



LOMA LINDA UNIVERSITY

CHILDREN'S HOSPITAL

November 25, 2016

Honorable Alice Johnson, Senator

Senate District 37, State of Minnesota

75 Rev. Dr. Martin Luther King, Jr. Blvd.

205 State Capitol Building

St. Paul, Minnesota 55155

Dear Senator Johnson:

I apologize for my belated response as your letter of October 4, 2016 that was just provided to me. I am submitting for your consideration 3 articles that I have authored or coauthored relating to Assisted Reproductive Technologies and Surrogacy focused on California, and the Position Statement of the National Perinatal Association.

Regarding surrogacy, our published papers and position statements encourage the following:

1. If gestational or traditional surrogacy is to be considered by Minnesota, then the women serving as a surrogate, the fetus or infant at the time birth, and the intended parents should be independently represented by legal counsel and parenthood should be established according the statutes of the State of Minnesota.
2. Surrogacy "agencies" should be regulated by the State of Minnesota and that all financial transactions between these agencies, intended parents and surrogates should comply to Minnesota taxation requirements (these transactions should be subject to taxation).
3. Citizens of another country or State with the United States seeking surrogacy in the State of Minnesota should be discouraged or banned unless the citizen is a member of the family of the surrogate.
4. Physicians transferring embryos into the surrogate should be encouraged to transfer single embryos in accordance to the Society for Assisted Reproductive Technology physicians. This recommendation is avoid or significantly reduce the number of multiple births that is associated with increased morbidity and mortality among the infants born as a result of multiple embryo transfer.

A Seventh-day Adventist Organization

11234 Anderson Street, Loma Linda, California 92354

909 558 8000 • www.lluhealth.org

5. Prospective parents should receive counseling from a multidisciplinary team to evaluate for their psychological and fiscal readiness prior to assuming the responsibilities of parenthood in Minnesota.
6. Prospective parents should be counseled regarding the need for adequate health insurance to if there are unforeseen complications of pregnancy, or if the pregnancy results in a child or children with special medical needs such as admission to a Neonatal Intensive Care Unit.
7. The Minnesota Birth Certificate should identify the gestational mother, although the intended parents should be listed as the parents of the child. Child have a fundamental right to know who their biologic mother and father.

As you and Representative Scott are undoubtedly aware, in California and other states (Oregon, New York) there have been significant abuses of surrogacy arrangements including federal prosecution in California of attorneys and surrogacy agencies pre-arranging children for prospective parents through the use of surrogates. Several states not permit surrogacy at all. Although there are efforts to keep these transactions entirely private by attorneys and some physicians, the interests of the State and the rights of the children conceived and born using a surrogate should be transparent and well regulated to avoid abuses.

It is well documented that infants delivered after surrogacy consume significantly increased medical resources (and thus increase costs), thus careful attention should be focused on single embryo transfer and state of the art obstetric care for women who serve as surrogates. Although I am not familiar with Minnesota taxation requirements, these transactions are essentially a "business transactions" by surrogacy agencies, attorneys, and the physicians and the National Perinatal Association has viewed these transactions as taxable.

Again, I sincerely apologize for receiving your letter very late, and hopefully my response can be included in the legislative history of the bill, and the recommendation of the National Perinatal Association, and others, considered in the final draft of this legislation.

Sincerely,

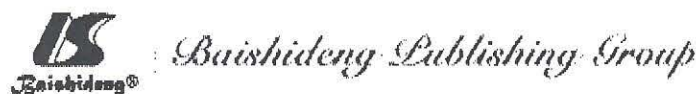


T. Allen Merritt, M.D., MHA

Professor of Pediatrics/Neonatology

Board Member, National Perinatal Association

Attachments: 1. World Journal of Obstetrics and Gynecology, November, 2015, 2. Journal of Perinatology, 2014, and 3. Position Statement of the National Perinatal Association 2014



Home (<http://www.wjgnet.com>) English - Sign In - Help Desk (<http://www.wjgnet.com/esps/helpdesk.aspx>)

Journals (<http://www.wjgnet.com/bpg/journals.htm>)

BPG is committed to discovery and dissemination of knowledge



(/2218-6220/index.htm)

About the Journal (/2218-6220/about.htm)

Submit a Manuscript (<http://www.wjgnet.com/esps/LoginRedirectType=1>)

Current Issue (/2218-6220/current.htm)

Search All Articles (<http://www.wjgnet.com/esps/Article>)

This Article

Retrospective Cohort Study

Abstract (/2218-

Core Tip (/2218-

Full Article (PDF)

Full Article (WORD)

Full Article (HTML)



(<http://www.wjgnet.com/esps/ArticleRecommend.aspx?TypeId=24&Id=17842>)



(<https://www.facebook.com/sharer/sharer.php?u=http://www.wjgnet.com/2218-6220/full/v4/i4/102.htm>)



([https://twitter.com/intent/tweet?url=http://www.wjgnet.com/2218-6220/full/v4/i4/102.htm&text=Outcomes of surrogate pregnancies in California and hospital economics of surrogate maternity and newborn care](https://twitter.com/intent/tweet?url=http://www.wjgnet.com/2218-6220/full/v4/i4/102.htm&text=Outcomes%20of%20surrogate%20pregnancies%20in%20California%20and%20hospital%20economics%20of%20surrogate%20maternity%20and%20newborn%20care))



(<https://plus.google.com/share?url=http://www.wjgnet.com/2218-6220/full/v4/i4/102.htm>)

Academic Content and Language Evaluation of This Article

CrossCheck and Google Search of This Article

Academic Rules and Norms of This Article

Citation of This Article

Corresponding Author of This Article



Copyright (<http://www.wjgnet.com/bpg/gerinfo/207>) ©The Author(s) 2015. Published by Baishideng Publishing Group Inc. All rights reserved.

World J Obstet Gynecol. Nov 10, 2015; 4(4): 102-107
Published online Nov 10, 2015. doi: 10.5317/WJOG.v4.i4.102

Outcomes of surrogate pregnancies in California and hospital economics of surrogate maternity and newborn care

Yona Nicolau, Austin Purkeypile, T Allen Merritt, Mitchell Goldstein, Bryan Oshiro

Yona Nicolau, Austin Purkeypile, T Allen Merritt, Mitchell Goldstein, Bryan Oshiro, Department of Pediatrics, Division of Neonatology, Loma Linda University Children's Hospital, Loma Linda, CA 92354, United States

Yona Nicolau, Austin Purkeypile, T Allen Merritt, Mitchell Goldstein, Bryan Oshiro, Department of Obstetrics and Gynecology, Loma Linda University Children's Hospital, Loma Linda, CA 92354, United States

Yona Nicolau, Austin Purkeypile, T Allen Merritt, Mitchell Goldstein, Bryan Oshiro, Office of Finance, Loma Linda University Children's Hospital, Loma Linda, CA 92354, United States

Author contributions: Nicolau Y designed research, performed research, analyzed data and wrote the paper; Purkeypile A designed research, performed research and contributed to analytic tools; Merritt TA designed research, performed research, analyzed data and wrote the paper; Goldstein M designed research, performed research and analyzed data; Oshiro B designed research, performed research and wrote the paper.

Institutional review board statement: The research was approved by the Institutional Review Board of Loma Linda University School of Medicine.

Informed consent statement: Written Informed consent was waived by Institutional Review Board of Loma Linda School of Medicine.

Conflict-of-interest statement: The authors declare not conflicts of interest.

Data sharing statement: The data contained in this manuscript has been approved for this use and cleared by all concerned parties.

Open-Access: This article is an open-access article which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Checklist of Responsibilities for the Scientific Editor of This Article

☑ Publishing Process of This Article

☑ Keywords for Related Literature of This Article

☑ Research Domain of This Article

☑ Article-Type of This Article

☑ Open-Access Policy of This Article

☑ Recommendation of This Article to Experts in the Relevant Field

☑ Publication of Peer-Review for This Article

☑ Times Cited Counts in Google of This Article

Number of Hits and Downloads for This Article

Total Article Views (652)

Correspondence to: Yona Nicolau, MD, Department of Pediatrics, Division of Neonatology, Loma Linda University Children's Hospital, 11175 Campus St, Coleman Pavilion 11121, Loma Linda, CA 92354, United States. ynicolau@llu.edu

Telephone: +1-909-5587448 Fax: +1-909-5580298

Received: March 26, 2015

Peer-review started: March 28, 2015

First decision: June 3, 2015

Revised: June 15, 2015

Accepted: August 4, 2015

Article in press: August 7, 2015

Published online: November 10, 2015

Abstract

AIM: To describe maternity and newborn charges for an economic analysis of surrogate pregnancies on the health care resource utilization.

METHODS: A retrospective chart review of all women identified as being surrogates and the infants born from these pregnancies was performed between January 1, 2012 and December 31, 2013. Selected maternity diagnoses, mode of delivery, duration of hospitalization, and hospital charges were collected together with infants' birth weights, gestational age, length of hospital stay, and hospital charges. Charges associated with the *in vitro* fertilization cycles, artificial insemination, or embryo(s) transfer into the surrogate were not considered in the maternity charges. A ratio contrasting the maternity hospital charges for the surrogate carrier was compared as a ratio to the mean charges for 2540 infants delivered in 2013 after natural conception and adjusted to the baseline hospital charges for both maternity and newborn care.

RESULTS: Analysis of sixty-nine infants delivered from both gestational and traditional surrogate women found an increased in multiple births, NICU admission, and length of stay with hospital charges several multiples beyond that of a term infant conceived naturally and provided care in our nursery. Among singletons and twins (per infant) hospital charges were increased 26 times ($P < 0.001$) and in triplets charges were increased 173 times ($P < 0.0001$) when compared to a term infant provided care in a normal nursery at our center.

CONCLUSION: Maternity costs for surrogates exceed those of women who conceive naturally, and these costs are especially magnified in women with triplets and multiple births.

Key Words: Surrogacy pregnancy (<http://www.wjgnet.com/esps/ArticlesPublishedOnline.aspx?Key=Surrogacy+pregnancy>), Assisted reproductive technologies (<http://www.wjgnet.com/esps/ArticlesPublishedOnline.aspx?Key=Assisted+reproductive+technologies>), Prematurity (<http://www.wjgnet.com/esps/ArticlesPublishedOnline.aspx?Key=Prematurity>), Multiple gestations (<http://www.wjgnet.com/esps/ArticlesPublishedOnline.aspx?Key=Multiple+gestations>)

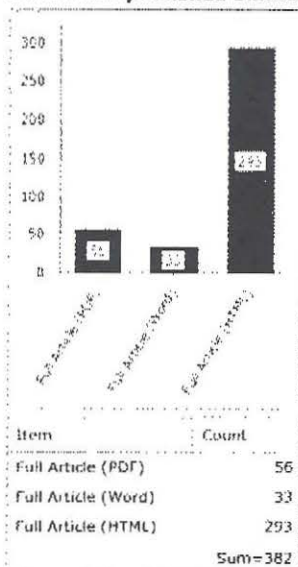
Core tip: Surrogate pregnancies result in higher maternity and newborn costs with increased rates of multiple births and creates a moral hazard for hospitals. This increase occurs despite of the fact that surrogate mothers are prescreened for health and reproductive ability. Reduction in multiple embryo transfer would reduce the adverse economic impact of surrogate pregnancy, maternity and newborn costs.

Citation: Nicolau Y, Purkeypile A, Merritt TA, Goldstein M, Oshiro B. Outcomes of surrogate pregnancies in California and hospital economics of surrogate maternity and newborn care. *World J Obstet Gynecol* 2015; 4(4): 102-107

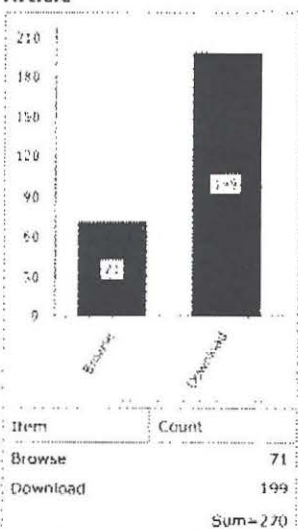
INTRODUCTION

In the United States approximately 7.4% of married couples are affected by infertility[1]. The causes of infertility are multiple and range from advanced maternal age, uterine malformation, hysterectomy, fallopian tube blockage, previous tubal ligation, lack of oocyte reserve in women, male factor infertility associated with oligospermia, previous vasectomy with failed reconstruction, and other causes. In addition to fertility, in our evolving society where non-traditional family models are increasingly accepted, more and more single adults, or adults in same-sex relationships or marriage also desire to become parents and rear a family. In many such situations prospective parents may enter into an agreement to obtain oocytes or sperm, or use the surrogate's own egg and serve as a traditional surrogate for a pregnancy[2]. In other situations, a couple that has genetically related embryos created

All Articles published online



Publishing Process of This Article



Nov 10, 2015 (publication date) through Nov 26, 2016

Journal Information of This Article

Publication Name

World Journal of Obstetrics and Gynecology

ISSN

2218-6220 (online)

Publisher of This Article

Baishideng Publishing Group Inc, 8226 Regency Drive, Pleasanton, CA 94588, USA

through *in vitro* fertilization (IVF) requires another women, a gestational carrier, in whom an embryo(s) and fetus(es) may develop. After birth, through a contractual relationship arranged prior to pregnancy, the gestational carrier relinquishes the infant(s) to the intended parents[2].

