

The Effect of Economic
Access to ART on
Availability, Pregnancy
Success, and Multiple
Pregnancy

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Learning Objectives

- To attempt to illustrate ART access issues in the US
- To illustrate how access affects outcome

ART: Procedure and Costs

- Ovulation Induction – follicle stimulating hormone (FSH) to stimulate the growth and maturation of 10 or more eggs ~\$3000
- Monitor growth with Ultrasound and blood tests ~\$1500
- Outpatient surgical procedure to retrieve eggs, anesthesia, OR, staff, surgeon, supplies, recovery room ~\$3000 +
- Culture including micromanipulation of oocytes/Intracytoplasmic sperm injection, culture, embryologist, lab ~\$3000 +

ART Procedure/costs II

- Embryo transfer, surgeon, room, nurses, culture lab personnel, ~\$500 +
- Cryopreservation of non-transferred embryos, ~\$1000 +
- Overall Costs, ~\$10,000 to \$20,000/cycle
- (similar to an appendectomy)

ART: Insurance Coverage

- Variable by company, by plan, by state
- Full coverage unusual
 - May cover some of monitoring costs, ~20-30%
- Most of ART cycles in US are paid for by patients

State Mandated Coverage

- Fewer than 10 states have mandated some ART coverage
 - Mandate/Mandate Option
 - One to three cycle coverage
- Legislative Issues
 - Patient Groups versus Insurance Providers
 - Business Community
 - Threat to State Government, increased number of uninsured requiring care
 - RESOLVE survey

