Abbreviations

AAP: American Academy of Pediatrics
Nonprofit trade organization for 60,000 pediatricians in the United States and Canada.

ACOG: American College of Obstetricians and Gynecologists
A nonprofit trade association representing the interests of American obstetricians and gynecologists. An affiliate nonprofit business organization, the American College of Obstetricians and Gynecologists is a 501(c)(6).

CDC: Centers for Disease Control and Prevention
A U.S. agency based in Atlanta, Georgia, that studies and monitors communicable diseases as well as a broad range of other health-related issues.

FDA: U.S. Food and Drug Administration
A federal agency responsible for protecting the public health in America by assuring the safety of drugs, food, cosmetics, and other products that affect human health.

HMO: Health Maintenance Organization
An organization that provides a system between health care providers and insurance companies or individuals that centrally manages patient care through a dedicated network and a set of criteria for referral from a primary provider.

M.D.: Medical doctor
From the Latin Medicinae Doctor, a degree granted from accredited medical schools after a student has completed four years of undergraduate studies followed by four years of medical education and successfully passes the U.S. Medical Licensing Exam.

NHS: National Health Service (Britain)
Established in 1948 and funded by national taxes, Britain's NHS provides free universal health care to residents of the United Kingdom.

PPO: Preferred Provider Organization
A group of providers who have contracted with an insurer to provide services for a discount, in return for a subscription fee.

R.N.: Registered nurse
A nurse who has graduated from a college or university nursing program and has successfully passed a licensing exam.

RVU: Relative Value Units
Formula by which Medicare determines the pay for physicians for particular tasks, now also used by some hospitals to determine pay for nonphysicians by comparison to the physicians’ tasks.

WHO: World Health Organization
A United Nations agency for public health, it currently spends about $4 billion per year promoting global public health, of which one quarter comes from UN member states, the rest from outside donations.
Glossary of Terms

Adhesion  Band of scar tissue, caused by surgery, infection, or trauma, that adheres to an internal organ or other body part. In infant boys the foreskin has not yet fully separated from the glans (head) of the penis. Full separation often does not occur until age ten or eleven. Circumcision before the foreskin can retract requires forced separation, which can cause adhesions (pitting or scarring) of the glans. Abdominal adhesions are a common complication of Cesarean birth.

All-in-ones (AIOs)  A cloth diaper attached to its waterproof cover, an all-in-one is like a washable disposable diaper, combining the convenience of plastic diapers with the reuse and environmental superiority of cloth.

Amniocentesis  Prenatal test in which a large needle is inserted through the mother’s abdomen and uterus into the amniotic sac to withdraw fluid containing cells from the fetus for testing. Normally, the sac seals and the fluid regenerates in a day or two. Just under 1 percent of amniocenteses result in miscarriage. Other risks include preterm labor and amniotic fluid embolism.

AFP (Alpha-feto-protein) screening  Common blood test for a protein that can reveal several potential birth defects; often combined with other blood tests (AFP3, AFP4, “Quad,” etc.).

Amniotic fluid  The liquid that surrounds the unborn baby in the mother’s womb during pregnancy. Amniotic fluid serves many functions, including cushioning the fetus, protecting it from injury, and helping the lungs develop as the fluid is swallowed (inhaled) and released (exhaled). Amniotic fluid is continually regenerated and reabsorbed, so the amount of fluid in a mother’s uterus actually changes from hour to hour. In a normal pregnancy the volume increases as pregnancy progresses until about week thirty-six, when it starts to decrease.

Amniotic fluid embolism  An uncommon but often fatal allergic reaction in pregnancy in which amniotic fluid or fetal tissue get into the mother’s bloodstream when the amniotic sac and uterine veins have ruptured. Once almost unheard of, amniotic fluid embolism has been linked to Cytotec (misoprostol), an ulcer medication that is used off label to cause abortion and to induce pregnancy.

Amniotic sac  The membranes that contain the amniotic fluid surrounding the fetus.

Anesthesiologist  Physician specialized in anesthetizing patients for surgery, including local (skin-numbing), spinal (such as an epidural), and general (unconsciousness).