In many countries and in some United States states, traditional and gestational surrogacy is illegal. In the United States and its territories, a patchwork of laws regarding surrogacy exists[3]. Some United States states, limit the use of surrogacy, or permit surrogate pregnancies or use of gestational carriers only among married couples or the use of gametes from relatives, and in most states surrogacy contracts and their enforcement are determined by case law. Nevertheless, surrogacy is gaining greater societal acceptance in the United States. For instance, in California, one of the most liberal United States states in this respect, the law permits both traditional and gestational surrogacy in exchange for payment, and designates independent legal counsel for the surrogate and the intended parents, and the creation of a contract with judicial review and approval under the Uniform Parentage Act as amended in 2012[4]. However, the recruitment of women as traditional or as gestational surrogate carriers is unregulated in California. Further informed consent with thorough discussion of the risks associated with oocyte retrieval for some embryo transfers used in gestational surrogacy is unregulated in all states except California, and significant gaps have been identified in adherence to state statutes [5]. Despite the growing popularity of surrogacy, the medical complications associated with surrogacy and the related costs have not been precisely quantified to date. While anecdotal evidence suggests that these complications and costs are much higher than in normal pregnancies no peer reviewed data are available for documentation. This is a critical question to explore since such complications have not only financial and social costs, but may raise ethical issues for prospective parents, physicians, and hospitals. These issues need to be quantified and clarified, so that proper information and counseling/guidance can be provided to the potential parents and to women wishing to be surrogates.

In 2012, the Society for Assisted Reproductive Technology reported that among 379 of their member clinics, 165172 cycles or procedures involving *in vitro* fertilization were performed, and that infants conceived using *in vitro* fertilization procedures constituted 1.5% of all births in the United States[6]. However, the number of infants being born using either traditional or gestational surrogacy is not known. For 2009, the Centers for Disease Control and Prevention (CDC) released information regarding 145244 assisted reproductive procedures performed in the United States. California ranked the highest with 18405 procedures performed, with 7545 infants born from the use of these technologies. Only 52.7% of the infants born were singletons - in contrast to 96.8% of naturally conceived infants[7], and these data did not distinguish between surrogate and other IVF births.

IVF pregnancies are considered high-risk pregnancies due to the increased risk of prematurity, pregnancy related complications, and increased incidence of multiple gestations. These factors may directly relate to the increased medical charges associated with these pregnancies[8]. There are multiple costs specific to surrogacy, many of which are beyond the purview of this report, which focuses on the hospital costs associated with surrogate births. For example, the costs of acquisition of surrogate or gestational carrier women (often through the use of agencies who advertise for eligible women), attorneys who specialize in preparing contracts between prospective parents and the surrogate, and other costs such as specialized social services, psychological counseling for the intended parents and often for the surrogate herself.

We hypothesized that hospital charges for maternity and newborn care would be significantly greater for women serving as surrogates than those delivering after natural conception and that the hospital charges for the infants would also be significantly greater than for infants delivered after natural conception and at term among naturally conceived infants. As a major medical center in Southern California we believe that baseline data from our center may be useful in informing those contemplating surrogacy pregnancies.

MATERIALS AND METHODS

The Institutional Review Board of Loma Linda University evaluated this study and determined that it was exempt from informed consent. Selected maternity diagnosis, mode of delivery, duration of hospitalization, and hospital charges were collected from women who were identified by their obstetrical provider as being a surrogate (traditional or gestational carrier). Infants born of these pregnancies had their birth weights, gestational age, length of hospital stay, and hospital charges tabulated, as well as their stay in either the normal nursery or neonatal intensive care unit between January 1, 2012 and December 31, 2013 tabulated from medical chart review. All hospital charges data were independently tabulated by the Office of Finance based on the surrogate's or infant's medical record number, as well as, the source of payment such as private payment, third party insurer, or charged to a national health insurance scheme for international surrogacy arrangements.

Charges associated with the IVF cycles, artificial insemination, or embryo(s) transfer into the surrogate were not considered in the maternity charges. A ratio contrasting the maternity hospital charges for the surrogate carrier was compared as a ratio to the mean charges for 2540 infants delivered in 2013 after natural conception. 2013 was chosen as the baseline hospital charges for both maternity and newborn

care, as the electronic medical system and financial accounting system change occurred in late December 2012. Between 2012 and 2013 there was a 9% increase in hospital charges. Therefore hospital charges for both maternity care for 2012 were adjusted by this increase in hospital charges. Charges for infant care in "normal nursery" or in the Neonatal Intensive Care unit were similarly tabulated and charges for 2012 adjusted to charges in 2013 because of the increase in hospital charges.

RESULTS

According to the CDC, in 2011 and 2012 there were 1766 cycles in gestational carriers in the State of California that resulted in the birth of 1067 infants of whom 36% (in 2011) and 39% (in 2012) were born prematurely. Approximately 15% were multiple births (CDC)[2]. Data from traditional surrogacy pregnancies or outcomes are not collected by either the CDC or by the California Department of Health Services.

At our center, 45 women served as surrogates (24 gestational and 21 traditional) from January 1, 2012 until December 31, 2013. These women averaged 27 (range 20-43) years of age with a mean of 2.7 prior pregnancies prior to being a surrogate during the 24 months of our study (range 0-8 previous pregnancies). These women had an average of 2.3 living children (range 1-7) prior to the surrogate pregnancy. These data (and standard deviations) are summarized in Table 1.

Table 1 (<http://www.wjgnet.com/2218-6220/full/v4/i4/102-T1.htm>) Characteristics of Surrogate Women prior to surrogate pregnancy: mean, range and SD.

Surrogates	Age (yr)	Gravidity	Parity
n = 45	27	2.7	2.3
Range	20-43	1-8	1-7
SD	4.6	3.6	3.3

According to maternity documents, prenatal care began in the 4.5 wk of embryo transfer or artificial insemination. Among women delivering at our center with embryo transfers (genetically related or not) 55.5% were with multiple embryos. Sperm from the intended father[2], donor semen[3], or mixed sperm from one male couple were impregnated into the 21 traditional surrogates. The cesarean section rate was 52% for surrogate gestations contrasted to 33% among women who conceived naturally. This increased operative mode of delivery may account for the increased average length of hospitalization among women who were surrogates. Table 2 documents the births as singleton or plural births, surrogate length of stay (LOS) for maternity care pre and post birth, and hospital charges as a ratio to women who delivered after natural conception. In the only triplet gestation there was a significantly longer length of stay and her maternity charges were considerably higher than compared to either singleton, or twin gestations.

Table 2 (<http://www.wjgnet.com/2218-6220/full/v4/i4/102-T2.htm>) Maternal characteristics for surrogate pregnancies related to singleton, twin or triplet delivery.

Surrogates	Maternity LOS (d)	Ratio	Hospital charges(± SD)	Ratio
Singleton births (n = 20)	4.2 (1.2)	1.3	\$31115	1.2
Twin births (22)	3.5 (0.8)	1.1	\$29692 ± 11892	1.1
Triplet births	15	4.7	\$102673	3.8

Hospital Length of Maternity Stay (LOS) and charges compare surrogate carrier charges related to LOS and maternity charges for naturally conceived term infants requiring normal nursery care (mean ± SD).

Sixty-nine live-born infants resulted from surrogate gestations. Four infants died soon after birth due to extreme prematurity (although the legalized parents refused resuscitation for 24 wk twins). There was one fetal death in a twin pair, and the surviving infant was classified as a singleton, and among a triplet gestation there was fetal reduction of one fetus, and the infants born were classified as twin. Among the 69 infants born, 78% were born prior to 37 completed wk and 17.4% were born less than 30 wk. The mortality rate was 5.7% among infant born using assisted reproduction technologies in contrast to 0.7% of naturally conceived infants and having their initial admission to the normal nursery. Table 3 documents the infant characteristics by birth weight, gestational age, length of hospitalization, and the ratio of charges compared to naturally conceived infants. Compared to naturally conceived singleton or twin infants admitted to the normal nursery with a mean length of stay of 2.1 d, infants delivered of surrogates had a substantially greater length of stay. This longer length of stay was undoubtedly

associated with the greater number of infants admitted to the NICU after delivery to a surrogate. Hospital charges were increased 26 times for both singleton and twin deliveries (tabulated per infant) to surrogates, and 173 times for each triplet infant (the sole triplet set that were born alive).

Table 3 (<http://www.wjgnet.com/2218-6220/full/v4/i4/102-T3.htm>) Infant characteristics after birth from surrogate pregnancy.

Infant(s)	Birth weight	GA	LOS	Hospital charges	Ratio
Singleton (n = 19)	3798.3 ± 832.9	35.9 ± 2.9	11 ± 3	\$154874 ± 326415	26.2
Twins (n = 44)	2151.5 ± 750.5	33.8 ± 4.3	12.7 ± 4	\$154885 ± 339442	26.2
Triplets (n = 3)	1337.2 ± 91.8	30.0 ± 0	75.0 ± 0	\$1025927 ± 99097	173.8

Hospital charges are expressed as a ratio of hospital charges for per infant compared to hospital charges for a term infant provided care in the normal nursery (mean ± SD). GA: Gestational age; LOS: Length of stay

DISCUSSION

Data regarding outcomes of surrogacy pregnancies in California using a gestational carrier and from our center (both gestational and traditional surrogates) reveal a higher rate of prematurity and lower birth weight than among pregnancies resulting from natural conception. The higher cesarean rate may be explained by the higher multiple gestation pregnancies among surrogates and is consistent with the report on the increasing cesarean section rate among twins[10].

Charges for hospital services for these women and the infants delivered provide new information regarding the consumption of medical services by these pregnancies. A discussion of healthcare economics is relevant to the data presented by our experience at a single center. While many healthcare economic discussions center on dwindling reimbursement, the issue is quite different with provision for services to surrogates. Commercial insurance coverage was available for all but one of the women serving as surrogates, and of the 69 infants all but 8 also had commercial insurance with the other women or infants classified as "self pay" resulting in a net profit for our center for maternity care. Newborns were similarly covered except that national health plans in France and Spain would not cover the costs of neonatal intensive care. Combining a well-insured population with a profitable service line such as neonatal intensive care at our center produces a favorable financial outcome for our center. However, in an environment where state-sponsored insurance payments are declining and more people are migrating towards lower-paying insurance exchanges, medical centers are inclined to protect their major sources of margin. This raises the concern of the "moral hazard" of surrogacy. As illustrated surrogate women and the infants delivered have greater rates of cesarean section, premature birth, and low birth weight infants at significantly higher rates than the population of infants born after natural conception. The same is true for IVF/Assisted Insemination pregnancies[8]. Kissin et al[11] recently calculated the increased medical costs attributed to Assisted Reproductive Technologies by state. California led with this economic burden for 2013 estimated at \$158800418.

A "moral hazard" occurs when the system that helps create the higher risk pregnancy also stands to profit from the additional care that the women and babies are likely to require. The interests of the 3 decision-making parties - intended parents, healthcare system and insurance system - are not aligned. Although gestational surrogacy represents a fraction of all IVF related births, these increased costs and potential profitability are not aligned with value-based health care. The overwhelming desire of prospective parents is to have a normal infant ideally delivered at term. In most cases, these couples, or even single adults will have attempted multiple other means of having a child before settling on the significantly more complicated method of hiring a surrogate. Most families will be paying cash for the surrogate pregnancy (\$20-30000 for a surrogate, if an egg donor is required another \$5-10000, the fertility clinic and reproductive endocrinologist \$15000 per cycle, the surrogacy agency \$10-20000) and attorneys fees of about \$10000[12]. However, the cost for prenatal care, maternity charges, and expenses associated with neonatal intensive care may exhaust some intended parents resources. While many intended parents may be able to afford the \$50000 or so to begin a pregnancy with the assistance of a surrogate, we have encountered many who have been unprepared for the charges associated with the care of a complicated newborn born prematurely and requiring several days in a Neonatal Intensive Care unit. Nor are families necessarily prepared for all the implications of a multiple-birth and the associated short- and long-term costs. If a pregnancy has a lower than normal probability of success or more potential complications how extensive should physicians explain these risks? How much do intended parents need or want to know regarding potential complications in the newborns and the added financial costs associated with a premature infant or multiple births? These questions are central to the ethical debate that has surrounded surrogacy. Kissin et al[13] has stressed that outcomes of assisted reproductive technologies should properly be assessed on the basis of the number of singleton infants born at term not simply based on live births.

An extension of the "moral hazard" concerns with surrogacy has been the misunderstandings that arise between intended parents and surrogates, and unforeseen events during such a pregnancy. Intended parents-surrogates disputes have arisen when the intended parents demand that the surrogate terminate a pregnancy when a significant fetal malformation is identified, or intended parents change their mind mid-gestation, e.g., by initiating divorce proceedings, or when an intended parent dies. Surrogates may make greater demands on intended parents when multi-fetal gestations occur, or they may wish to engage in behaviors forbidden in their contract, or they may wish to parent the infant themselves. As noted by Andrew W. Vozzimer, a prominent attorney in arranging such contracts in Los Angeles, of 118 surrogacy cases in which a dispute arose 82 were cases in which the intended parents changes their mind and the remainder were by women serving as surrogates (many of whom were traditional surrogates providing her eggs and also carrying the infant) (Andrew W. Vozzimer, J.D., personal communication July 18, 2013).

Margalit[14], an attorney, argues that surrogacy contracts are both desirable and necessary to ensure fairness and enforceability to the benefit of all parties involved. To increase the likelihood that these dual goals of fairness and enforceability are achieved, Margalit[14] further argues that all parties should have independent legal representation from the start of the process as well as thorough, precise, medical guidance as to the risks and probabilities of various outcomes, including catastrophic outcomes. In addition, the paper argues that both sides should receive social and psychological support, and the contract should comprehensively deal with all possible outcomes, including unhealthy newborn(s), premature birth, complications/chronic diseases, and the divorce/death of the intending parents. Finally, every effort should be made to ensure that the disparity in economic strength between the parties to the contract does not interfere with the parties decision to enter into the contract nor "interferes with their free will". Additional legal/ethical risk may arise when prospective parents turn to off-shore surrogacy agencies (primarily in India, Thailand and Mexico) in an effort to cut costs. While these agencies often charge approximately half of what United States agencies do, some are not as reputable and engage in unethical practices and sometimes out-right fraud[15].

