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Moral Luck And The Ethics Of The Rising Cesarean Rate

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Moral Luck and The Ethics of the Rising Cesarean Rate

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ABSTRACT

One in three pregnant women delivering in the United States will undergo a cesarean section, at a rate of 32.8% and climbing. The cesarean section is associated with considerable excess risk of morbidity and mortality to infant and mother, including a four-fold risk of maternal death relative to vaginal birth. As the gatekeepers of surgical birth, obstetricians have an ethical and scientific imperative to minimize the number of non-indicated cesarean births. And yet, cesarean rates are responsive to fear of malpractice litigation, physician time-constraints, and patient payer-type. These findings, while ethically troublesome, point to a promising new direction for controlling the rising cesarean rate: looking to the subjective decision making processes preceding the cesarean decision. The purpose of this paper is to utilize the concept of moral luck to highlight the potential logical and ethical fallacies of the decision-making processes leading to cesarean delivery. Incentives to trade unknown risk for known risk compromise maternal and infant health—interventions occur even when substantial evidence suggests “doing nothing” increases likelihood of healthy vaginal birth. Protecting a non-interventionist model of birth is critical towards the public health goal of reducing the cesarean rate and improving maternal and infant outcomes.

RISING CESAREAN RATE AS AN ETHICAL DELEMMIA

“The surgical removal of a baby from the womb of its mother is an act that exudes deep philosophical and cultural conflict.”¹

If cesarean section is indeed a deep philosophical and cultural conflict, we might wonder who the contenders were and when we missed the fight. Cesarean section is major surgery, but the extremity of this event is neutralized by its commonality. Cesarean section is the most common operating room procedure in US hospitals.² One in three pregnant women delivering in the United States will undergo a cesarean section, at a rate of 32.8% and climbing.³ Healthy People 2020 sets national healthcare targets and calls for a 10% reduction in the cesarean rate.⁴

For many women, the potential harms of the cesarean section may exceed the benefits. Cesarean section is associated with a higher risk of maternal mortality and morbidity than vaginal delivery, including a four-fold risk of maternal death relative to vaginal birth,⁵ five- to ten-fold increase in infections of the endometrium, urinary tract, or surgical wound,^{6 7 8} and a four-fold increase in relative risk of pulmonary embolism and stroke when controlling for preeclampsia.^{9 10} Cesarean sections require about one-third more hospital time, three to four times as many weeks for recovery, and are associated with greater overall patient dissatisfaction with the birth process when controlling for infant outcomes.^{11 12 13 14}

There are also multiple known health risks to the infant associated with cesarean delivery compared to vaginal birth, including a four-fold risk of death before hospital discharge (these rates do not differ for planned versus unplanned cesareans),¹⁵ a four-fold

risk for persistent pulmonary hypertension, a three-fold risk of transient tachypnea and combined respiratory problems,^{16 17 18} and an increased risk of developing asthma.^{19 20 21 22} Infants born by cesarean section are less likely to be breastfed than babies with spontaneous vaginal births, compromising mother-infant bonding and long-term infant health.²³ Finally, cesarean delivery renders subsequent surgical deliveries far more likely: the rate of vaginal births after cesarean is less than 10%.²⁴ Hospital charges for a cesarean delivery are almost double those for a vaginal delivery, imposing significant costs.²⁵

The U.S. cesarean rate has increased by 50% since 1996. Many theories have been offered to explain this trend, including a decrease in vaginal births after cesarean delivery (VBAC), an increase in cesarean deliveries performed for maternal request, increased number of expectant mothers at high risk (e.g. due to advanced maternal age, obesity, or other risks), the obstetrical medico-legal environment, and changes in provider practice patterns. However, studies examining differences in medical risk factors for expectant mothers, including obesity, have not concluded that changes in maternal risk profile fully explains the increasing cesarean delivery rate.^{26 27 28 29} Maternal request for elective cesarean does not appear to be a main driver of the increased cesarean rate.³⁰

A steadily increasing primary cesarean rate, in addition to a decreasing VBAC rate, is driving the cesarean rate upwards. A recent study by Barber et al. examined physician-documented indications for primary cesarean delivery at a major academic hospital from 2003 and 2009, where primary cesareans accounted for a 50% increase in the cesarean rate. Among primary cesarean deliveries, more *subjectively* defined indications such as non-reassuring fetal heart tracings, labor arrest disorders, and suspected macrosomia *increased*; whereas more *objectively* defined indications such as malpresentation, maternal-fetal conditions, and obstetric conditions remained *stable*.³¹ These findings offer a promising new direction for controlling the rising cesarean rate: looking to the subjective decision making processes that precede the cesarean decision.