Apgar  A test given to newborns to assess their condition immediately after birth and again five minutes later. Virginia Apgar was an anesthesiologist who developed the test to see how the baby was affected by anesthesia given to the mother. Breathing, heart rate, color (rosy or blue, for blood oxygen), muscle tone, and startling response when disturbed are each measured on a simple scale of 0 (none), 1 (some), or 2 (optimal), then the five are added up to give a total score from 0 to 10.

Autologous  Transferred or derived from the same individual, as when cells taken from a newborn’s cord blood are later given back to the same person to treat a disease.

Bilirubin  A yellowish molecule in the blood, produced when hemoglobin is broken down as blood cells are replaced. Normally processed by the liver and excreted in urine (made yellow by bilirubin) and stool (likewise made brown by bilirubin). An excess of bilirubin due to physiological problems can be dangerous, but at normal levels it has the benefit of acting as an antioxidant.
**Breech birth** A baby is breech when the bottom, rather than the head, is in position to emerge first. Though most fetuses will turn to face head down, 3 to 4 percent of babies are in the breech position immediately before birth. Some breech babies turn to face downward during the birth practice. Breech positions are classified as frank, complete, or footling.

**Cavitation** Microscopic bubbles or pits (cavities) caused when a surface is struck by high-speed vibrations, like ultrasound waves, which make the surface undulate microscopically.

**Cerebral cortex** The cerebrum is by far the largest part of the human brain, occupying most of the interior of the skull and giving the brain its characteristic shape; the cortex (Latin for “bark”) is the furrowed surface of the cerebrum, where most of human cognition takes place.

**Certified nurse midwife** A registered nurse (R.N.) with advanced graduate training including specialization in midwifery, CNMs deliver babies in hospitals, birthing centers, and women's homes.

**Chorionic villus sampling (CVS)** A method of prenatal testing by sampling tissue from the villi, rootlike extensions, the fetal placenta links into the part of the placenta supplied by the uterus. Chromosome abnormalities in the fetus are tested to identify Down syndrome or other problems. Unlike with amniocentesis, the amniotic sac is not punctured, and CVS can be done earlier in the pregnancy. Nearly 1 test in 100 will cause miscarriage.

**Circulating nurse** Surgical nurse who preps the operation, then orbits the doctors and nurses during surgery, monitoring their needs and the patient's and exchanging things between the sterile zone and the outer part of the operating room.

**Circumcision** Elective surgery, originating in prehistoric religious and cultural practices, in which the foreskin of the penis is removed so that it no longer hoods and protects the end of the organ. Though procedures differ by doctor or traditional cultural circumciser, the middle of the tube of skin covering the penis is cut out, and the resulting ends of the skin growing together, shortening the penile skin enough to keep the head revealed. The mucous membranes at the end of the penis dry out and become hardened with keratin, the protein composing fingernails.

**Colostrum** The yellowish or clear liquid rich in protective white blood cells and antibodies that sometimes leaks out during pregnancy and is secreted from the breasts for several days before the milk comes in. Sometimes referred to as the first milk, colostrum has a laxative effect and helps a newborn establish healthy gut biota and pass meconium.

**Complete breech** A baby presents as complete breech when the bottom and feet lie against the birth canal, the legs crossed as if sitting on the ground Indian style.

**Contact dermatitis** Localized skin irritation or rash caused by contact with an allergen or other irritant.

**Cytotec** Trade name for misoprostol, a synthetic prostaglandin used to treat ulcers, induce abortion, enhance erectile function, and hasten labor. In August 2000 Searle (the manufacturer) wrote a warning letter to doctors that there had been cases of uterine rupture and death, among other complications, and asking it not be used on pregnant women.

**Direct-entry midwife** A midwife who is not also an R.N. but has trained at a school of midwifery, a university program distinct from nursing, as an apprentice or through self-study. Direct-entry midwives focus on births outside a hospital setting, such as at home or in a birthing center. In the United States, direct-entry midwives can obtain national certification as a CPM (certified professional midwife) administered from the North American Registry of Midwives. Most state governments also provide for licensure of qualified practitioners, while some states make no legal allowance for the practice.

**Double-blind experiment** A rigorous method of experimentation in which neither the experimenter nor the subject knows who is part of the control group. This protocol eliminates experimenter bias, which has been known to influence results.