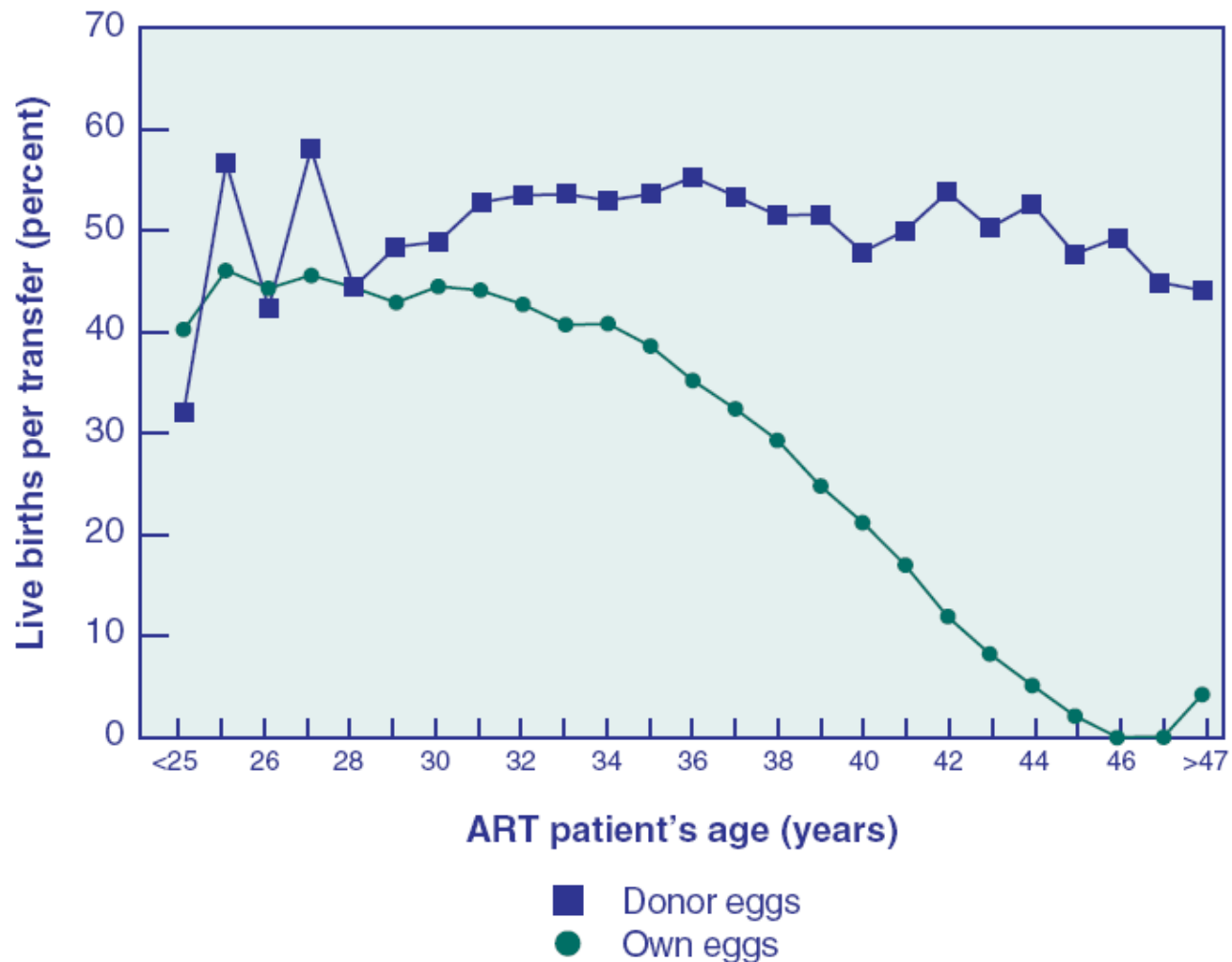
RESOLVE Survey

- RESOLVE (The National Fertility Association) composed of fertility patients
- Study of 600+ employers who provide infertility coverage
- 91% response rate
- Added costs 'insignificant'
- 75% considered investment in employees improved recruitment/retention

Access Effects on ART

- In mandated coverage States the ART per capita volume is