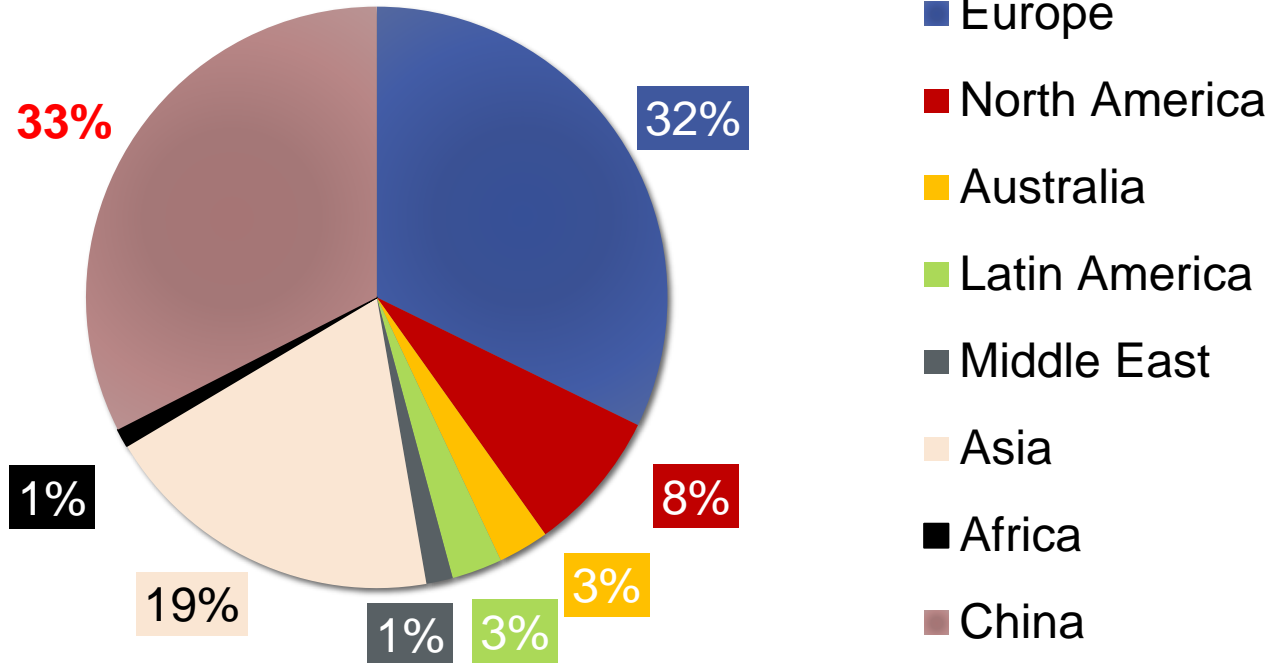
79.2% of
2,788,858
cycles



Regional Contribution 2016 plus China



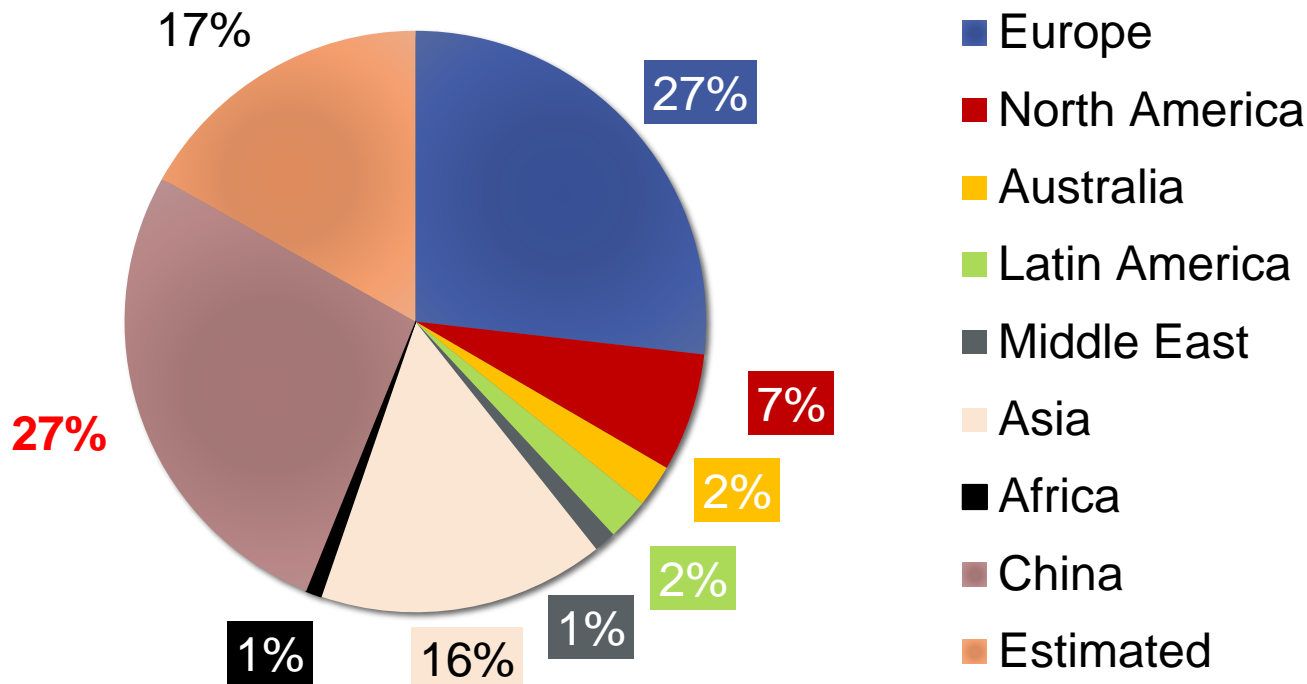
N=1,882,018 Reported Cycles + China 906,840 Cycles