**Doula** A birth attendant who offers non-medical assistance to a woman during pregnancy, labor, and after the baby is born. From the ancient Greek word for “slave woman,” the term **doula**
started to become popular in the 1970s in America when researchers found that women who had support during labor had better outcomes.

**Down syndrome** A chromosomal error in which an additional (third) copy of chromosome 21 is present in a person’s DNA, resulting in a number of differences from typical development, particularly in height and cognition.

**Effacement** Cervical thinning (sometimes referred to as “ripening”) that happens in preparation for labor and is estimated in percentages. The first stage of labor is complete when the cervix is fully dilated to ten centimeters and 100 percent effaced.

**Endometriosis** A painful condition in which uterine cells spread outside the uterus to other parts of the pelvis and react to the woman’s hormonal cycle as the uterus does. Endometriosis can cause irregular periods and infertility.

**Endorphin** Hormone that acts as a neurotransmitter, producing pleasant feelings and inhibiting pain.

**Epidural** Pain relief for childbirth effected by injecting local anesthetic into the spinal cord, numbing everything below the site of injection. Though popular, epidurals have been associated with longer labors, a higher risk of maternal fever (leading to obstetric intervention and lower newborn Apgar scores), and lingering numbness.

**Episiotomy** Operation cutting open the perineum from the vaginal opening toward the anus, once thought to help avoid tearing of the vaginal opening during birth. Research has shown that outcomes are better without episiotomy than with it, but the practice continues among those ignorant of the medical evidence.

**Excitatory cells** Neurons (brain cells) that tend to propagate nerve signals by releasing glutamate. Inhibitory cells, by contrast, release GABA (gamma-aminobutyric acid), which inhibits the signal propagation.

**Fetal Survey** A detailed ultrasound assessing the size and physiology of a fetus, given typically between eighteen to twenty weeks gestation.

**Flatulence** The release of gas generated by bacteria in the large intestine and colon, commonly called farting.

**Footling breech** In footling breech, the feet push against the birth canal opening without the baby’s bottom nearby.

**Forceps** Obstetrical forceps are large gripping tools with plierslike handles and spoon-shaped loops of metal for holding the fetus’s head to pull it out of the mother’s pelvis.

**Foreskin** Tube-like overlap of skin covering the glans (head) of the penis that protects the skin of the glans, which is a mucous membrane, contains erogenous tissue, and acts as a lubricated sheath for the penis to glide in and out of during intercourse.

**Frank breech** A frank breech is when the baby’s bottom faces the birth canal with the legs sticking straight up in front so that the feet are close to the head, like a diver doing a jackknife.

**Germ cells** Undifferentiated cells in the brain or elsewhere in the body that have the capacity to grow into various types of specialized cells.

**Gestational diabetes** Temporary high levels of glucose (sugar) in the blood during pregnancy, a common condition without the dangers of type 1 or type 2 diabetes, readily controlled by diet and lifestyle changes.

**Glucose tolerance test** A test usually given between twenty-four and twenty-eight weeks of gestation to detect pregnancy-induced diabetes, involving quickly drinking a large dose of pure glucose sugar and then being monitored to evaluate how well the body processes it.

**Gray matter** Gray matter, which makes up most of the surface of the brain, consists of nerve cells and their supportive tissue, other specialized cells in the brain (glial cells), and capillaries. Gray matter includes regions of the brain involved in cognition, speech, muscle control, memory, emotions, and sensory perception.

**Gynecologist** Physician specialized in the female reproductive system. Most are also specialized in obstetrics, which concerns women and their children during and immediately following pregnancy.
**Halitosis** An unusually unpleasant odor in the breath.

**Hemorrhoids** Natural blood vessels in the anus, which can become a problem when they become and remain engorged with blood, a common occurrence in pregnancy. Hemorrhoids can also develop postpartum caused by a woman delivering vaginally flat on her back.

**High-risk pregnancy** Pregnancy is medically considered to have higher risks when the mother is particularly young or old, petite or obese, or with any of a long list of complicating factors. Diseases can complicate a pregnancy, whether congenital (such as maternal birth defects making birth difficult), acquired (such as cancer), or contagious (such as venereal diseases). Otherwise healthy women may be classified high-risk because of doctor or hospital protocol, prior Cesarean birth, or prenatal testing.