Finally, what is the insurance company's piece of this puzzle? By and large, families have borne the expense of the surrogacy, but the infant is now covered under the family's insurance plan even though the parents have voluntarily assumed more than the usual risk. The health insurance industry has thus far been slow to adjust premiums to risk profiles. However, as responsibility for payment continues to shift over to patients through high-deductible plans and cost-sharing, it's reasonable to expect that voluntary assumptions of greater risk will be looked at more critically by the insurance industry and by state health exchanges that must assume even greater risk.

A potential game-changer to the surrogacy moral hazard is an ongoing shift in how hospitals contract with insurers. Historically, they have been paid on a fee-for-service basis where they are paid a percentage of charges or a per diem rate. As their usage increases so does their payment. Medicare saw tremendous opportunity for abuse under their cost-plus reimbursement in the 70s and switched to a DRG-based case rate that also affects Medicaid (MediCal) hospital payment in California. Recently a number of state Medicaid programs followed suit with All Patient Refined DRG-based case rate payments. However, by and large, providers are still financially incentivized to increase rather than decrease the cost of care.

Increasingly health insurance policies are requiring consumers to be more accountable for their healthcare or they are charged larger premiums.

Another aspect of the "moral hazard" of surrogacy is that voluntary risk acceptance could come increasingly under extreme scrutiny. If a medical center stood not to gain, and rather potentially to lose a great deal in the care of surrogate women and the infants from these pregnancies (as may occur in some cases of international prospective parents counting on reimbursement from their countries national health plan, especially countries that deem surrogacy illegal) how might this impact the market for the care of women surrogates, or their infants? All of these dynamic considerations make it imperative that prospective parents and medical providers have a full understanding of the risks and frequently unforeseen costs associated with surrogacy decisions.

In conclusion, data from California indicate that gestational surrogacy is increasing, and data highlight the substantial increase in multiple births, often born prematurely in California. We document at our single site the extensive requirement for neonatal intensive care and associated increased hospital charges for medical services for both surrogate (both gestational and traditional) and infants from surrogate pregnancies. In a value-based health care system, the "moral hazard" associated with promotion of surrogacy and the higher charges associated with maternity and infant care raises important issues in an area of health care services lacking regulation.

COMMENTS

Background

Surrogate pregnancies result in increased maternity costs in spite of pre-selected for maternal reproductive health primarily associated with an increase in multiple gestations that are associated with increased cesarean section rates, more preterm deliveries, increased neonatal intensive care with added neonatal morbidities.

Research frontiers

Surrogate pregnancies are permitted in several United States states, but the outcomes of these pregnancies have not been rigorously evaluated in terms of maternity or neonatal complications or hospital associated charges.

Innovations and breakthroughs

California has more surrogate pregnancies of any United States states and the impact on health economics is imperative for healthcare value with significantly greater multiples births than occur have natural conception.

Applications

Health economists and insurance providers are focused on health care value. Given the increased charges associated with surrogate pregnancies and the infants born thereof, surrogacy may come under additional scrutiny because of the moral hazard created by these gestations and the impact on health care resources.

Terminology

In this paper surrogacy includes both traditional and gestational surrogacy.

Peer-review

The authors have performed a good study, the manuscript is interesting.

Footnotes

P- Reviewer: Chen CP, Cosmi E, Martins WP, Zhang XQ S- Editor: Tian YL L- Editor: A E- Editor: Wang CH

References

- Mneimneh AS**, Boulet SL, Sunderam S, Zhang Y, Jamieson DJ, Crawford S, McKane P, Copeland G, Mersol-Barg M, Grigorescu V. States Monitoring Assisted Reproductive Technology (SMART) Collaborative: data collection, linkage, dissemination, and use. *J Womens Health (Larchmt)*. 2013;**22**:571-577. [PubMed (<http://www.ncbi.nlm.nih.gov/pubmed/23829183>)] [DOI (<https://dx.doi.org/10.1089/jwh.2013.4452>)]
- Committee on ethics**. ACOG committee opinion number 397, February 2008: surrogate motherhood. *Obstet Gynecol*. 2008;**111**:465-470. [PubMed (<http://www.ncbi.nlm.nih.gov/pubmed/18238989>)] [DOI (<https://dx.doi.org/10.1097/AOG.0b013e3181666017>)]
- Hinson DS**. State-by-State Surrogacy Law Across the US. [accessed 2014 Jul 30]. Available from: http://creativefamilyconnections.com/wp-content/uploads/2015/01/surrogacy_law.pdf (http://creativefamilyconnections.com/wp-content/uploads/2015/01/surrogacy_law.pdf).
- California Code - Part 3: Uniform parentage act**. [accessed 2013]. Available from: <http://codes.lp.findlaw.com/cacode/FAM/1/d12/3> (<http://codes.lp.findlaw.com/cacode/FAM/1/d12/3>).
- Alberta HB**, Berry RM, Levine AD. Risk disclosure and the recruitment of oocyte donors: are advertisers telling the full story? *J Law Med Ethics*. 2014;**42**:232-243. [PubMed (<http://www.ncbi.nlm.nih.gov/pubmed/25040386>)] [DOI (<https://dx.doi.org/10.1111/jlme.12138>)]
- American Society of Reproductive Medicine. Society for Assisted Reproductive Technology Releases New Fertilization Procedures. [accessed 2014 Feb 17]. Available from: http://www.sart.org/Society_for_Assisted_Reproductive_Technology_Releases_New_Annual_Report (http://www.sart.org/Society_for_Assisted_Reproductive_Technology_Releases_New_Annual_Report)
- Sunderam S**, Kissin DM, Flowers L, Anderson JE, Folger SG, Jamieson DJ, Barfield WD. Assisted reproductive technology surveillance--United States, 2009. *MMWR Surveill Summ*. 2012;**61**:1-23. [PubMed (<http://www.ncbi.nlm.nih.gov/pubmed/23114281>)]
- Merritt TA**, Goldstein M, Philips R, Peverini R, Iwakoshi J, Rodriguez A, Oshiro B. Impact of ART on pregnancies in California: an analysis of maternity outcomes and insights into the added burden of neonatal intensive care. *J Perinatol*. 2014;**34**:345-350. [PubMed (<http://www.ncbi.nlm.nih.gov/pubmed/24556981>)] [DOI (<https://dx.doi.org/10.1038/jp2014.17>)]

9. Centers for Disease Control and Prevention (CDC). Accessing National ART Surveillance Data. [accessed 2014 Jun 30]. Available from: <http://www.cdc.gov/art/nas/accessData.html> (<http://www.cdc.gov/art/nas/accessData.html>).
10. Lee HC, Gould JB, Boscardin WJ, El-Sayed YY, Blumenfeld YJ. Trends in cesarean delivery for twin births in the United States: 1995-2008. *Obstet Gynecol*. 2011;**118**:1095-1101. [PubMed] (<http://www.ncbi.nlm.nih.gov/pubmed/22015878>) [DOI] (<https://dx.doi.org/10.1097/AOG.0b013e3182318651>)
11. Kissin DM, Jamieson DJ, Barfield WD. Monitoring health outcomes of assisted reproductive technology. *N Engl J Med*. 2014;**371**:91-93. [PubMed] (<http://www.ncbi.nlm.nih.gov/pubmed/24988584>) [DOI] (<https://dx.doi.org/10.1056/NEJMc1404371>)
12. Lewin T. The New York Times: Coming to U.S. for Baby, and Womb to Carry It- Foreign Couples Heading to America for Surrogate Pregnancies. Available from: http://www.nytimes.com/2014/07/06/us/foreign-couples-heading-to-america-for-surrogate-pregnancies.html?_r=0 (http://www.nytimes.com/2014/07/06/us/foreign-couples-heading-to-america-for-surrogate-pregnancies.html?_r=0).
13. Kissin DM, Kulkarni AD, Kushnir VA, Jamieson DJ. Number of embryos transferred after in vitro fertilization and good perinatal outcome. *Obstet Gynecol*. 2014;**123**:239-247. [PubMed] (<http://www.ncbi.nlm.nih.gov/pubmed/24402601>) [DOI] (<https://dx.doi.org/10.1097/AOG.000000000000106>)
14. Margalit Y. In Defense of Surrogacy Agreements: A Modern Contract Law Perspective. *Wm and Mary J. Women & Law*. 2014;**20**:1-33.
15. Lewin T. A Surrogacy Agency That Delivered Heartache. *New York Times*. [accessed 2014 Jul 27]. Available from: <http://www.assistedfertilityblog.com/new-york-times-a-surrogacy-agency-that-delivered-heartache-by-tamar-lewin/> (<http://www.assistedfertilityblog.com/new-york-times-a-surrogacy-agency-that-delivered-heartache-by-tamar-lewin/>).

Write to the Help Desk (<http://www.wjgnet.com/esp/helpDesk.aspx>)

ALL AUTHOR RESOURCES

Article Processing Charge
(<http://www.wjgnet.com/bpg/generfo/242>)

Common Usage of Quantities and Units
(<http://www.wjgnet.com/bpg/generfo/189>)

Copyright Assignment
(<http://www.wjgnet.com/bpg/generfo/250>)

Create an Account
(<http://www.wjgnet.com/esp/register.aspx>)

Guidelines for Authors
(<http://www.wjgnet.com/bpg/generfo/204>)

Guidelines for the Manuscript Publishing Process
(<http://www.wjgnet.com/bpg/generfo/193>)

Journals
(<http://www.wjgnet.com/bpg/journals.htm>)

Non-Native Speakers of English
(<http://www.wjgnet.com/bpg/generfo/240>)

Open-Access
(<http://www.wjgnet.com/bpg/generfo/273>)

Publication Misconduct
(<http://www.wjgnet.com/bpg/generfo/208>)

Quality of Publications
(<http://www.wjgnet.com/bpg/generfo/264>)

ALL PEER-REVIEWER RESOURCES

F6 Peer-Reviewer Tracking System for Manuscripts
(<http://www.wjgnet.com/esp/trackmembormanuscript.aspx>)

F6 Reviewer Acknowledgment System
(<http://www.wjgnet.com/esp/highlyinfluentialpeerreviewers.aspx>)

Peer-Review Process
(<http://www.wjgnet.com/bpg/generfo/241>)

ALL READER RESOURCES

E-Books
(<http://www.wjgnet.com/bpg/e-books.htm>)

E-Journals Bundles
(<http://www.wjgnet.com/bpg/e-boundjournals.htm>)

F6 Search All Journal Articles
(<http://www.wjgnet.com/esp/articlesearch.aspx>)

F6 Search Articles In Press
(<http://www.wjgnet.com/esp/articlesinpress.aspx>)

F6 Search Featured Articles
(<http://www.wjgnet.com/esp/featuredarticles.aspx>)

F6 Search Published Articles Processes
(<http://www.wjgnet.com/esp/articlespublishedonline.aspx>)

Keyword F6 Search Articles In Press
(<http://www.wjgnet.com/esp/articlekeywords.aspx>)

Keyword F6 Search Published Articles Processes
(<http://www.wjgnet.com/esp/articlekeywords.aspx?typeid=2>)

ALL PUBLISHER RESOURCES

About the BPG
(<http://www.wjgnet.com/bpg/about.htm>)

BPG Home (<http://www.wjgnet.com/bpg/>)

Committee on Publication Ethics
(<http://www.wjgnet.com/bpg/generfo/205>)

Company Registration
(<http://www.wjgnet.com/bpg/generfo/249>)

Contact Us
(<http://www.wjgnet.com/bpg/contact.htm>)

Editorial Office
(<http://www.wjgnet.com/bpg/generfo/254>)

COPE Conformity
(<http://www.wjgnet.com/bpg/generfo/257>)

Management Team
(<http://www.wjgnet.com/bpg/members.htm>)

Ownership
(<http://www.wjgnet.com/bpg/generfo/275>)

Permissions
(<http://www.wjgnet.com/bpg/generfo/207>)

Privacy Policy
(<http://www.wjgnet.com/bpg/generfo/269>)

Publisher
(<http://www.wjgnet.com/bpg/generfo/262>)

Publishing Credentials
(<http://www.wjgnet.com/bpg/generfo/270>)

Revenue Sources
(<http://www.wjgnet.com/bpg/generfo/265>)

Special Statement
(<http://www.wjgnet.com/bpg/generfo/266>)

Terms of Use
(<http://www.wjgnet.com/bpg/generfo/268>)

Original Article

Journal of Perinatology (2014) 34, 345–350; doi:10.1038/jp.2014.17; published online 20 February 2014

There is a **Corrigendum (31 October 2014)** associated with this article.

Impact of ART on pregnancies in California: an analysis of maternity outcomes and insights into the added burden of neonatal intensive care

T A Merritt¹, M Goldstein¹, R Philips¹, R Peverini¹, J Iwakoshi², A Rodriguez² and B Oshiro²

¹The Department of Pediatrics, Division of Neonatology, Loma Linda University School of Medicine, Loma Linda, CA, USA

²The Department of Obstetrics and Gynecology, and the Perinatal Education Program of Loma Linda University Children's Hospital, Loma Linda, CA, USA

³The Department of Pediatrics, Loma Linda, CA, USA

Correspondence: Dr TA Merritt, Department of Pediatrics, Division of Neonatology, Loma Linda University Children's Hospital, 11175 Campus St, Coleman Pavilion 11121, Loma Linda, CA 92354, USA. E-mail: tamerritt@llu.edu

Received 26 September 2013; Revised 12 December 2013; Accepted 10 January 2014
Advance online publication 20 February 2014

Abstract

Objective: We reviewed the occurrence of prematurity, low birth weight, multiple gestations, frequency of stillbirths and maternity care-associated variables including hospital stay and hospital charges of women conceiving using assisted reproductive technology (ART) or artificial insemination (AI) compared with women with a history of infertility who conceived naturally, and all other naturally conceived pregnancies in California at non-federal hospitals between 2009 and 2011. At a single center, infants born after ART/AI were compared with infants provided care in the normal nursery.