Three of the most common subjective indications for primary cesarean section—labor arrest, macrosomia, and non-reassuring fetal heart tracings—are associated with high rates of diagnostic error and face perpetual scrutiny by the medical community and popular media for defying evidence-based practice standards.^{32 33 34} Freidman’s curve, a graphic representation of the hours of labor plotted against cervical dilation in centimeters, is used to detect labor complications, yet can be used inappropriately in cases where pressures for a bed are strong or when physicians are unwilling to allow more time for labor.³⁵ In many cesarean cases the waiting period before diagnosing labor arrest is shorter than ACOG recommendations, which suggests that clinical impatience plays a role in decision-making.³⁶

Regarding macrosomia, a recent study in the 2005 American Journal of Obstetrics and Gynecology notes, “Due to inaccuracies, among uncomplicated pregnancies suspicion of macrosomia is not an indication for induction or primary cesarean delivery.”³⁷ Suspicion of macrosomia for the vast majority of women is a “medically and economically unsound”³⁸ indication for cesarean delivery.

Finally, the poor positive predictive power of using EFM to predict adverse neonatal outcomes in comparison to intermittent monitoring is well established. While some studies report a lower incidence of neurological complications with EFM use, the latest research has failed to demonstrate long-term neurological benefits of EFM.³⁹ In

comparison to intermittent monitoring, EFM is not associated with improved Apgar scores, decreased infant mortality, or incidence of cerebral palsy, but is highly associated with increased cesarean rates.^{40 41 42} In the aforementioned paper by Barber et al, the largest proportion of increase in the primary cesarean rate was attributable to non-reassuring fetal heart status at 32%.⁴³

Physician practice style, rather than maternal and fetal risk profile, may be the greatest predictor whether a low-risk woman will deliver vaginally—some investigators have dubbed this phenomenon the “The Physician Factor.”^{44 45} Cesarean delivery rates exhibit large variation between and within states, regions, hospitals, and providers, ranging from less than 10% to over 60%⁴⁶. This variability persists even when maternal risk factors are roughly identical, buttressing the evidence that the rising cesarean rate is driven by factors unrelated to maternal risk but rather individual physician characteristics.

Cesareans are responsive to method of reimbursement,^{47 48 49} physician time-demands,^{50 51 52} and to physicians' fear of medical malpractice lawsuits.^{53 54 55} At the aggregate level, these associations are highly worthy of ethical critique and suggest that risk to the physician, in addition to risk to the patient, factors into the cesarean decision. At the level of the individual obstetrician, it is rarely possible to prove that a cesarean was performed for non-medical reasons—neither fear of malpractice, physician time-demands, nor method of reimbursement are sufficient or transparent indications for cesarean section. This amounts to an ethical ecological fallacy, whereby ethically troublesome associations at the ecological level do not apply at the individual level—or at least, there are rarely opportunities to prove these associations on a case-by-case basis.

The purpose of this paper is to utilize the concept of moral luck as lens through which to view the decision tree leading to a cesarean delivery, highlighting the potential logical and ethical fallacies of the “subjective” cesarean decision. Indications for cesarean are often subjective and reveal flawed risk assessment processes biased towards the value of control. Without better diagnostics for determining indicated versus non-indicated cesareans, and without mechanisms for holding obstetricians accountable for performing non-indicated cesareans except in the cases where consequences are severe enough to incur malpractice lawsuit, there is little hope for controlling the cesarean rate. Current risk incentives are set up as though birth were a pathological process with a default bad outcome; when in reality, it is a natural process with a default good outcome. This results in a misalignment of perceived and actual risk; obstetricians and patients are pushed to make more interventions in the interest of trading known for unknown risk. Further inquiry into how luck and risk relate to the birth process and into parent/obstetrician decision-making will illustrate why the current risk/reward model is counterproductive and harmful.

MORAL LUCK AND MEDICAL ETHICS

The moral luck paradox is about luck in outcomes or consequences, with the question of what kinds of consequences we are morally responsible for given that how events unfold, our circumstances, and even our character are shaped by factors outside our control. The moral luck debate, begun by Williams and Nagel in 1976 and known to most

mainstream philosophers, is still comparatively unknown in medical ethics,⁵⁶ but it offers a helpful perspective for clinical ethicists and healthcare professionals.