**Hydraulic fracturing** ("fracking") Pumping water and chemicals into natural cracks in underground bedrock, forcing them open to allow oil and natural gas far below to rise up for extraction. Oil and gas can be obtained from areas inaccessible to conventional drilling, increasing the supply of fossil fuels, at the cost of changing the rocky strata of the Earth's crust, and filling deep underground strata with polluted water.

**Hypoglycemia** Abnormally low level of blood sugar (glucose) in the blood.

**Iatrogenic** "Physician-induced," referring to any problem, injury, or reaction caused by the action of a physician or by a medical procedure. "Iatros" means physician in Greek, and "genic," means generated. Childbed fever, caused by doctors not washing their hands after dissecting corpses or treating ill patients, was an iatrogenic disease.

**Implantation** When a woman's egg, within a few days after being fertilized by a sperm, implants itself in the prepared lining of the uterus, where it is nourished and begins to develop part of itself into the placenta.

**Inhibitory cells** Brain cells (neurons) that work to restrain stimulation. The transmission of stimuli in the brain is guided by a balance between excitory cells, which promote it, and inhibitory cells, which restrain it.

**Insulin** A hormone regulating metabolism, insulin governs how the body deals with glucose sugar. When blood sugar levels rise, insulin is released by the pancreas, which causes the body to pull the glucose out of the blood and store it. If tissues become resistant to insulin, diabetes can develop.

**Intrauterine Growth Restriction (IUGR)** A term used to describe fetuses thought to weigh less than 90 percent of fetuses of the same gestational age. Also known as fetal growth restriction, this condition can be caused by malnourishment, high altitude, twins, maternal high blood pressure, infection, or a congenital disorder. Since it is difficult to accurately measure a fetus's size in utero and is normal for some women to gestate more slowly, IUGR is often misdiagnosed, leading to unnecessary interventions like preterm C-section.

**Intussusception** A sudden intestinal blockage where a part of the intestine pulls into itself, intussusception can result in bleeding, infection, shock, and dehydration. This serious condition sometimes requires emergency surgery and can be fatal.

**Ionizing radiation** Radiation of a kind and intensity that can electrically charge atoms, which turns the atom into a differently charged version called an ion. Ions react differently from the original form, so an ionized atom in your body won't work quite the same as the original. Ionizing radiation can break chemical bonds in molecules such as DNA. No amount of ionizing radiation is considered safe, though some exposure from the natural environment is unavoidable. All X-rays are ionizing radiation.

**Jaundice** A yellow skin tone caused by an excess of bilirubin in the bloodstream, affecting more than half of all newborns as the infant's metabolism catches up with the hemoglobin cycle in the blood. In the vast majority of cases jaundice is a normal condition that disappears in one to two weeks.

**Kernicterus** Damage to an infant's brain by excessive bilirubin levels in the blood, resulting from the breakdown of red blood cells. Usually caused by mother and fetus having different Rh blood types or by a genetic disorder.
Low-risk pregnancy A normal healthy pregnancy with no known complications (i.e., not high risk); over 90 percent of pregnancies in the United States fall into this category, which is typically used to describe the candidates for a vaginal birth unlikely to require medical intervention.

Meatal stenosis A narrowing at the tip of the penis of the opening of the hole that urine passes through (the urethra), that interferes with normal urination. Usually caused by swelling and irritation from a circumcision that results in scar tissue growing across the urethra. This condition can lead to painful urination, urinary tract infection, bleeding from the end of the penis, daytime incontinence, and bed-wetting. An operation to enlarge the urethra is often necessary.

Medicaid Government program providing limited payment for health care for some low-income Americans.

Midwife Birth attendant who specializes in physiological (natural) childbirth. Midwives assist women in delivering their children vaginally and with prenatal and postnatal care. The midwifery model of care is to follow the normal course of birth and facilitate successful vaginal delivery. Midwives monitor for complications requiring intervention, transferring care if necessary to obstetricians, who specialize in the illnesses and complications that can arise in pregnancy and birth. Compared to OBs, births with midwives have lower infant and mother mortality and fewer complications and interventions.

Minicolumn A vertical arrangement of neurons in the layers of the cerebral cortex. The brain develops a fine three-dimensional structure of cells, necessary to normal cognitive function. When these stacks of cells are too tightly or too loosely spaced, intellectual function is abnormal.