Study design: Publically available inpatient data sets from the California Office of Statewide Health Planning and Development for years 2009–2011 using data from all California non-federal hospitals were used to determine the impact of ART on a variety of pregnancy-related outcomes and infant characteristics. Infant data from a single center was used to determine hospital charges for infants delivered over an 18-month period to compare the hospital and physician charges indexed to similar charges for infants admitted to the 'normal' newborn nursery.

Result: Among ART/AI pregnancies, there was a 4–5-fold increase in stillbirths, compared with a 2–3-fold increase among women with infertility compared with other naturally conceiving women. ART/AI pregnancies underwent more cesarean sections (fourfold), and a near fourfold increase in the rate of preterm deliveries. Multiple gestations were increased 24–27-fold compared with naturally conceived pregnancies. Maternal hospital stay and hospital charges were increased among those undergoing ART/AI. Infant charges were increased multi-fold for singletons, twins and triplets delivered after ART/AI compared with naturally conceived infants.

Conclusion: Multiple births, preterm births and a higher overall rate of fetal anomalies were found in California after ART/AI for 2009–2011. Cesarean section rates, longer length of maternal stay and hospital charges among women receiving ART/AI could be lowered if emphasis on elective single embryo transfers was a higher priority among providers.

Charges for the care of infants delivered after ART/AI are substantially higher than among naturally conceived infants born late preterm or at term. Families seeking ART/AI need to be informed of the impact of these adverse pregnancy outcomes, including neonatal outcomes and charges for medical care for their infant(s), when considering ART/AI.

Keywords: assisted reproductive technologies; maternal morbidity; multiple gestations; low birth weight infant; NICU charges; embryo transfer

Introduction

Infertility affects ~7.4% of married couples in the United States.¹ The causes of infertility are multiple. Treatments for infertility have included ovarian stimulation, reconstruction surgery after previous tubal ligation or vasectomy and intrauterine insemination. Since 1978 in the UK and 1981 in the United States, the use of assisted reproductive technologies (ARTs) has assisted infertile couples achieve pregnancy.^{2,3} In 2009, there were 146 244 ART procedures (primarily *in vitro* fertilization) performed in the United States as reported to the Centers for Disease Control and Prevention, of which the largest number occurred in California (18 405).⁴ About 1.4% of U.S. births in 2009 resulted from ART, with the state of Massachusetts reporting the highest proportion of births resulting from ART (4.3%). In California, 1.4% or 7545 of 527 020 live-born infants resulted from ART, of which only 52.7% were singletons compared with 96.8% of all naturally conceived infants.⁴

We reviewed the incidence of various morbidities including prematurity, low birth weight infants, multiple gestations and stillbirths in pregnancies conceived using ART/artificial insemination (AI). We also reviewed the potential impact of these services on the costs attributable to maternity care, and hospital and physician charges at our center. We sought to establish baseline data and to understand the implications of wide availability of these reproductive services that may occur with health-care reform. Although Massachusetts, Michigan, Florida and Connecticut have participated in the States Monitoring Assisted Reproductive Technology Collaborative from the Centers for Disease Control and Prevention, which includes specific demographics regarding ART in these states, California data are not included in this database.⁵ Publicly available inpatient discharge data sets from the California OSHPD (Office of Statewide Health Planning and Development) for years 2009–2011 were used to extrapolate the impact of ART on a variety of pregnancy-related outcomes by comparing three groups of delivering mothers: women using ART/AI, women with a diagnosis of infertility in whom such services were not used and all other women delivering babies each year. We also examined hospital and physician charges for infants delivered after ART/AI procedures at a single center.

We hypothesized that pregnancies conceived by ART or AI would be at higher risk for adverse pregnancy-associated outcomes, and that by identification of these outcomes, greater focus might redirect health-care resources toward improving the outcomes of these pregnancies. The cost of neonatal care for infants delivered after conception using ART/AI during 2012 and the first 6 months of 2013 was tabulated from a large Southern California medical center with ART services provided by this medical center and from other fertility centers.

Methods

This retrospective study was performed after obtaining institutional research board approval from Loma Linda University. Public versions of the 2009–2011 Patient Discharge Data Files from California OSHPD were used to estimate the impact of ART and infertility on a variety of pregnancy-related outcomes. This annual data set contains a unique record for every inpatient discharge from all non-federal hospitals licensed in California. A discharge abstract is reported for each inpatient hospitalization and includes, among other things, patient demographics, admission and discharge details and International

Classification of Disease, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis and procedure codes specific to the patient of record.⁶ Discharge records were identified as maternal delivery discharges if they met all of the following criteria: Major Diagnostic Category (MDC) equal to Pregnancy, Childbirth, and the Puerperium,⁶ Medicare Severity-Diagnosis Related Group (MS-DRG) equal to cesarean delivery (765, 766) or vaginal delivery (767, 768, 774, 775); and an Outcome of Delivery ICD-9-CM code (V27) among any of 25 diagnosis fields available in the data set. Maternal delivery discharges were then assigned to one of three mutually exclusive groups: ART/AI, infertility or natural conception. Discharges were assigned to the ART/AI group if either of the following ICD-9-CM codes was present in the record: V23.85 – pregnancy resulting from ART or V26.1 – AI. The infertility group consisted of women whose records did not include an ART or AI ICD-9-CM code but did include either of the following: 628 – infertility (female), or V23.0 – pregnancy with history of infertility. All other maternal delivery discharges were assigned to the natural conception group. Diagnosis fields were further queried for incidence of the following pregnancy outcomes among maternal delivery discharges: stillbirth (ICD-9-CM codes V27.1, V27.3, V27.4, V27.6 and V27.7), preterm labor (ICD-9-CM code 644.2), multiple gestation (ICD-9-CM code 651) and known or suspected fetal anomaly affecting management of mother (ICD-9-CM code 655). Microsoft Access 2007 and Microsoft Excel 2007 were used to query discharge records and analyze data.⁷

Hospital and physician charges for care for infants conceived using ART/AI at Loma Linda University Medical Center (and other fertility centers) and delivered at this medical center were tabulated by hospital financial administrators and/or departmental financial accountants (for physician charges) for births occurring during 2012 and the first 6 months of 2013. Hospital and physician charges were adjusted for the charges of caring for a 'normal newborn infant', and a ratio calculated to compare similar charges for a late preterm or full-term infant delivered at our facility. The ratio of these two charges provides an estimate of the added cost burden for infants conceived by ART/AI, having a live birth and receiving neonatal care. Length of hospital stay for ART/AI-conceived infants was compared with that of a normal newborn at this center.

Results

In 2009, births in California accounted for 12.8% of all U.S. resident births.⁸ Women in California underwent 18405 ART procedures in 2009, of which 15,953 embryos were transferred, resulting in 7155 pregnancies and 5710 live births, of which 30.1% were multiple births.⁴ Embryo transfer procedures are summarized in **Table 1**, which documents the very low rates of elective single embryo transfer by maternal age in California and throughout the United States.⁴

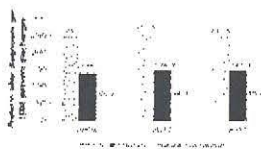
Table 1 - Embryo transfer procedures by maternal age, California and the United States, 2009.

[Full table](#)

Among ART/AI pregnancies there was a 4–5-fold increase in stillbirths identified from 2009 to 2011 compared with women whose pregnancy occurred naturally, whereas women with a history of infertility had a 2–3-fold increase in the rate of stillbirths (**Table 2**). ART/AI conceived pregnancies also experienced increased rates of cesarean section with associated complications and co-morbidities (41% on

average), which were increased four-fold compared with those among naturally conceived pregnancies (10% on average); this rate was increased three-fold among women with a history of infertility but in whom there was a natural conception (30% on average). Mothers undergoing ART or AI had an almost fourfold increase in the rate of preterm labor compared with those with natural conceptions, whereas mothers with a history of infertility experienced preterm labor more than twice the rate of those with natural conceptions (**Figure 1**). Multiple gestations were increased 24–27-fold among women undergoing ART/AI compared with naturally conceived infants, whereas among those with a diagnosis of infertility this was increased ~10-fold (**Figure 2**). The mean maternal length of stay among women receiving ART or AI compared with those with naturally conceived infants was doubled as illustrated in **Figure 3**. A 2–3-fold increase in known or suspected fetal anomalies among ART or AI compared with naturally conceived infants was demonstrated, although among mothers with a previous diagnosis of infertility there was also an increase in known or suspected fetal anomalies (**Figure 4**).

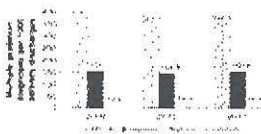
Figure 1.



Preterm labor diagnoses among ART/AI, infertility and natural conception delivery discharges, California, 2009–2011. Source: California Office of Statewide Health Planning and Development, Patient Discharge Data, Public Files, 2009–2011.

[Full figure and legend \(50K\)](#)

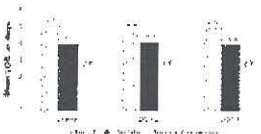
Figure 2.



Multiple gestation diagnoses among ART/AI, infertility and natural conception delivery discharges, California, 2009–2011. Source: California Office of Statewide Health Planning and Development, Patient Discharge Data, Public Files, 2009–2011.

[Full figure and legend \(52K\)](#)

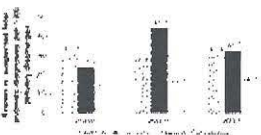
Figure 3.



Mean length of stay (LOS) in days among ART/AI, infertility and natural conception delivery discharges, California, 2009–2011. Source: California Office of Statewide Health Planning and Development, Patient Discharge Data, Public Files, 2009–2011.

[Full figure and legend \(44K\)](#)

Figure 4.



Known or suspected fetal anomaly diagnoses among ART/AI, infertility and natural conception delivery discharges, California, 2009–2011. Source: California Office of Statewide Health Planning and Development, Patient Discharge Data, Public Files, 2009–2011.

[Full figure and legend \(49K\)](#)

Table 2 - Stillbirth diagnoses among ART/AI, infertility and natural conception delivery discharges, California, 2009–2011.

[Full table](#)

Charges for maternal care during the perinatal period for years 2009–2011 are presented in **Table 3**. These costs do not include costs of ART/AI procedures or prenatal care, and are confined to costs incurred during the hospitalization in which delivery occurred. The significantly higher reported costs of perinatal care for ART/AI mothers reflect their frequent admission for preterm labor, prolonged hospitalization for antepartum testing, 'bed rest', medication to suppress preterm labor and the increased rate of operative deliveries in these women. In California, ART contributed to an increase in multiple births that was higher than but not significantly different from those reported nationally.⁴ Data from the CDC also show that California's rates of low birth weight and very low birth weight infants, as well as premature and very premature infants, exceed national averages.

Table 3 - Total charges among ART/AI, infertility and natural conception delivery discharges, California, 2009–2011.

[Full table](#)

Expected source of payment for ART/AI deliveries and deliveries among women with infertility occurring in California from 2009 to 2011 differed considerably from expected source of payment for naturally conceived deliveries. Although private insurance was the predominant source of payment for women receiving ART or AI (94%) and women with a history of infertility (95.6%), Medi-Cal (Medicaid) funding was the most frequent payer source for mothers whose infants were conceived naturally (48.2%); however, in this latter group a nearly equal number of women had private insurance or another third party payer (47.6%).

Hospital charges for the care of 82 infants (excluding 10 extremely premature infants who died on the first day) conceived using ART (79 infants)/AI (three infants) were substantially higher per infant than medical services for the 3465 naturally conceived who delivered as late preterm, early term, full term or post term as singleton infants (**Table 4**) provided care in our 'normal' newborn nursery over the same period.

Hospital and physician services charges for infants born after ART/AI were significantly higher than those charged for 'normal' newborn care. Charges for multiple births were per infant. Hospitalization in the NICU averaged 38.4 days (range 3–138 days) (95% CI 6–87) among ART/AI-conceived infants. There were 17 singletons (half of whom required NICU admission) 27 pairs of twins (with one stillborn, and four deaths shortly after birth) and six sets of triplets (in two sets of triplets death occurred soon after birth). Overall hospital reimbursement averaged 38%, whereas physician reimbursement averaged 32% for ART/AI infants.

Table 4 - Neonatal characteristics and hospital and physician charges for 82 infants born after ART/AI.
[Full table](#)

Discussion

Although the use of ART/AI has enabled many couples to have children, use of these technologies is associated with a substantial impact on perinatal outcomes in terms of stillborn infants, increased use of operative delivery, increased maternal length of hospital stay and maternal costs of care during the perinatal period.⁹ In addition to the cost of achieving pregnancy, ART resulted in increased numbers of multiple, prematurely born and low birth weight infants, also contributing to increased health-care resources. Although some states have mandatory inclusion of ART and AI services in health insurance programs,¹⁰ to date there has not been an estimate of either the total costs incurred or saved when insurance coverage has been made available. In European countries, where ART services are included under national health insurance schemes, the use of elective single embryo transfers is significantly increased, leading to fewer premature, low birth weight infants resulting from ART/AI pregnancies.¹¹

Our data suggest that prior to inclusion of ART or AI services under state health programs, there must be implementation of existing professional guidelines¹² focused on elective single embryo transfer procedures. The goal must be to reduce the human toll in terms of stillborn infants, operative deliveries and low birth weight, premature infants born, so that offering these services becomes more widely available without unnecessarily burdening the limited resources of the health-care system.