three fold higher than States with no coverage suggesting cost is limiting the number of couples seeking ART
- Effect age of ART population
 - Mean age 35+ y/o US (versus 33y/o Europe)
 - Ability to afford procedures
 - Effect on success

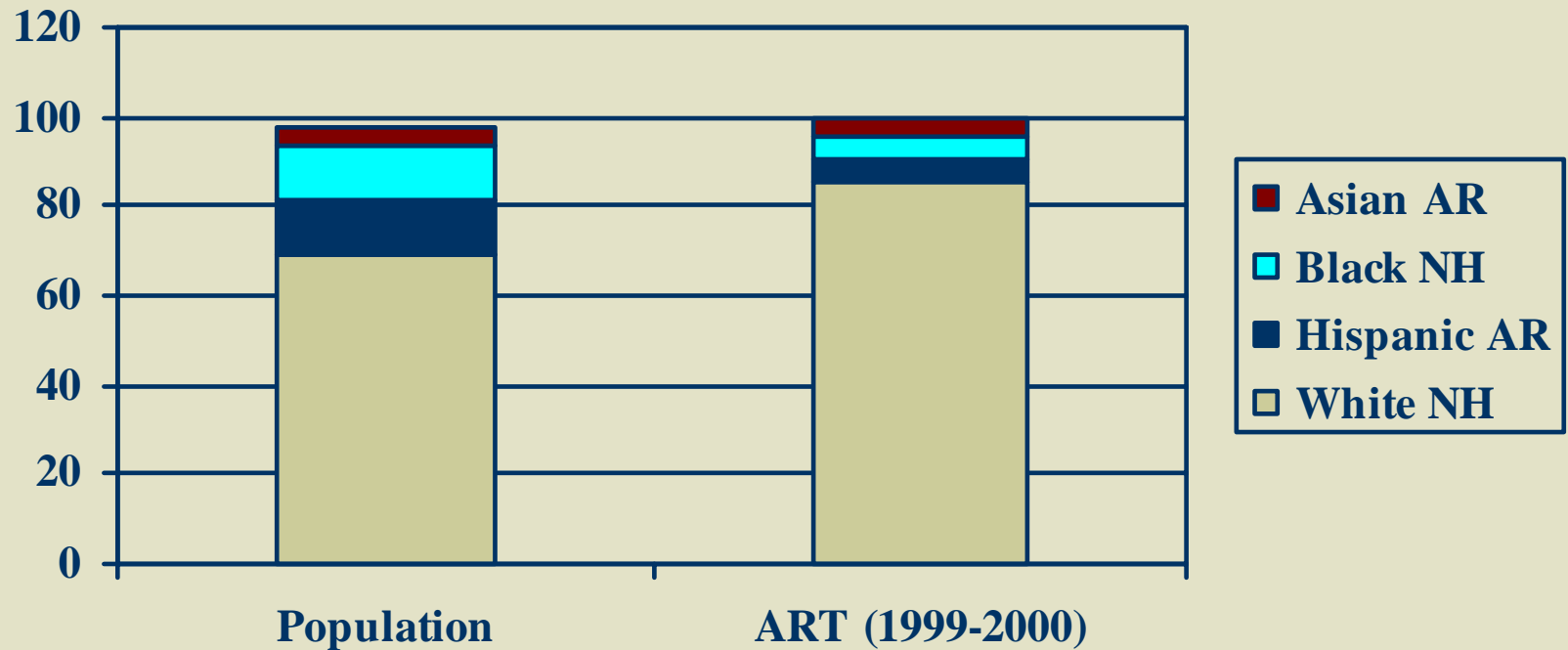
Figure 41
Live Births per Transfer for ART Cycles Using Fresh Embryos from Own and Donor Eggs, by ART Patient's Age, 2004