Naturopath Physician educated at a naturopathic medical school, following a holistic medical model emphasizing diet and botanical treatments as an alternative to drugs when possible.

Necrotizing Condition in which cells die abnormally and are not cleared away by the body, leading to dead tissue rotting while attached to living tissue. Often self-spreading, if not removed surgically, necrotizing can lead to gangrene, ending in amputation or death.

Neural tube defects Birth defects in which the neural tube, which forms the spinal cord and brain, fails to close completely in the development of the fetus, leading to complications of various severity.

Nurse anesthetist Registered nurse who specializes in giving anesthesia. These nurses do epidurals and spinals.

Otitis media Normally harmless infection between the eardrum, the Eustachian tube, and the inner ear, also known as an ear infection.

Otoscope Cone-shaped viewer, mounted on a handle, that is used by physicians to examine inside the ear; bane of children, second only to the tongue depressor.

Ovulate Part of menstrual cycle in which a mature ovum (egg) or ova (eggs) are released from the ovary, ready to travel down the fallopian tube to the uterus to be fertilized by sperm and implanted into the uterus, resulting in pregnancy.

Oxytocin Hormone that causes uterine contraction during and after birth, oxytocin is also released during breastfeeding. In the brain, it is active in producing feelings of empathy and bonding.

Pediatrician Physician specialized in the primary care treatment of children from birth through adolescence.

Perineum The area (skin and underlying tissue) between the genitals and anus. The woman's perineum stretches and thins to make way for the baby's head during childbirth.

Physician Health care provider who diagnoses and treats disease or injury. Though often thought synonymous with M.D., physicians also include D.O.s (osteopathic doctors), N.D.s (naturopathic doctor), D.C.s (doctor of chiropractic), and N.P.s (nurse practitioner).

Pitocin Synthetic (artificial) form of the hormone oxytocin used to induce labor in pregnant
women or stimulate uterine contractions once labor has already started. It is synthesized from the pituitary glands of cattle and contains the preservative chloretone.

**Placenta** Two-part organ connecting the uterus and fetus, with part formed from each of them, the placenta allows gases, fluid, nutrients, and waste to be passed between mother and fetus.

**Placenta previa** Obstruction of the cervical opening by the placenta, which can cause a variety of problems, including hemorrhage.

**Preeclampsia** Syndrome combining high blood pressure and protein in the urine during pregnancy, which can lead to various hypertension problems, blood cell disfunction, and other complications, and in a small percentage of cases to full eclampsia with its associated seizures.

**Prepuce** Synonym for foreskin.

**Public aid** Any system of financial assistance for low-income needs, including health care, as in Medicaid or the Illinois Public Aid medical program.

**Pulmonary embolism** A blockage in the main artery of the lungs, either by a clot or by amniotic fluid; a major cause of maternal mortality. A danger to anyone who remains lying immobile for extended periods.

**Sciatica** Pain in the large nerves running down the backs of the legs. A frequent condition in the second and third trimesters of pregnancy as the growing baby puts pressure on the mother’s sciatic nerve.

**Scrub nurse** Nurse who assists a surgeon and remains within the sterile area of the operating room.

**Septicemia** Blood poisoning from harmful bacteria that often occurs with severe infections. Chills, high fever, rapid breathing, rapid heartbeat, and discoloration of the skin can be signs of septicemia.

**Serial Sequential Testing**, also called serial sequential screening. A series of tests for Down Syndrome and other congenital problems, compounding an ultrasound of skull development with two successive blood tests. The nuchal fold ultrasound is the first test in this series, and must be performed before fifteen weeks.

**Shoulder dystocia** When a baby’s head emerges from the birth canal but a shoulder gets stuck behind the mother’s pubic bone. This is a dangerous place for delivery to stop, as the blood supply from the umbilical cord is likely to be cut off. Several techniques, as simple as pulling the mother’s knees to her chest or rolling her onto all fours, resolve the problem in the majority of cases.

**Smegma** Secretion of skin oils and exfoliated cells under the foreskin that cleans, lubricates, and protects the glans (head) of the penis. There is little of it in childhood; it increases at puberty.