Adashi *et al.* have stressed that 'our ultimate, if not immediate, goal is clearly a healthy singleton birth. Let us work together to ensure that the last disabled child has been born'.¹³ Templeton has stressed that single embryo transfer is the only ethical approach for ART specialists.¹⁴ However, as recently summarized by Kulkarni *et al.*, the high incidence of multiple births in the United States remains as a consequence of fertility treatments in women of more advanced age. They estimated that 36% of twin births and 77% of triplet and higher order multiples were attributable to medically assisted conceptions. Among some providers there has been a decrease in the number of embryo transfer of three or more during *in vitro* fertilization (IVF) and a 33% decrease in the proportion of triplet and higher order multiple births attributable to IVF since the peak rates in 1998.¹⁵ However, our data suggest that not all IVF providers in California have adhered to professional guidelines regarding the number of embryo transfers.

Reynolds *et al.* evaluated non-IVF fertility treatments from 1997 to 2000 and found ovarian induction and hyperstimulation as a leading cause of multiples births,¹⁶ and Guzik *et al.*¹⁷ evaluated women who underwent ovarian superovulation and intrauterine insemination and found a large proportion of pregnancies multiple births. It is clear that reducing the rate of multiple embryo transfer must be of the highest priorities. A clinical shift from ovarian hyperstimulation to elective single embryo transfer after IVF is likely to lower the still unacceptably high rate of multiple births with the associated risks of prematurity and low birth weight. Lambert and Mélançon¹⁸ have elegantly argued that 'while couples may choose the level of risk that they are willing to assume when it is a matter of their own health; within the context of ART the future of the child must be considered vulnerable. Protection of the vulnerable is a matter of a physician's moral and ethical responsibility, and physicians are responsible for risk reduction or prevention when future generations are at stake'.

Using 2005 cost data from the Institute of Medicine, of the \$26.2 billion spent on the costs surrounding the birth of a preterm infant, only \$1.9 billion or 7% was associated with maternal delivery services.¹⁹ Using cost estimates (from 2005) and ART birth rates from California in 2009, the costs for maternity care for ART pregnancies were \$192 621 215 compared with \$11 027 105 902 for naturally conceived infants (~2%). Information from the 2011 data set demonstrate an increase in this trend wherein costs for ART/AI maternity care were \$35 767.50 per pregnancy versus \$18 654 for a naturally conceived pregnancy, or a 1.9-fold increase in cost. Hospital and physician charges for the care of ART/AI-conceived infants are multifold greater than the care for a normal newborn. This increase is associated with the large percentage of multiple births, low birth weight and premature infants, several of whom had one or more birth defects (9%).²⁰ Medical costs for ART-conceived infants frequently switched from private or third party payer to state or federal funding after delivery (18.9%), which represents a substantial cost shift to public payers.

Additional costs for maternal care attributable to ART, as well as substantially higher hospital and physician charges for the care for infants delivered after ART/AI, are a growing medical economic concern for Californians and health policy-makers nationwide.²¹ In an era stressing value in health care, it is incumbent on policy-makers to reduce these disproportionate costs by focusing on reducing prolonged antepartum hospital stays and the high number of cesarean sections associated with multiple gestations by encouraging single embryo transfer and developing incentives to do so. Elective single embryo transfer, when appropriate, would assist in reducing these costs by reducing maternal pregnancy and perinatal costs, and also reduce morbidities sustained by mothers because of the high rate of operative deliveries, as well as newborn care, as has been done in other countries.²² There is precedence for this in Sweden and many other European countries.²³ Furthermore, costs of neonatal care would undoubtedly be substantially reduced if singleton infants were born primarily at term gestation.²⁴ The focus of ethical ART service providers should prioritize a pregnancy in which an infant is delivered at full-term gestation. It is doubtful that health insurance companies will be willing to include ART as a covered benefit if the expectation is deliberately skewed toward an outcome that is high risk and outside of professional guidelines. Although the cost of ART services has diminished in states with some form of mandate to include these services, the costs associated with pregnancy and infant outcomes await further analysis.¹⁰

Limitations of this retrospective analysis include reliance on non-federal hospital administrative data in a publicly available data set. The limitation of these data is due to lack of verification or audit of maternal discharge data by an independent auditor for completeness. Hospital charges or physician charges may not necessarily reflect costs outside of California. Furthermore, the ratio of charges to true cost may be different for hospital and physician charges and changes on an annual basis as a result of asymmetric fee schedule increases. The 2009 data regarding neonatal costs are based on 2005 data reported from the Institute of Medicine in 2007 based on national data and may under-represent current costs; extrapolation to 2013 costs would be expected to demonstrate similar proportions in disparate costs for infants born preterm. The ratio of costs for ART-conceived infants to naturally conceived infants reported for 2009 is probably unchanged; however, prematurity, low birth weight (including extremely low birth weight infants) and multiple births are significantly over-represented by infants conceived using ART.²⁴ We understand that charge data from a single large medical center including hospital and physician charges may not be representative of California as a whole, and is limited by small numbers; nonetheless, these charges are not dissimilar from those reported for all of California by Schmitt *et al.*²⁵

In summary, the high proportion of multiple low birth weight infants who are too frequently prematurely born after ART could be substantially reduced if there was a focus on single embryo transfer that would meet a couple's desire to create a family as has been the focus in Sweden and many other European countries. Potential parents must more fully understand the consequences of multiple gestations (even twins) in increasing infant mortality, morbidities and longer term consequences of disabling conditions, including birth defects, which will require ongoing medical or rehabilitative interventions throughout childhood.^{26, 27, 28, 29} Incentives for physicians to continue multiple embryo transfer to achieve a higher rate of 'pregnancy success' within their clinic as reported to the Centers for Disease Control (if reported at all) must be replaced by a broader concern for the children of tomorrow that ideally should be born at full term and healthy.

Conflict of interest

The authors declare no conflict of interest.

References

1. Chandra A, Martinez GM, Mosher WD, Abma JC, Jones J. Fertility, family planning, reproductive health of U.S. women: data from the 2002 National Survey of Family Growth. *Vital Health Stat* 2005; **23**: 1-160.
2. Steptoc PC, Edwards RG. Birth after the reimplantation of a human embryo. *Lancet* 1978; **12**(2): 366. | [Article](#) |
3. Sullivan W. First 'Test-Tube' Baby in U.S., joining Successes Around World. *NY Times* 1981 page 1.
4. Sunderam S, Kissin DM, Flower L, Anderson JE, Folger SG, Jamieson DJ *et al.* Centers for Disease Control and Prevention (CDC). Assisted reproductive technology surveillance-United States, 2009. *MMWR Surveill Summ* 2012; **61**(7 ss7): 1-28. | [PubMed](#) |
5. Mneimneh AS, Boulet SL, Sunderam S, Zhang Y, Jamieson DJ, Crawford S *et al.* States Monitoring Assisted Reproductive Technology (SMART) Collaborative: Data Collection, Linkage, Dissemination, and Use. *J Women's Health* 2013; **22**(7): 571-577.
6. Office of Statewide Health Planning and Development. Patient discharge data file documentation January-December 2009-2011
<http://www.oshpd.ca.gov/HID/Products/PatDischargeData/PublicDataSet/index.html>
Accessed 2013.
7. MIRCAl The basics of MIRCAl Edit Programs for IP E, and AS data. Office of Statewide Health Planning and Development 2007
<http://www.oshpd.ca.gov/HID/MIRCAl/ManualsGuides.html> Accessed 2013.
8. National Vifel statistics Reports **60**(1); 11/3/11.
9. Reddy UM, Wapner JR, Rebar RW, Tasca RJ. Infertility, assisted reproductive technology, and adverse pregnancy outcomes: executive summary of a National Institute of Child Health and Human Development workshop. *Obstet Gynecol* 2007; **109**: 967-977. | [Article](#) | [PubMed](#) |
10. Boulet S Infertility Insurance mandates: Impact on ART use and outcomes, Division of Reproductive Health, August 14, 2013, Presented at Centers for Disease Control and Prevention, Atlanta, Ga. And Bernson D., Insurance Coverage for Infertility Treatments, presented at Centers for Disease Control and Prevention, Division of Reproductive Health Seminar, August 14 2013.
11. McLernon DJ, Harrild K, Bergh C, Davies MJ, de Neubourg D, Dumoulin JC *et al.* Clinical effectiveness of elective single versus double embryo transfer: meta-analysis of individual patient data from randomized trials. *BMJ* 2010; **341**: 6945. | [Article](#) |
12. Practice Committee of Society for Assisted Reproductive Technology; Practice Committee of American Society for Reproductive Medicine. Elective single-embryo transfer. *Fertil Steril* 2012; **97**(4): 835-842.
13. Adashi EY, Ekins MN, Lacoursiere Y. On the discharge of Hippocratic obligations: challenges and opportunities. *Am J Obstet Gynecol* 2004; **190**(4): 885-893. | [Article](#) | [PubMed](#) |
14. Templeton A. Avoiding multiples pregnancies in ART: replace as many embryos as you like-one at a time. *Hum Reprod* 2000; **15**: 1663-1665. | [Article](#) | [PubMed](#) |
15. Kulkarni AD, Jamieson DJ, Honas HW, Kissin DM, Gallo MF, Macaluso M *et al.* fertility treatments and multiple births in the United States. *N Engl J Med* 2013; **369**: 2218-2225. | [Article](#) | [PubMed](#) |

16. Reynolds MA, Schieve LA, Martin JA, Jeng G, Macaluso M. Trends in multiple birth conceived using assisted reproductive technology. United States, 1997-2000. *Pediatrics* 2003; **111**: 1159-1162. | [PubMed](#) |
17. Guzich DS, Carson SA, Coutifaris C, Overstreet JW, Factor-Litvak P, Steinkampf MP *et al.* Efficacy of superovulation and intrauterine insemination in the treatment of infertility. *N Engl J Med* 1999; **340**: 177-183. | [Article](#) | [PubMed](#) | [CAS](#) |
18. Lambert RD, Mélançon MJ. Health of ART babies and the responsibility towards future generations In: Daya S, Pierson RA, Gunby J, eds. *Research Papers in Fertility and Reproductive Medicine: Proceedings of the 18th World Congress on Fertility and Sterility (IFFS 2004)*. Elsevier: San Diego, CA, 2004; 349-352.
19. Behrman RE, Butler AS (eds). *Preterm Birth: Causes, Consequences, and Prevention*. The National Academies Press: Washington, DC, 2007.
20. Kelley-Quon LI, Tseng C-H, Janzen C, Shew SB. Congenital malformations associated with assisted reproductive technology: a California statewide analysis. *J Pediatr Surg* 2013; **48**: 1218-1224. | [Article](#) | [PubMed](#) |
21. Katz P, Nachtigall R, Showstack J. The economic impact of the assisted reproductive technologies. *Nat Med* 2002; **8**(S1): S29-S32.
22. Connolly MP, Hoorens S, Chambers GM ESHRE Reproduction and Society Task Force. The costs and consequences of assisted reproductive technology: an economic perspective. *Human Reprod Update* 2010; **16**(6): 603-613. | [Article](#) |
23. Gadzinowski J, Merritt TA, Jopek A, Kochanski A, Lavery A, Merritt T. *In vitro* babies- medical and legal aspects: a European and North American Perspective. *BioTechnologia* 2012; **93**(1): 9-26.
24. Sazonova A, Källen K, Thurin-Kjellberg A, Wennerholm U-B, Bergh C. Factors affecting obstetric outcome of singletons born after IVF. *Human Reprod* 2011; **26**(10): 2878-2886. | [Article](#) |
25. Schmitt SK, Sneed L, Phibbs C. Costs of newborn care in California: a population-based study. *Pediatrics* 2006; **117**: 154-160. | [Article](#) | [PubMed](#) | [ISI](#) |
26. Wadhawan R, Oh W, Vohr B, Wrangle L, Das A, Bell EF *et al.* Neurodevelopmental outcomes of triplets or higher-order extremely low birth weight infants. *Pediatrics* 2011; **127**: e654-e660. | [Article](#) | [PubMed](#) |
27. Lorenz JM. Neurodevelopmental outcomes of twins. *Sem Perinatol* 2012; **26**(3): 201-212. | [Article](#) |
28. Bodeau-Livinec F, Zellin J, Blondel B, Fresson J, Fresson J, Burguet A *et al.* Do very preterm twins and singletons differ in their neurodevelopment at 5 years of age. *Arch Dis Child Fetal Neonatal Ed* 2013; **98**(8): F480-F487. | [Article](#) | [PubMed](#) |
29. Luu T, Vohr B. Twinning on the brain: the effect on neurodevelopmental outcomes. *Am J Med Genetics Part C: Sem in Med Genetics* 2009; **151C**(2): 142-147.

Acknowledgments

Appreciation is expressed to the hospital financial auditing department of Loma Linda University Medical Center and to Department financial auditors. This study was funded, in part, from a community services grant from Medimmune to the Perinatal Advocacy Committee of Greater Los Angeles.



Position Paper

ETHICAL USE OF ASSISTED REPRODUCTIVE TECHNOLOGIES

ISSUE:

Ethical use of assisted reproductive technologies: a call for greater transparency, reduction of a healthcare disparity and single embryo transfer to improve outcomes for mothers and babies.