The dominant virtue-based ethics system fails to incorporate the important role of chance in creating individual ethical narratives, particularly in medicine. According to Nussbaum “the very attempt to evade the ravages of luck in ethics shows that we live in a sort of ethical Dark Ages, despite our pretensions to enlightenment and modernity.”⁵⁷ Moral luck theory, far from absolving clinicians from responsibility over seemingly uncontrollable outcomes, more honestly reflects the reality that the perceived risks of future outcomes have a powerful impact on clinical decision-making.

A moral luck framework is a suitable ethical lens for obstetrics in that it provides room for the significant role of chance in how childbirth unfolds. Even for women who have given birth previously, it is hard if not impossible to predict how a host of risk-factors will play out during the labor and delivery process: for example, how fast or slowly a woman’s labor will progress or how the infant(s) will present before delivery. In situations when the actual risk to mother and infant are uncertain and evidence suggests that a non-interventionist model results in better outcomes, physicians and patients consistently choose to “play the game safe” by opting for cesarean section. For a low-risk woman, there are considerable excess risks associated with cesarean section relative to vaginal birth; in some cases the cesarean is not necessarily the safe option, merely the one in which resultant luck is primarily a matter of conscious choice instead of unconscious bodily processes.

FROM BRUTE LUCK TO OPTION LUCK

Two kinds of luck underlie moral luck theory— *option luck* and *brute luck*. Option luck is a matter of how risks fall out that are a result of deliberate choices—for example, in gambling, when individuals take risk in full knowledge of the possible consequences. Brute luck is a matter of how risks fall out that do not result from deliberate choices or gambles.⁵⁸

Birth, without intervention, epitomizes the concept of brute luck—it unfolds not as a function of choice but unconscious bodily processes. Every intervention during childbirth represents a form of option luck, as a means of bypassing the forces of brute bad luck (with its unknown probabilities) in favor of option luck (with the set of “known” probabilities based on best evidence).

Outcomes influence who and how we hold people morally accountable for their actions, regardless of the degree to which luck plays a role. A birthing woman is particularly vulnerable to brute bad luck, and by extension so are her health care providers. Adverse events during childbirth may not be foreseeable or preventable. Two women with seemingly identical risk profiles can have vastly different birth outcomes—one might deliver vaginally without complications while another dies, for example as a result of postpartum hemorrhage. The obstetrician caring for a patient with adverse outcomes is subject to harsher moral and at least legal judgment, regardless of whether that adverse outcome was preventable. The moral integrity of physicians and patients depends on assuming responsibility even in cases where responsibilities outrun control; however, this represents a logical and ethical fallacy in that, by assuming full responsibility for birth progression and

outcomes, patients and physicians consign it to an interventionist model that rewards control and punishes inadequate monitoring and failure to respond to slight or altogether unforeseeable risk.

Many factors motivate the substitution of brute luck for option luck: the confusion between exactitude and likelihood; the inflated value of control; the carrot of credit and the stick of culpability; and the perception and treatment of birth as inherently pathological not physiological.

There is a difference between perceived and actual risk. The positive feedback loop for cesareans in which the risks of vaginal birth are perceived as outweighing the risk of performing a cesarean, without a check for whether perceived risk was aligned with actual risk, is highly problematic from an ethical perspective. In most cesarean cases, it is difficult or impossible to determine if a healthy vaginal birth was possible following different risk assessment methods or different models of care, especially when accounting for the high prevalence of interventions that significantly increase risk of cesarean delivery. Induction, for example, is performed for 44% of women attempting vaginal delivery and doubles the risk of cesarean delivery.⁵⁹

Normatively, birth is not viewed nor treated as a natural event with a default good outcome in the absence of intervention, but as a ritualized crisis. The fundamental impulse behind medicine is the urge to correct, compensate for, or neutralize biological deviations from the ideal of a normal, healthy human being. However, at certain points in the life cycle of every human being—for example, death and birth—the medical impulse to correct may be both inadequate and inappropriate.

Indications for cesarean are often subjective and reveal flawed risk assessment processes biased towards the value of control. When patients and physicians perceive a risk of crisis, they would rather choose a set of known risks and play active roles in how those risks play out than opt for a less known set of risks. Risk/benefits to the physician, in addition to risk/benefits to the patient, often factor into the cesarean decision.

The current model of obstetric care over-incentivizes an interventionist model of birth. Use of the term “over”-incentivization is justified because cesarean rates are responsive to incentives that may be counterproductive to the primary objective of obstetric care—healthy mother and baby. For the physician, the decision to perform a cesarean is over-incentivized via higher reimbursement, greater convenience, and the perceived minimization of moral and legal culpability for a poor outcome; for the patient, the decision to perform a cesarean is over-incentivized via a perceived minimization of moral culpability for a poor outcome.