**Sonogram** Also called an ultrasound, imaging of a fetus (and the interior of the mother’s abdomen) by making an echo-reflection image using very-high-frequency sound waves.

**Sonography** The process or practice of using ultrasound to image the interior of the body.

**Spinal** Anesthesia delivered directly into the spine to completely numb everything below for surgery. Often used with women who are having elective Cesarean sections.

**Stem cells** Cells that can turn into any of a variety of specialized cell types. These self-perpetuating cells are found in many places in the adult body, where they are used to replace dying cells. In the first several days after a human ovum is fertilized, before it implants in the uterus and begins to develop from a blastocyst into a differentiated embryo, all of the cells are stem cells that can become any type of human cell.

**Superabsorbent polymer (SAP)** Molecule that bonds chemically to water molecules and bonds to itself to form long molecular chains. In this way it can occupy three hundred times the SAP's own weight in water, and the water cannot be squeezed out because it has become part of the molecule.

**Transverse** Dimension of the body in which torso-twisting movements are performed; a plane
parallel to the floor. Contrasted to coronal and sagittal planes of the body. A fetus is transverse when lying horizontally across the mother's uterus. A transverse Cesarean incision is made horizontally.

**Ultrasound** Imaging of a fetus (and the interior of the mother's abdomen) by making an echo-reflection image using very high-frequency sound waves. The intensity of the waves is not regulated, leading to possible risks to the fetus. According to the FDA, “There are no federal radiation safety performance standards for diagnostic ultrasound.” Though user education and licensure exist, they are not required in most states.

**Urethra** Tube conducting urine from the bladder out to be eliminated. In women, it emerges in the vulva, above the vagina.

**Uterus** The womb; the organ in which implantation of the fertilized egg takes place and the fetus matures.

**VBAC** Pronounced “vee-back,” vaginal birth after cesarean. Giving birth vaginally after a previous C-section has been found to be as safe as or safer than Cesarean birth, even for a woman who has had a previous C-section. However, because the uterine scar could separate and result in uterine rupture (often caused by pregnancy induction and aggressive labor management with Pitocin) and the fear of litigation, many hospitals do not allow women to attempt VBAC.

**Ventricles** The two larger chambers in the heart (left and right ventricles) that do the main work in pumping blood throughout the body.

**Vernix** A waxy secretion covering the fetus in utero and the newborn's skin at birth. Vernix protects and lubricates the delicate skin of the newborn, holding in heat and moisture, and perhaps acting as a barrier to harmful bacteria while it lasts.

**X-rays** High-frequency light used to image structures inside the body. X-rays are a form of ionizing radiation, which can break chemical bonds between atoms and change their electron charge. Scientists agree that no amount of ionizing radiation is safe and that there is no lower limit below which there are no health risks.
Appendix

RESOURCES

PREGNANCY SUPPORT


Childbirth Connection (212-777-5000, http://www.childbirthconnection.org/)—Nonprofit dedicated to helping women, their partners, and health professionals make scientific and evidence-based decisions about best maternity care practices. Their website is loaded with helpful, referenced articles about pregnancy, labor, and delivery.

Planned Parenthood Federation of America (212-541-7800, http://www.plannedparenthood.org/)—Nonprofit organization that runs health care centers throughout the United States to give women and their partners access to free or low-cost pap smears, birth control, pregnancy testing, and abortion.

CHILDBIRTH SUPPORT


DONA International (888-788-DONA, http://www.dona.org/)—International nonprofit organization that trains, certifies, and promotes doulas (birth assistants) and helps expectant families find doula support.

Midwifery Alliance of North America (888-923-MANA, http://mana.org/)—Nonprofit organization promoting collaboration and support among midwives.

Waterbirth International (954-821-9125, http://www.waterbirth.org/)—Nonprofit organization dedicated to helping women have waterbirths.

BREASTFEEDING SUPPORT

monthly support groups for new moms in every state in America and dozens of countries around the world.

To buy breast milk: Only the Breast (http://www.onlythebreast.com/) is an online community of moms who want to buy, sell, and donate breast milk.

To find free breast milk near you: Human Milk For Human Babies (http://www.facebook.com/hm4hb) is a global network that has local chapters in Oregon, Washington, Oklahoma, South Carolina, and elsewhere. Each chapter has their own Facebook page where moms who have extra milk and moms who need milk can find each other.