Access Effects on ART

- Egg Sharing – not common
 - “Haves” : “Have Nots”
 - Younger couples share eggs with usually older couples with poorer egg quality who fund majority of costs
 - Necessity versus choice?
- Gender – Women overall have less coverage
- Ethnicity

Access to ART: Ethnicity



Provided by DA Grainger

Access Effects on Outcome

- AGE
- Embryo Transfer Number
 - Fewer than 1/3 oocytes are capable of initiating a pregnancy and declines with age
 - Multiple techniques to select embryo
 - Appearance of Embryo – ‘prettier’ is better
 - Extend culture – genetically abnormal embryos are less capable of reaching the blastocyst stage on day 5 of culture
 - Pre-implantation Genetic Diagnosis
 - None capable of optimal embryo selection
 - “More embryos more pregnancies”, but also more multiple pregnancies

Access Effects on Outcome: Multiple Pregnancy

- Arbitrarily transferring one embryo in all couples substantially cuts pregnancy rates
- In selected populations of very good responders, i.e. young, lots of eggs, very good embryo quality, the reduction in pregnancy rate is not significant
- Even the cumulative pregnancy rate of one fresh ET plus one cryo ET is lower than transferring two embryos

Access Effects on Outcome: Multiple Pregnancy

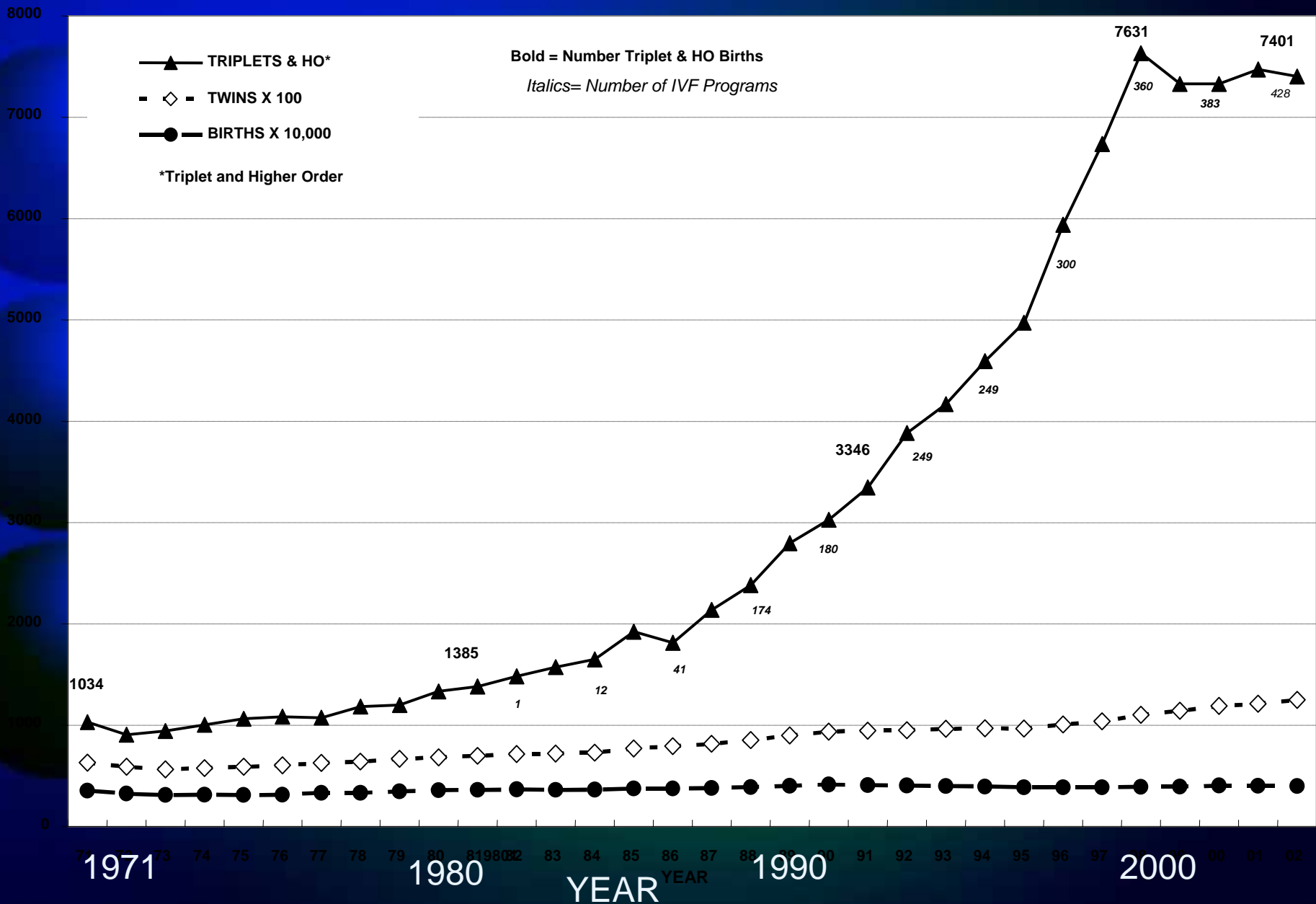
Patients 'prefer' twins (have twice the developmental problems of singletons)

COST – COST – drives patient preference

Effect of coverage of ART in Mandated States- Average number of embryos transferred is less and surveys demonstrate better acceptance of lower ET number