A powerful taboo, driving the rising cesarean rate and shielding it from ethical purview, is the taboo against “doing nothing.” Moral judgment is often assigned to women who opt for natural birth, homebirth, or even birth attended by nurse-midwives.⁶⁰ The stigma of “doing nothing” and allowing oneself to be subject to brute bad luck opposes the medical impulse of “doing everything possible”—this stigma is particularly active in the context of birth as a pathological rather than physiological event. Popular belief holds that resultant luck can and should be controlled via medical intervention.

The larger social context in which birth is situated is key to understanding the decision-making processes occurring at the site of care. Particularly, the value of control is

at stake. However, the particular ways in which individuals usually exert control in their personal and professional lives—by actively removing sources of unhappiness, pain, or ineffectiveness—are unsuited to the birth event. Birth, as a psychological process that can and does unfold quite without conscious involvement, has a default good outcome. Sometimes, things go wrong in the birthing process and intervention is warranted. Other times, phenomena we label as “going wrong” (such as premature diagnosis of labor arrest) represent the injection of social values into a natural process that is, from a purely physiological perspective, on due course.

CONCLUSIONS AND MOVING FORWARD

The cesarean section is associated with considerable excess risk of morbidity and mortality to infant and mother for low-risk women. As the gatekeepers of surgical birth, obstetricians have an ethical and scientific imperative to minimize the number of non-indicated cesarean births.

The multiple incentives to trade brute luck for option luck—even when evidence suggests “doing nothing” increases likelihood of healthy vaginal birth—heightens this moral imperative. There are limits to medicine as a beneficent practice given its location within a broader industrial milieu. These limits are not merely hypothetical but influence everyday decision-making processes. Physician incentives and disincentives shapes physician practice style. Internal review mechanisms—for example, peer-review of cesarean rates and more precise diagnostic tools—should be used as a check against incentive-driven decision making. A cesarean reduction program at Mt. Sinai Hospital incorporated revised cesarean guidelines to help clinicians distinguish between indicated and non-indicated cesarean ceases; in addition, every non-emergency cesarean required a second opinion confirming the necessity of the procedure, and physicians with the highest rates were counseled on ways to bring down their rates. The results after six years are astounding and indicate that total cesarean rates of 10-12% can consistently be achieved without adverse outcome.⁶¹ Reduction programs at multiple US hospitals have been similarly effective in reducing cesarean rates without compromising maternal or neonatal outcomes.⁶²

The scientific foundations used to assess whether a mother is a viable candidate for cesarean are, at times, subjective and charged with moral weight. The obstetrician decides what constitutes “too big a baby” or “failure to progress” or a “non-reassuring heart rate.” Informed consent and patient autonomy are based on the premise that physicians can distinguish between perceived and actual risk with a certain degree of accuracy. More uniform diagnostics—especially as it relates to labor arrest, macrosomia, and fetal heart rate—should be developed with the aim of improving positive predictive power.

Legal and financial incentives to perform cesareans should also be mitigated, for example by equalizing physician reimbursement rates for vaginal and cesarean section. This may help restrain the diffusion of the cesarean section as a procedure whose additional benefit is exceeded by its incremental financial cost.⁶³ Similarly, tort reform reducing probability of malpractice suite is associated with lower rates of cesarean section⁶⁴ and represents a worthy means of controlling defensive medicine and unnecessary cesarean procedures.

Finally, protecting a non-interventionist model of birth is critical towards the public health goal of reducing the cesarean rate and improving maternal and infant outcomes. Laboring women should have access to the full spectrum of care and treatments with demonstrated effectiveness, including those that fall under the umbrella of a non-interventionist model such as doulas or water birth.⁶⁵ The dearth of non-interventionist treatments in many hospital environments further pushes the incentive equilibrium towards cesarean section, and it implicitly perpetuates the taboo that “doing nothing” by opting for natural birth is irresponsible or likely to fail. A non-interventionist model is more likely to result in success in certain environments versus others and with certain obstetricians versus others—health care providers must learn as much as possible about the environments and physician practice styles supporting low cesarean rates; uptake, adapt, and improve innovations for preventing non-indicated cesareans; and redefine responsible moral agency in obstetrical ethics as it relates to the multiple incentives—legal, financial, and cultural—to trade brute for option luck.

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