To obtain breast milk from a milk bank: The Human Milk Banking Association of North America (817-810-9984, https://www.hmbana.org/) collects donated breast milk, processes it, and then ships it to babies with a doctor’s prescription indicating medical need. Some insurance companies cover the cost of the milk.

POSTPARTUM SUPPORT

Doulas of North America (888-788-DONA, http://www.dona.org/mothers/faqs_postpartum.php)—Doulas are not only of great assistance during childbirth, they also can help families adjust to a new baby. They attend to the basic needs of the new mom and educate her and the family about appropriate care of an infant.


DIAPERING AND POTTYING SUPPORT

Diaper-Free Baby (http://www.diaperfreebaby.org/)—Volunteer-led nonprofit that runs local support groups to educate and help parents who want to practice elimination communication.

Real Diaper Association (http://www.realdiaperassociation.org/)—Nonprofit trade association for the cloth diaper industry that educates parents about cloth diapering, promoting it as a cheaper, safer, and more environmental diapering choice.

INFORMATION ABOUT CIRCUMCISION

American Academy of Pediatrics, the trade organization of American pediatricians, issued “Technical Report: Male Circumcision” (August 2012) from its task force that concludes that the benefits of male infant circumcision outweigh the risks but not enough to recommend routine circumcision for all newborn males, that the choice should be up to the parents, and that insurance companies should pay for the procedure. The full report is available online: http://pediatrics.aappublications.org/content/130/3/e756.full.

Circumcision Information and Resource Pages (CIRP) contains an exhaustive reference library of research, history, and statistics related to circumcision: http://www.cirp.org/.

Circumcision Resource Center (http://www.circumcision.org/)—Nonprofit educational organization that raises awareness about male circumcision with the goal of discouraging parents from doing the procedure.

Intact America (http://www.intactamerica.org/)—Nonprofit child advocacy organization overseen by a board of health professionals that educates parents about the harms of circumcision.
The Royal Australasian College of Physicians—Professional organization of doctors in Australia and New Zealand. They have written a twenty-eight-page referenced position statement on male circumcision, “Circumcision of Infant Males” (2010), detailing the anatomy of the foreskin, the medical debate, and the reason it is not recommended or routinely done in Australia or New Zealand: http://www.kids.vic.gov.au/downloads/male_circumcision.pdf.

INFORMATION ABOUT VACCINES

CDC (800-232-4636, http://www.cdc.gov/vaccines/)—The American government’s Centers for Disease Control and Prevention post exhaustive information on their website about childhood vaccines, including current immunization schedules, breaking news, revised recommendations, vaccine ingredients, and adverse effects. Detailed information slanted toward health care providers can be found at: http://www.cdc.gov/vaccines/hcp.htm.

National Vaccine Information Center (703-938-0342, http://www.nvic.org/)—Nonprofit educational vaccine safety watchdog group that is dedicated to preventing vaccine-induced injuries. Funds research into vaccine safety, lobbies the government to better identify which children may be prone to an adverse vaccine reaction, and provides exhaustive and up-to-date information on vaccine ingredients, current guidelines, legal issues, and informed consent.

The Vaccine Adverse Event Reporting System VAERS (http://vaers.hhs.gov/index)—National vaccine safety surveillance program cosponsored by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). Parents can access reports submitted to VAERS (http://vaers.hhs.gov/data/index) and report vaccine reactions online, by fax, or by mail (http://vaers.hhs.gov/esub/index).

RECOMMENDED READING

Suzanne Arms, Immaculate Deception II: Myth, Magic, & Birth
Naomi Baumslag, M.D., and Dia L. Michels, Milk, Money, and Madness: The Culture and Politics of Breastfeeding
Grantly Dick-Read, Childbirth Without Fear: The Principles and Practices of Natural Childbirth
Ina May Gaskin, Ina May’s Guide to Childbirth
David Gollaher, Circumcision: A History of the World’s Most Controversial Surgery
Christine Gross-Loh, The Diaper-Free Baby: The Natural Toilet Training Alternative
Lise Eliot, Ph.D., What’s Going on in There?: How the Brain and Mind Develop in the First Five Years of Life
Susan Markel, M.D., What Your Pediatrician Doesn’t Know Can Hurt Your Child
Robert S. Mendelsohn, M.D., How to Raise a Healthy Child... In Spite of Your Doctor
Gabrielle Palmer, The Politics of Breastfeeding: Why Breasts Are Bad for Business
Robert W. Sears, M.D., The Vaccine Book: Making the Right Decision for Your Child
Alecia Swasy, Soap Opera: The Inside Story of Procter & Gamble
Marsden Wagner, M.D., Born in the USA: How a Broken Maternity System Must Be Fixed to Put Women and Children First
Diane Wiessinger et al., The Womanly Art of Breastfeeding
NORWEGIAN CHILDHOOD VACCINE SCHEDULE, BIRTH TO AGE 5