Regional Contribution 2016 + China + Estimated



N=1,882,018 Reported + China 906,840 + Estimated 564,605 =
3,353,463 Cycles



China First National Report 2016

323 IVF Clinics performed 906,840 Cycles



	Number	CPR/Ret	DR/Ret	Twin Del/Tot Del
Retrievals	530,718			
• IVF	375,770	23.2%	18.7%	27.9%
• ICSI	154,948	20.5%	16.7%	27.2%
FET	367,146	48.2%	37.6%	24.2%
PGT	8,976	38.1%	29.7%	4.2%
Cycles Per Million Inhabitants	657			
Total Live Infants from IVF, ICSI, FET, PGT	289,566			
IVF, ICSI, FET, PGT Infants as % All Infants	1.57%			



China Outcomes Compared with Other Global



	China DR/Ret	Other Global DR/Ret
ART		
IVF	18.7%	19.2
ICSI	16.7%	(19.2)
FET (% per thaw)	37.6%	24.8
PGT (% per Dx cycle)	29.7%	36.7
Twin Rate Fresh ET	27.7	3.1-28
	China	Other Global
Cycles per Million Inhabitants	657	430
IVF Infants % of All Infants	1.57%	0.39%



China First National Report 2016

443 Clinics Performing IUI with Husband and Donor



	Number	CPR/Ret	DR/Ret	Twin Del/Tot Del
Cycles				
• Husband	126,872	13.3%	10.5%	6.0%
• Donor	34,504	24.3%	21.1%	3.6%
Total Cycles	161,376	# Cycles/Million Inhabitants 124		
Total IUI Infants	21,473	IUI Infants as % of All Infants 0.12%		



Outcomes Range by Technique



Table IV Outcomes of ART by technique in 2016.

Techniques, n	PR (%)	DR (%)	TDR (%)	Infants
AIH 126 872	13.3 (8.6–18.3)	10.5 (6.7–14.3)	6.0 (0–12.5)	13 955
AID 34 504	24.3 (0–36.6)	21.1 (0–32.1)	3.6 (0–13.9)	7 518
IVF 375 770	23.2 (5.9–40)	18.7 (4.7–34)	27.9 (21.9–33.8)	87 617
ICSI 154 948	20.5 (0–39)	16.7 (0–32.6)	27.2 (0–35.5)	32 491
FET 367 146	48.2 (26.8–59.8)	37.6 (22.8–47.4)	24.2 (0–30.5)	166 962
PGD 8976	38.1 (17.3–86.2)	29.7 (15.9–69.0)	4.2 (0–29.4)	2766

IVF Cycles/million inhabitants

Change from 2013 to 2016

360 to 657

Range among provinces

45-3676

% increase equivalent among regions



China Regional Differences



	Eastern	Central	Western
Number of Clinics	246	126	79
Cycles/million inhabitants 2013	496	269	262
Cycles/million inhabitants 2016	916	481	465
	Core Cities	Noncore Cities	
# clinics performing IVF, ICSI, FET, PGT	182 (56.3%)	141 (43.7%)	
% cycles of IVF, ICSI, FET, PGT	76.2%	23.8%	PGT in Core cities 98.4%
# clinics performing AI	213	230	AID in Core cities 97.9%



Complications



■ Birth Defects

- ❖ IVF, ICSI, FET, PGT
- ❖ AI
- ❖ China national rate
- ❖ Almost certainly under-reported

89/10,000 Births
67/10,000 Births
145/10,000 Births

■ IVF Cycle Complications

- ❖ Moderate to Severe OHSS
- ❖ Bleeding requiring surgery

11.5/1000 Retrievals
0.1/1000 Retrievals



Limitations



- Report based on summary data
- Not reported
 - ❖ Age stratification
 - ❖ Cycle starts
 - ❖ Number of embryos transferred
 - ❖ SET rate
 - ❖ Triplet rate
- Low rate of birth defects
 - ❖ ? Confounded by variations in birth follow-up methods, statistical timing and record taking



Conclusions



- First, comprehensive and excellent report
- ART in mainland China
 - ❖ Availability improved significantly in recent years
 - ❖ Most cycles by far of any country in the world
 - ❖ Wide variability among provinces
- ART in China Compared with the World
 - ❖ 1/3 of reported global cycles performed in China
 - ❖ Outcomes close to Western countries; higher twin rate
 - ❖ Variability of availability, efficacy and safety similar to many other countries and regions
 - ❖ ICMART World Reports will be significantly more comprehensive with the inclusion of China data



Contributors to Global ART Data 2016



Congratulations and Thank You
to China for this significant contribution to
the Global ART Community Registry!



THANK YOU



David Adamson: USA/Canada

Fernando Zegers: Chile

Jacques de Mouzon: France

Osamu Ishihara: Japan

Silke Dyer: South Africa

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