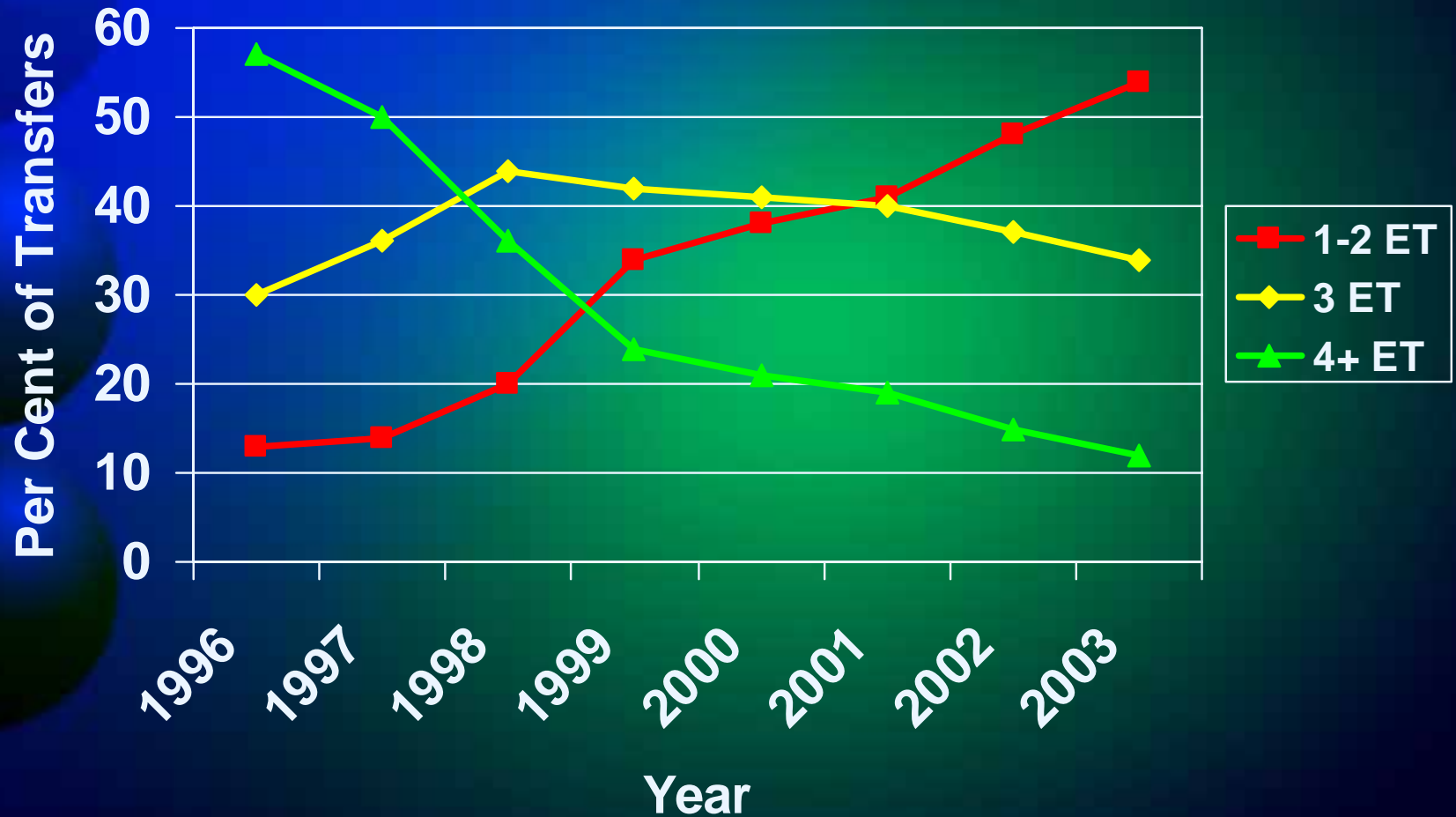
Some European countries offer 6 ART cycles if patients agree to limit ET – reduction in Neonatal ICU costs more than funds ART