BACKGROUND:

The development of Assisted Reproductive Technologies (ART) is credited to the Dr. Patrick Steptoe and Dr. Robert Edwards (a Nobel Prize Recipient) who developed technology leading to the world's first "test-tube baby," a scientific breakthrough that has led to the conception of 5 million babies worldwide (1). In the United States, ART is responsible for approximately 1.4% of all infants born annually (2). While there are many unanswered questions regarding the outcomes of infants conceived outside the womb, ART and related pharmacologic ovarian stimulation has permitted children to be born to many welcoming families who would otherwise be unable to conceive due to infertility.

Infertility and subfertility are defined by various entities as failure to conceive after unprotected intercourse for one year or more (3). There are many factors that contribute to infertility in both women and men. In addition to a variety of medical factors, there are social, economic and personal pressures, as well as life circumstances that contribute to the decision of many woman and men to reproduce later in life. If the decision to delay parenthood is a personal choice, it should be done with a full knowledge and understanding of the consequences of delaying reproduction. Physicians and other health professions should begin to discuss fertility preservation early during an adult's life and help young women and men to understand all options regarding childbearing. (4). Infertility in both men and women contributes to anxiety and grief and should be recognized as a medical issue. It is the ethical responsibility of physicians and society to provide available solutions and offer support to those experiencing this life crisis (5).

There have been considerable medical and ethical concerns about the generally unregulated expansion of ART, including the use of surrogacy, international medical tourism to seek less expensive access to these technologies, and the exploitation of women in less developed countries as gestational carriers for embryos conceived in the U.S. and taken abroad. Because the use of ART is largely unregulated, there is wide variation on how the technologies are used. Although guidelines are available, compliance is purely voluntary and the

transparency of some ART practices has been questioned. A workshop of the Eunice Shriver National Institute of Child Health and Human Development in 2007 regarding Detection, Prevention, and Management of Infertility (6) developed the following recommendations:

1. Emphasis of Assisted Reproductive Technologies should be on the birth of healthy infants primarily using elective single embryo transfer.
2. Counseling of prospective parents using ART should be in a nondirective manner and provided well in advance of any invasive procedures, as well as in a relaxed and unrushed environment.
3. Couples should be informed of treatment risks and pregnancy rates, as well as of adverse pregnancy/birth outcomes for which well-documented outcome data exist (i.e. multi-fetal gestation, number of embryos transferred, congenital anomalies [including imprinting disorders], and other genetic abnormalities [parental risk factors and the use of prenatal diagnosis]).
4. Couples should be informed of maternal risk factors including increased risk for preeclampsia and risks of multi-fetal gestation, including requirement for cesarean delivery among others.

It is estimated that 36% of twin births and 77% of triplet and higher-order multiples in the United States were attributable to medically assisted conceptions. Kulkarni et al recently summarized their findings that the high incidence of multiple births in the U.S. is a consequence of two factors; 1) increased rates of advanced maternal age at delivery and 2) increased rates of fertility treatments. Some providers have begun to recognize this trend and have decreased the number of embryo transfers involving three or more embryos during IVF. These changes have resulted in a 33% decrease in the proportion of triplet and higher-order multiple births attributable to IVF since the peak rates in 1998 (7). Many IVF providers, however, have not adhered to professional guidelines regarding the number of embryo transfers. It is clear that reducing the rate of multiple-embryo transfers must be of the highest priority if we are to successfully reduce the rate of multiple births and the associated risks of prematurity and low birth weight.

Ovarian induction and hyperstimulation are also leading causes of multiple births according to Reynolds and colleagues who evaluated non-IVF fertility treatments from 1997-2000 (8). Guzick and colleagues also evaluated women who underwent ovarian superovulation and intrauterine insemination and found a large proportion of pregnancies resulted in multiple births including twins, triplets, and quadruplets (9). A clinical shift from ovarian hyperstimulation to elective single embryo transfer after IVF is likely to lower the unacceptably high rate of multiple births in women utilizing ART.

Dr. Eli Adashi, former President of the American Gynecological and Obstetrical Society declares that while "alleviation of barrenness [is] a laudable goal .multiple gestation challenge by its very nature is a public health issue," and "our ultimate, if not immediate goal is clear; healthy singleton births." (10). He champions the concept that "the last disabled child should be born" by using artificial reproductive technologies. Canadian ethicists Raymond Lambert and Marcel Melançon have stated that protection of the vulnerable is a physician's moral and ethical responsibility, and that physicians are responsible for risk reduction or prevention when future generations are at stake"(11).

Prospective mothers and fathers may benefit from the experience of others who have undergone ART procedures. George J. Annas, Professor of Health Law, Bioethics and Human Rights at Boston University has suggested the book "Cracked Open" by Miriam Zoll (12), described as a compelling narrative that speaks for a generation of women who, like the author, delayed parenthood only to find themselves unable to conceive a

child using all of the benefits of contemporary reproductive science. As summarized by obstetrician and gynecologist, Dr. Christiana Northup, "the brave new world of ART isn't nearly as rosy as we've all been led to believe." (13).

Law Professor Michele Goodwin at the University of Minnesota and Judy Norsigian have described the "raw and debilitating physical, emotional and spiritual challenges created by deeply personal and life-altering procedures" experienced by some women seeking ART and support the need for additional regulation (14). In addition to the invasive processes involved in conception, the ethical quandary created by a recommendation for fetal reduction and the emotional toll on women and couples may be profound and is incompletely studied. Professor Goodwin asserts there is a "much needed public discourse that could also become the clarion call for regulation of a field of medicine that has thus far unsuccessfully regulated itself."

STRATEGY

1) Pregnant women should receive informed consent before using ART. Note: While it has been argued that infertility itself bestows the additional risks of prematurity and birth defects, it is evident that the use of ART adds to these risks.

- a) Informed consent should be required in every jurisdiction and should communicate information in appropriate language that conveys the relative risk or odds ratios of prematurity, low birth weight, birth defects and imprinting disorders with respect to each procedure including ovarian hyperstimulation, intrauterine insemination (IUI), in vitro fertilization (IVF), or intracytoplasmic sperm injection (ICSI).
- b) The most current data available from peer reviewed research and meta-analysis should be used when conveying relative risks and odds ratios.

2) Prospective parents should receive counsel from a multidisciplinary team prior to initiating ART.

- a) Multidisciplinary teams should include representatives from maternal-fetal medicine, genetics, neonatology and psychology.
- b) Thorough discussion of the potential emotional and economic costs of having a premature and/or low birth weight infant or infant with birth defects should be offered and documented. Grief counseling should be available to address issues related infertility.

3) Prospective parents should be counseled regarding the need for adequate health insurance to assist if the pregnancy results in a child with special needs.

- a) The well-documented higher rate of multi-fetal gestations, premature births, low birth weight infants, and a higher risk for selected birth defects (15, 16, 17) and imprinting disorders (18, 19) often results in substantially increased costs of neonatal intensive care for infants.
- b) This can lead to unforeseen economic burden for parents without adequate insurance coverage.

4) Pregnant women using ART should receive comprehensive obstetric care.

- a) Comprehensive care should include immediate access to specialists in Maternal- Fetal Medicine

b) Proximity to a Neonatal Intensive Care Unit should be ensured to maximize optimal birth outcomes.

5) Insurance companies should pay for evaluations of women and men presenting with infertility. Note: Current access to ART services in most states is primarily for those with sufficient resources to pay out-of-pocket and excludes many from seeking medical help for infertility.

6) Insurance companies should pay only centers that meet professional standards.

a) Professional guidelines, such as those published by the Society for Assisted Reproductive Technology, should be followed by centers receiving third-party payment.

b) This should include the substantial preference for elective single embryo transfer (20).

7) Insurance companies should pay only centers that provide annual reports to the Centers for Disease Control and Prevention. Note: Current reporting of fertility clinic outcomes is voluntary under federal law.

a) Reports should include number of pregnancies per patient, number of cycles required for pregnancy with live birth, infants born per cycle, birth weights, gestational age, multiples or singletons, congenital/genetic abnormalities and additional costs for infants born with special needs.

b) In unique circumstances when more than a single embryo transfer is desired, prior approval from insurance companies should be a requirement for coverage.

8) Prospective parents and surrogates should receive independent legal counsel.

a) Contractual arrangements should be performed prior to in vitro conception embryo transfer.

b) As the procedure for legalization of intended parents is a legal proceeding, ideally the gestational carrier and intended parents should reside in the same jurisdiction and be subject to the same legal due process.

9) Agencies who represent women wishing to be compensated for being a gestational carrier should be governed by State regulations.

a) Financial transactions between intended parents and surrogates should comply with federal and State taxation regulations.

b) All parties should adhere to State privacy rules.

10) "Medical tourism" for the use of surrogacy abroad should be discouraged.

a) Citizens of another country seeking surrogacy in the United States should be discouraged.

b) Surrogacy using a family member may be an acceptable exception.

11) State regulatory agencies who license and provide oversight for collection and use of human tissues should provide the same level of oversight for sperm banks, the selling of human eggs and egg "donation." Note: A bill permitting the selling of oocytes for in vitro fertilization and use in ART or research was recently vetoed by Governor Brown in California. This legislation would have made

human eggs just another commodity to be bought and sold.

CONCLUSIONS

The National Perinatal Association advocates the position that greater public awareness and professional transparency should assist prospective parents in making informed decisions regarding their potential choices in seeking ART as well as their options involving adoption of the many infants already born who are in need of loving parents.

Studies are urgently needed regarding every aspect of ART, including neurodevelopment outcomes, school performance, and differences in the incidence and onset of adult diseases when conceived using ART versus naturally. As with other technologies that may impact the human genome through epigenetic modification, continued research into the influences of emerging technologies on the health and well being of the infants born should be a national priority.

REFERENCES

1. Steptoe PC, Edwards RG Birth After the Reimplantation of a Human Embryo. *Lancet*, 1978; 312(8085): 366.
2. Sunderam S, Kissin DM, Flowers L et al, Centers for Disease Control and Prevention (CDC). Assisted reproductive technology surveillance-United States, 2009, *MMWR Surveill Summ*, 2012; 61(7ss7): 1-23.
3. Habbema JDF, Collins J, Leridon H, Evers JLH, Lunenfeld and teVelde ER. Towards less confusing terminology in reproductive medicine: a proposal. *Hum Repro* 2004; 19(7): 1497-1501.
4. Carolan M, Nelson S. First mothering over 35 years. *Women Birth*, 2007; 20: 121-126.
5. Friese C, Becker G, Nachtigall, RD. Rethinking the biological clock: eleventh- hour moms, miracle moms and meanings of age-related infertility. *Soc Sci Med*, 2006; 63: 1550-1560.
6. Reddy UM, Wapner RJ, Rebar RW et. al. Infertility, assisted reproductive technology, and adverse pregnancy outcomes: executive summary of a National Institute of Child Health and Human Development workshop. *Obstet Gynecol*, 2007; 109: 967-977.
7. Kulkarni AD, Jamieson DJ, Hones HW, Kissin DM, Gallo MF, Macaluso M, Adashi EY. Fertility Treatments and Multiple Births in the United States. *N Engl J Med*, 2013; 369: 2218-2225.
8. Reynolds MA, Schieve LA, Martin JA, Jeng G, Macaluso M. Trends in multiple birth conceived using assisted reproductive technology. United States, 1997- 2000. *Pediatrics*, 2003; 111: 1159-1162.
9. Guzich DS, Carson SA, Coutifaris C, et al. Efficacy of superovulation and intrauterine insemination in the treatment of infertility. *N Engl J. Med*, 1999; 340: 177-183.
10. Adashi EY, Ekins Mn, Lacoursiere Y. On the discharge of Hippocratic obligations: challenges and opportunities. *Am J. Obstet. Gynecol*, 2004; 190(4): 885-893.

11. Lambert R.D., Melançon MJ. Health of ART babies and the responsibility towards the future generation. In: Daya S, Pierson RA, Gunby J, eds. Research Papers in Fertility and Reproductive Medicine: Proceedings of the 18th World Congress on Fertility and Sterility (IFFS 2004). San Diego, CA: Elsevier; 2004: pp. 349-352.
12. Zoll, Miriam. Cracked Open: Liberty, Fertility, and the Pursuit of High-Tech Babies – A Memoir. 2013. Interlink Publishing Group, Inc., Northampton, Mass, 2013.
13. Northrup, Christiana. Advance Praise for Cracked Open: Liberty, Fertility and the Pursuit of High Tech Babies, Zoll, Mirrian, Interlink Publishing Group, Northampton, Mass. 2013, p 1.
14. Goodwin M., Norsigian J. Forward to Cracked Open: Liberty, Fertility, and the Pursuit of High-Tech Babies. By Miriam Zoll, Interlink Publishing Group, Inc., Northampton, Mass, 2013, pp. 13-17.
15. Kelley-Quon, LI, Tseng CH, Janzen C, Shew SB. Congenital malformations associated with assisted reproductive technology: A California statewide analysis. J. Ped Surg, 2013; 48: 1218-1224.
16. Ooki S. birth defects in singleton versus multiple ART births in Japan (2004- 2008). J Pregnancy, 2011: 285-293.
17. Davies MJ, Moore VM, Willson KJ, et al. Reproductive technologies and the risk of birth defects. N Engl J Med, 2012; 130: e1085-1095.
18. Manipalviratn S, DeCherney A, Segars J. Imprinting disorders and assisted reproductive technology. Fertil Steril, 2009; 91(2): 305-315.
19. Owen CM, Segars, JH. Imprinting disorders and assisted reproductive technology. Semin Reprod Med, 2009; 27(5): 417-429.
20. Practice Committee of Society for Assisted Reproductive Technology; Practice Committee of American Society for Reproductive Medicine. Elective single- embryo transfer. Fertil Steril, 2012; 97(4): 835-842.

CONTRIBUTORS

T. Allen Merritt, M.D., MHA, FAAP, Loma Linda University School of Medicine, Loma Linda, CA, Board of Directors, NPA

Raylene Phillips, M.D., MA, IBCLC, FABM, FAAP, Loma Linda University School of Medicine, Loma Linda, CA, Board of Directors, NPA

Mitchell Goldstein, M.D. FAAP, Loma Linda University School of Medicine, Loma Linda, CA, Member NPA

Aide Simonian RNC/NIC, SCM, SRN Chief Executive Office, Perinatal Advisory Committee/Leadership Advocacy in the Community, Tarzana, CA

June-Anne Gold, M.D. FAAP, Medical Genetics, Loma Linda University School of Medicine, Loma Linda, CA, University of Irvine, Irvine, CA

Sherri Garber Mendelson, RNC, PhD, CNS, IBCLC, Mission Hills, CA

Authors for Update:
T. Allen Merritt, MD, MHA

Originated: November 1995
Revised: December 2015

IS A
SURROGATE
A
MOTHER?

COVER STORY

READ THIS FIRST.

FEB. 15 2016 5:00 PM

Is a Surrogate a Mother?

A battle over triplets raises difficult questions about the ethics of the surrogacy industry and meaning of parenthood.

By Michelle Goldberg



Photo illustration by Lisa Larson-Walker. Photos by Thinkstock.

Last year, a 47-year-old California woman named Melissa Cook decided to become a commercial surrogate. Cook is a mother of four, including a set of triplets, and had served as a surrogate once before, delivering a baby for a couple in 2013. According to her lawyer, Harold Cassidy, she'd found it to be a rewarding way to supplement the salary she earned at her office job. "Like other women in this situation, she was motivated by a number of things: One, it was a good thing to do for people, and two, she needed some money," Cassidy says.



MICHELLE GOLDBERG

Michelle Goldberg is a columnist for *Slate* and the author, most recently, of *The Goddess Pose*.

For her second surrogacy, Cook signed up with a broker called Surrogate International. Robert Walmsley, a fertility attorney and part owner of the company, says he was initially reluctant to work with her because of her age, but after she presented a clean bill of health from her doctor. Eventually, Surrogate International matched her with a would-be father, known in court records as C.M.

According to a lawsuit filed on Cook's behalf in United States District Court in Los Angeles earlier this year, C.M. is a 50-year-old single man, a postal worker who lives with his elderly parents in Georgia. Cook never met C.M. in person, and because C.M. is deaf, Cassidy says the two never spoke on the phone or communicated in person, except via email. In May, Cook signed a contract promising her \$27,000 to carry a pregnancy, plus a \$100,000 bonus in case of multiples. In August, Jeffrey Steinberg, a high-profile fertility doctor, used in vitro fertilization to create the triplets.

President Trump has declared war on the press. Help us fight back.

IS A
SURROGATE
A
MOTHER?

Cook with three male embryos that were created using C.M.'s sperm and a donor egg. (According to the gender selection was done at C.M.'s request.) When an egg donor is under 35, as C.M.'s was, the Society for Reproductive Medicine strongly recommends implanting only one embryo to avoid a multiple pregnancy, but some clinics will implant more to increase the chances that at least one will prove viable, they all survived. For the second time in her life, Cook was pregnant with triplets. And soon, the relationship she had with their father would fall apart.

Cook and C.M. are still strangers to each other, but they are locked in a legal battle over both the future children she's going to bear and the institution of surrogacy itself. Because she's come under pressure of the fetuses, Cook's case has garnered some **conservative media** attention. This story, however, is more than the abortion wars. It illustrates some of the thorniest issues plaguing the fertility industry: high-risk multiple pregnancies, the lack of screening of intended parents, the financial vulnerability of and the almost complete lack of regulation around surrogacy in many states.

The United States is one of the few developed countries where commercial, or paid, surrogacy is allowed illegal in Canada and most of Europe. In the U.S., it's governed by a patchwork of contradictory state laws that expressly authorize it. Four states—New York, New Jersey, Washington, and Michigan—as well as the District of Columbia prohibit it. In the remaining states, there's either no law at all on commercial surrogacy or it's allowed with restrictions.

California is considered a particularly friendly place for surrogacy arrangements. In 1993, a California Supreme Court ruling, *Johnson v. Calvert*, denied the attempts of a gestational surrogate named Anna Johnson to assert maternal rights. (A gestational surrogate is one like Cook who has no genetic relationship to the fetus carries.) What mattered in determining maternity, the court ruled, were the intentions of the various parties at the time of the pregnancy: "Because two women each have presented acceptable proof of maternity, we do not think this case can be decided without enquiring into the parties' intentions as manifested in the surrogacy agreement," the court said. It was a victory for Walmsley, who represented the couple who'd hired Johnson as their

The United States is one of the few developed countries where commercial, or paid, surrogacy is allowed—it is illegal in Canada and most of Europe.

A 2012 California law, which went into effect this year, codifies procedures for surrogacy agreements; among other things, it specifies that surrogates and intended parents must have their own lawyers. If a contract is executed in accordance with the law, then a gestational surrogate relinquishes her claim to legal parenthood.

"Surrogacy's been distinguished as something completely different from adoption," says Lisa Ikemoto, a UC Davis School of Law professor who specializes in reproductive rights and bioethics. Unlike in adoption, there's no legal screening of intended parents. A pregnant woman who offers to give up her child for adoption can reconsider her decision; in California, a pregnant surrogate cannot. To a large extent, the law "puts a lot of trust in a surrogate to ensure that these things are carried out appropriately," Ikemoto says. "The industry is very industry-friendly, and by 'industry,' I'm referring to the fertility industry."

In California, that industry is known for pushing boundaries. It is the state that gave us the so-called *Cady* case, where Nadya Suleman, who gave birth to octuplets in 2009 after her fertility doctor implanted her with 12 embryos. In 2009, the Modesto-based surrogacy agency SurroGenesis was revealed to have defrauded clients of millions of dollars, leaving some intended parents unable to pay the surrogates who were carrying their children. The *New York Times* reported that one surrogate, pregnant with twins and confined to bed rest, received an eviction notice after the couple who had hired her failed to pay her for most of her pregnancy.

IS A
SURROGATE
A
MOTHER?

Three years later, in 2012, a prominent California surrogacy broker named Theresa Erickson was sent to prison for leading an **international baby-selling ring**. Erickson, a former board member of the American Association of Surrogates, recruited surrogates and sent them to Ukraine, where they were implanted with embryos donated eggs and sperm. She put the resulting babies up for adoption, telling prospective parents that they were the result of surrogacies in which the original intended parents had backed out. Erickson collected between \$100,000 and \$150,000 for each baby. After she was sentenced, she told NBC San Diego that her case was the “tip of the iceberg” of a corrupt industry.

Even when it's not corrupt, the industry often tests the limits of bioethics. Steinberg, the doctor who performed Cook's embryo transfer, was last in the news for marketing embryo screening for hair, eye, and skin color. “This is cosmetic medicine,” he told the *Wall Street Journal*. “Others are frightened by the criticisms, but we have no problems with it.” He was a pioneer in the use of IVF for sex selection, and his clinic draws clients from countries around the world where the practice is banned.

“We don't have good oversight of the whole fertility industry,” says Marcy Darnovsky, executive director of the Center for Genetics and Society in Berkeley, California, and a longtime women's health advocate. “It's underregulated, and we need to be taking that really seriously. California is a surrogacy-friendly state that it's doing surrogacy the right way. But there have been enough problems in California that clearly, it's not right.”

* * *

From the beginning, the arrangement between Cook and C.M. appears to have been plagued by miscommunication. Cassidy acknowledges that Cook only gave a cursory read to the 75-page surrogacy contract before signing it. Walmsley of Surrogacy International drafted the contract; he is also serving as C.M.'s attorney at the time, Cook was being represented by a lawyer named Lesa Slaughter, paid for by C.M.) Cook contends that she didn't know about the contract's provision, common in surrogacy agreements, allowing C.M. to request a reduction, in which one or more of the fetuses in a multiple pregnancy is aborted. (In reporting this story, Cassidy had multiple conversations with Cassidy and Walmsley, but neither allowed me to interview their clients.)

According to Cook's lawsuit, before the embryo transfer, C.M. assured her via email that he could accept responsibility for all the children that might result. But while C.M. had been prepared for twins, Cook wanted triplets. Indeed, her suit says, soon after her pregnancy was confirmed, it became clear that C.M. had exhausted his savings, and wasn't sure he could care for more than one baby.

The surrogacy contract calls for Cook to rely on her own insurance to pay for most of her obstetric care during pregnancy, while C.M. was responsible for fees charged by Steinberg's clinic, the Fertility Institutes. Cassidy quotes an email that C.M. allegedly sent to the clinic on Sept. 17, saying, “Please try to make her visits because I get a bill that costs me a lot of money. ... It causes me financial problems not to be able to afford maybe even twins that worries me so bad for real.” The next day, the lawsuit contends, C.M. emailed Cook, “I never anticipated something such worse like draining my finances so fast. ... I do not want to abort twins. I felt that is such possible to seek aborting all three babies. I do not want to affect [Cook's] health. I do not have more money in the bank, and my job does not pay great biweekly.”

Cook was extremely upset by what she was hearing from C.M. “You need to make a decision if you want to have these babies so that I know what to expect,” she wrote to him. He responded that he wanted twins. A few days later, the lawsuit says, he instructed Cook to abort one of the fetuses. “I would decide to select – reduce – three babies, soon as I need to tell my doctor and my lawyer before 14th to 17th weeks,” he emailed her.

President Trump has declared war on the press. Help us fight back.

IS A
SURROGATE
A
MOTHER?

Cook offered to raise one of the babies herself, but C.M. suggested that instead he'd put one up for adoption.

Cook, however, is opposed to abortion. According to the lawsuit, she raise one of the babies herself, but C.M. rejected that idea, and suggested instead he'd put one up for adoption. Hoping to persuade Cook to rel write her a letter, later quoted in the *New York Post*, threatening he financial damages for breach of contract if she didn't consent to a red you know, his remedies where you refuse to abide by the terms of the are immense [and] include, but are not limited to, loss of all benefits u agreement, damages in relation to future care of the children [and] m associated with any extraordinary care the children may need." Triple are dangerous for mothers and babies alike—according to the American

Reproductive Medicine, in 20 percent of triplet cases, at least one of the children will be born with a n term disability. Walmsley's letter suggested that Cook could be liable for a lifetime of serious medical

As relations between Cook and C.M. worsened, she came to doubt his ability to care for the children she was going to have. Her lawsuit quotes a note that Walmsley wrote to Slaughter, the lawyer who r Cook when she signed the contract: "Triplets for a married couple is hard enough. Triplets for a single be excruciating; triplets for a single parent who is deaf is—well beyond contemplation." According to initially assumed that Surrogacy International had done some sort of investigation to assess C.M.'s ab and was dismayed when she realized that wasn't the case. As Walmsley concedes, Surrogacy Internat criminal background checks on its clients, but doesn't evaluate them beyond that; no one ever visited Georgia home. "C.M. is not capable of raising three children by his own admission and may not be cap raising even one or two children," Cook's lawsuit states.

Facing financial ruin and unsure what would become of the triplets she was carrying, Cook went publ reached out to the anti-surrogacy activist Jennifer Lahl, president of the conservative Center for Bioet Culture and director of the documentary *Breeders: A Subclass of Women?* Lahl, in turn, put her in touch Post, which eagerly reported on the story of a woman fighting a coerced abortion. Cook also contacte who represented surrogate Mary Beth Whitehead in the landmark 1987 *Baby M* case, when Whitehead international headlines fighting for custody of the baby girl she'd given birth to.

To Cassidy, a devout Catholic who once studied for the priesthood, surrogacy flouts natural law. Some argument on Cook's behalf is grounded in a romantic defense of motherhood that is unlikely to sway : don't share his social conservatism. "The cherished role of a mother and her relationship with her child moment of life, has intrinsic worth and beauty; that relationship, its unselfish nature and its role in the the race is the touchstone and core of all civilized society," he writes in the lawsuit. "Its denigration is denigration of the human race." Surrogacy, Cassidy writes, reduces a woman to a "breeding animal" r "whole person who bonds, loves, has emotions or a deep sense of moral, ethical, and emotional conn children she carries and bears."

One needn't venerate traditional motherhood, however, to be troubled by Cook's situation. There are fundamental feminist issues at stake. Coerced abortion is as much a violation of reproductive autonor pregnancy. And whether or not one believes that surrogacy should be legal, Cook's predicament show protections there are for surrogate mothers when their agreements go bad.

President Trump has declared war on the press. Help us fight back.

IS A
SURROGATE
A
MOTHER?

While Cook has continued to receive the monthly payments she is owed for her surrogacy, Walmsley his client would be within his rights to stop them. "It's becoming ever more difficult for him to literally she's sitting here suing him," Walmsley says. "He might be a bigger man than me, because if somebody me and trying to take away my kids, I would have a difficult time sending them money."

It's also unclear who is going to pay Cook's medical bills. Her insurance carrier, it turns out, does not surrogate pregnancies as it does other pregnancies, so she must reimburse the insurance company for expenses, up to the total compensation she's receiving as a surrogate. (Cassidy maintains that Cook understand this when she signed the contract.) Walmsley says his client is covering the reimbursements. Cassidy insists he has not. According to the lawsuit, the insurance company, seeking to recoup its pay issued a lien against Cook's surrogacy fees.

Cook's doctor recently instructed her to stop working and avoid stress. She's developed gestational diabetes according to Cassidy, may be put on bed rest. She is currently living on disability insurance. "Melissa is facing a high risk pregnancy which makes the compensation under the contract illusory," says the lawyer. "There is a chance that she will be uncompensated."