US Twins, Triplets and Higher Order Births

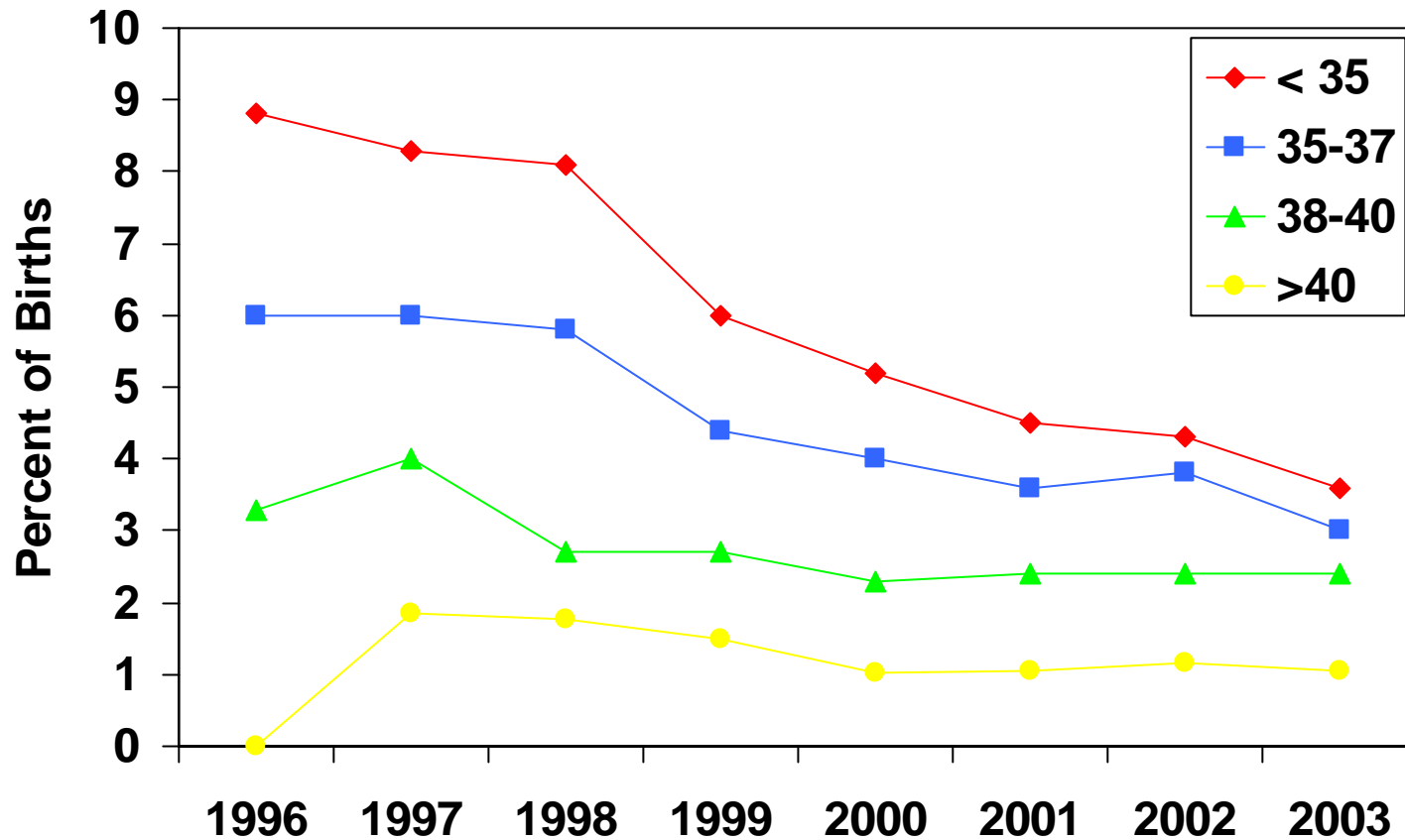


Trends in Embryo Transfer

<35 y/o



Percentage of High Order Multiples for Different Age Groups



Summary

- The costs of ART treatments affect access.
- The effects are to
 - Reduce the overall number that will have ART
 - Reduce accessibility for some groups more than others, i.e. race
 - Increase the age of those going through it which decreases the effectiveness of therapy
 - Increase 'risk behavior' by seeking higher numbers of embryos transferred which affects the health of offspring