For both sides, however, the heart of the conflict is about custody, not money. With Cook entering her third trimester, the question of abortion has become moot. Barring a stillbirth, there will be three babies. (Cook is 32 weeks in March, which is considered full term for triplets.) Now the dispute is about what happens next. According to Walmsley, C.M. now intends to raise all of them, and it's immaterial that he was worried he'd cope. "Let's be real here," Walmsley told me. "Am I prepared to raise triplets? Probably not. Are you? It doesn't mean, he says, that C.M. would separate them. "He wants to have his three children and go on with his life," Walmsley says. "That's his goal, that's his desire, and unfortunately it's become a nightmare."

Cassidy says Cook sympathizes with C.M., but she doesn't feel she can turn over the children to him. She is seeking custody of one of them—the one that C.M. wanted her to abort, referred to as Baby C in the complaint. Cassidy is seeking a hearing to determine the best interests of the other two, whether that means living with them or with her.

For both sides, however, the heart of the conflict is about custody, not money.

Under current California law, Cook has little chance of successfully asserting her parental rights. So Cassidy is hoping to take on the law itself. On Feb. 12, she filed a case in federal district court asking, among other things, for a ruling that California's surrogacy law violates Cook's rights, as well as those of the other two children under the Constitution's equal protection clause. Cook, he argues, has a fundamental right not to have her parental claims severed unilaterally. Furthermore, Cassidy maintains, equal protection means that the children's custody should have their custody arrangements decided not by a business contract but by an inquiry into their best interests.

Meanwhile, in a separate legal battle, C.M. has filed suit in family court asking to be declared the sole parent of the children Cook is carrying. Cassidy has filed an answering motion, though these documents, unlike the lawsuit, are sealed.

Walmsley says that he's outraged by what Cook is putting his client through. No one, he argues, has the right to challenge C.M.'s fitness as a father: "The day we are telling somebody they are not a parent because of some disability, or they don't meet somebody else's economic expectations, is going to be a cold day in our society." C.M., he says, "has been going through this process for a matter of years, and he's doing this because he desperately wants to have children and a family. That's why he's doing it. And then suddenly somebody says, 'I'm going to try to undermine you and deprive you of having your children and your family?'"

President Trump has declared war on the press. Help us fight back.

IS A
SURROGATE
A
MOTHER?

Most experts think that Cook will have a hard time convincing any court to give her the kids. Cassidy successfully made arguments for the maternal rights of surrogates in New Jersey, but that is much firmer terrain than California. "Who the parents are in this case turns on the surrogacy agreement," says Joa Grossman, a professor of family law at Hofstra University and co-author of *Inside the Castle: Law and Family in Century America*. "If it's enforceable, those are his kids. If he wants to take all three of them and give one for adoption, there's no reason he can't do that."

Legally, the court cannot weigh the children's best interests when deciding if Cook is their legal mother. Interest arguments only come into play in a custody dispute between people who are already recognized parents. "You're either a parent or you're not a parent," says Walmsley. "You don't determine whether you're a parent based on the child's best interest or your economic well-being. Otherwise, I'm going to go to court. I'm going to start yanking kids from anyone who is below a certain economic level."

* * *

Cassidy's quest to assert Cook's maternal rights may be quixotic. But for him, this is a profound fight about the meaning of family. It's about whether society values business contracts over the sacred bond between a parent and child. That bond is at the core of his quirky social conservatism, which has led him to work against abortion, also, in some cases, against adoption, an institution usually beloved by pro-lifers.

The court cannot weigh the children's best interests when deciding if Cook is their legal mother.

Part of the legal team that helped free the wrongly imprisoned boxer "Hurricane" Carter, Cassidy first ventured into family law working on behalf of women who regretted giving up children to adoption. While handling cases for women who regretted giving up children to adoption, he says, he started hearing from women who mourned their abortion. "When I was doing the work for the women who lost children to adoption, there were a few instances where I could actually get a baby back," he says. "When women were calling me with incidents in which they were coerced into abortion, I would try to get the baby back. They killed the baby." *Mother Jones* published a 2011 feature on Cassidy's role in the anti-abortion movement: "For almost two decades, Harold Cassidy quietly advanced the pro-life cause by giving legal shape to the stories of women who terminated the pregnancy and came to regret it."

It was Cassidy's work for adoptive mothers that led him to represent Mary Beth Whitehead. In 1986, a high school dropout and mother of two, gave birth to a baby girl she had conceived through artificial insemination with William Stern, whose wife had multiple sclerosis and was afraid to risk a pregnancy. Whitehead was paid \$10,000, but once the baby—her biological daughter—was born, she felt fiercely attached. At first, she hid the girl, but then she showed up at the Sterns' house, saying that she was suicidal and begging to take the baby just a few days. The Sterns gave in, and Whitehead fled to Florida with the baby; she hid out there for months before police found her and took away the infant, known as Baby M.

An epic custody fight followed—the first contested surrogacy case in American history. According to *the Times*, Cassidy framed his argument as "a defense of motherhood and sought to show that the forced separation of mother and child would lead to emotional trauma for both." Ultimately, William Stern won custody, in part because of questions about Whitehead's mental stability—she'd threatened to kill the baby if she could not have it. But the New Jersey Supreme Court unanimously invalidated the surrogacy contract, calling the payment to a surrogate mother "illegal, perhaps criminal, and potentially degrading to women." Whitehead was named the legal mother and granted visitation rights, and Stern's wife's adoption of the baby was voided.

President Trump has declared war on the press. Help us fight back.

IS A
SURROGATE
A
MOTHER?

"Under the contract," the court said, "the natural mother is irrevocably committed before she knows her bond with her child. She never makes a totally voluntary, informed decision, for quite clearly any decision to the baby's birth is, in the most important sense, uninformed, and any decision after that, compelled by an existing contractual commitment, the threat of a lawsuit, and the inducement of a \$10,000 payment, is not totally voluntary." The court also criticized the contract's "total disregard of the best interests of the child, not the slightest suggestion that any inquiry will be made at any time to determine the fitness of the surrogate, the custodial parents, of Mrs. Stern as an adoptive parent, their superiority to Mrs. Whitehead, or the effect of not living with her natural mother." Commercial surrogacy remains illegal in New Jersey.

The practice of surrogacy has changed significantly since the Whitehead case. The first successful gestational surrogacy—a surrogacy using a third-party donor egg—happened in 1985, the same year Baby M was born; then, gestational surrogacy has become the norm, eliminating the need to take a child from his or her natural mother. Even in states with liberal surrogacy laws, a traditional surrogate like Whitehead might be able to retain parental rights, but a gestational surrogate cannot. Susan Appleton, a professor at Washington University School of Law, says of Cook, "Women in her position are not presumptively legal mothers."

Cook's lawyer argues that the mother-child bond is not dependent on genetics.

This presumption is at the heart of Cassidy's challenge. He argues that the child bond is not dependent on genetics. "The bonding process between a pregnant mother and the children she carries during the nine months of pregnancy is the same physical process and experience, whether or not the mother is genetically related to the children," he writes in the lawsuit. "The bond is both psychological and physiological. It cannot be wished away and is not prevented or diminished by the existence of a written surrogacy contract."

Cassidy made an argument like this, with partial success, in a major 2009 case dealing with so-called "unpaid" gestational surrogacy, *Robinson vs. Hollingsworth*. That case, also in New Jersey, involved a gay couple, Donald Robinson Hollingsworth and Sean Hollingsworth, and Donald's sister, Angelia Robinson. Robbi, a twin girl created with embryos made from donor eggs and her brother-in-law Sean Hollingsworth's sperm, was born in 2005, they were turned over to their fathers. While Robinson was initially able to maintain her relationship with her brother and his husband soon deteriorated. She claimed that her brother—via his accounting firm—had coerced her into volunteering for the surrogacy. After returning to the care of her childhood, she denounced homosexuality. In 2007, she sued for custody.

Ultimately, she lost. But Cassidy succeeded in having her declared the legal mother of the twins, and a judge to decide the case on the basis of the best interests of the girls instead of the stipulations of the contract. (Robinson retained visiting rights.) That, however, was in New Jersey. Obtaining a similar ruling in California, in light of the 2012 law, will be much more difficult. If Cassidy is able to do it, it will impact the commercial surrogacy nationwide, making it far more insecure for intended parents, who won't be able to retain custody of the children they create.

For some who long for children, this would be devastating. "When I was in law school, I learned that it was bad law," says Diane Hinson, founder of Creative Family Connections, a law firm and surrogacy broker. "I hope that a case like this doesn't result in that, because there are so many people who couldn't build a family without gestational surrogacy."

President Trump has declared war on the press. Help us fight back.

**IS A
SURROGATE
A
MOTHER?**

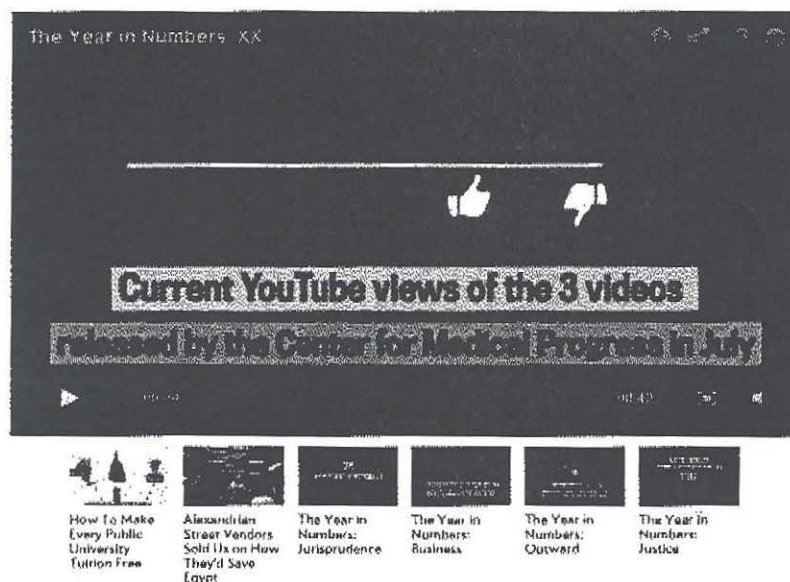
Yet even those who believe that commercial surrogacy should be legal see problems with leaving it to the discretion of the market. "The question for me is to what extent should we be using contracts to deal with conceptions, pregnancy, delivery, and transferring of parental rights, especially in a commercial setting like surrogacy. "Maybe we're going a little too far."

Even those who believe commercial surrogacy should be legal see problems with leaving it to the discretion of the market.

Art Caplan, who directs the division of medical ethics at NYU's Langone Center's Department of Population Health, suggests that, as in an adoption, prospective parents hiring a surrogate should be subject to in-person screening. "You're going to permit surrogacy for money, there ought to be a home visit with adoption to make sure the person has a home, isn't a childless person with no resources to raise a kid, has made provisions for what will happen to the child if she dies during the pregnancy or after," he says. Caplan also suggests that there should be a process allowing surrogates to assert parental rights in certain circumstances—if, for example, the intended parent's competency is in question, or if he or she commits a crime. "I can imagine a lot of situations where the surrogate might want to restore legal status to the surrogate in the best interests of the child," he says.

Right now, that mechanism doesn't exist. Walmsley argues that it shouldn't because it would endanger surrogates by burdening them with unwanted legal responsibility for the children they carry. "I don't want intended parents causing these children to be conceived and then saying, 'We changed our minds,'" he says. "We would want to make it wasn't for [C.M.]. He put this together, he used his sperm, he got the eggs, he put this into motion, he should be the sole person that bears the responsibility all across the board."

Whether you agree with this depends on your understanding of what it means to be a parent. It depends on whether you believe that pregnancy can ever be merely a service instead of a relationship. Cassidy insists it cannot. "A woman can't just turn a child over to anybody," he says. "You just can't do it." But Cook signed a contract, and she may have to.



Correction, Feb. 19, 2016: This article originally misstated that Melissa Cook's surrogacy fee was \$33,000, plus a bonus in case of multiples. It was \$27,000, plus a \$6,000 bonus for multiples.

President Trump has declared war on the press. Help us fight back.

IS A
SURROGATE
A
MOTHER?

XXfactor WHAT WOMEN REALLY THINK NOV. 15 2016 4:11 PM

Fewer Americans, Red and Blue, Are Spanking Their Children

By Elissa Strauss



Parents across all income levels are less likely to spank their misbehaving children than they were three decades ago.

Thinkstock/Naduzhja1906

While the outcome of the recent election has many anxiously examining the apparently widening chasm among Americans, new research suggests that when it comes to attitudes toward child-discipline, our country is slowly uniting.

According to a new article recently published in the journal *Pediatrics*, there was a decrease in the use of physical discipline and an increase in enthusiasm for timeouts among mothers of all socioeconomic backgrounds, from 1988 to 2011. Researchers Rebecca M. Ryan, Ariel Kalil, Kathleen M. Ziol-Guest, and Christina Padilla relied on data from four national studies conducted during this time period, each of which

President Trump has declared war on the press. Help us fight back.

IS A SURROGATE A MOTHER? asked mothers how often they had spanked their kindergarten-aged child in the past week and what, hypothetically, they would be most likely to do if their children were to misbehave. Choices included physical discipline, timeout, and talking to the child.

CONTINUE READING

FOLLOW SLATE

SLATE ON IPHONE ANDROID KINDLE

REPRINTS

ADVERTISE WITH US

ABOUT US
CONTACT US
WORK WITH US

USER AGREEMENT
PRIVACY POLICY
FAQ

FEEDBACK
CORRECTIONS

Slate is published by The Slate Group, a Graham Holdings Company. All contents © 2016 The Slate Group LLC. All rights reserved.

President Trump has declared war on the press. Help us fight back.