No routine vaccines given before 3 months of life*
At 3 months, 5 months, and 12 months:
- Diphtheria
- Tetanus
- Acellular pertussis
- Hib
- Polio
- Pneumococcal conjugate

At 15 months:
- Measles, mumps, and rubella vaccine

*Hepatitis B given to at-risk groups only

AMERICAN CHILDHOOD VACCINE SCHEDULE, BIRTH TO AGE 5

At birth, 1–2 months, 6–18 months:
- Hepatitis B

At 2, 4, 6, 15–18 months:
- Diphtheria
- Tetanus
- Acellular pertussis

At 12–23 months:
- Hepatitis A

At 2, 4, 6, 12–15 months:
- Hib
- Pneumococcal conjugate

At 6–23 months and every year thereafter:
- Influenza

At 2, 4, 6–18 months, 4–6 years:
- Polio

At 2, 4, 6 months (or 2, 4 months depending on vaccine):
- Rotavirus

At 12–15 months, 4–6 years:
- Measles
- Mumps
- Rubella

At 12–18 months, 4–6 years:
- Varicella (chickenpox)

Source: WHO vaccine-preventable diseases: monitoring system 2012 global summary
Photo Credits

Illustration 1: Newborn baby born via C-section, photo courtesy of Keren Fenton
Illustration 2: Belly shot, photo by Jennifer Margulis
Illustration 3: Young Woman at Bus Stop, photo by Jennifer Margulis
Illustration 4: Chicago's Lying-In Hospital, photo courtesy of the University of Chicago Medical Center
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Illustration 6: Baby Oliver Just After Birth, photo by Jennifer Margulis
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Illustration 12: Anna's First Birthday, Korean Style, photo courtesy of Christine Gross-Loh
Illustration 13: Three Children Walking Away, photo by Jennifer Margulis
Notes

Introduction

x They had been married for almost two years: Maria McCullough, “Teachers Joined in Birth, Death,” Philadelphia Inquirer, May 10, 2007.
x dying as a result of childbirth is five times greater: Save the Children, Nutrition in the First 1,000 Days: State of the World’s Mothers 2012 (Save the Children: Westport, Conn.: 2012), 53, accessed at http://www.savethechildren.org/att/cl/[9def2eb-10ae-432c-9bd0-d91d2eba74a]/STATEOFTHEWORLDSMOTHERSREPORT2012.PDF.
x Eight American children per 1,000: Ibid.
x A child in the United States is more than twice: Ibid., 53, 55.
x contaminated infant formula: Alan Scher Zagier, “More Retailers Pull Formula After Baby’s Death,” Children’s Health, MSNBC.com, December 23, 2011, accessed at http://www.msnbc.msn.com/id/45762595/ns/health-childrens_health/t/more-retailers-pull-formula-after-babys-death/#.T1Um7phR4mE. Though the CDC found evidence of cronobacter in an opened container of infant formula, and prepared infant formula samples provided by the Missouri Department of Health and Senior Services, according to the Chicago Sun-Times, the CDC and the FDA were unable to find evidence of the bacteria in sealed infant formula with the same lot number.
x safer to be born into forty-eight countries: CIA, World Factbook, “Country Comparison: Infant Mortality Rate,” 2012 estimated numbers. Available on line at https://www.cia.gov/library/publications/the-world-factbook/geos/us.html. According to the CIA: “This entry gives the number of deaths of infants under one year old in a given year per 1,000 live births in the same year; included is the total death rate, and deaths by sex, male and female. This rate is often used as an indicator of the level of health in a country.”
x more than 25,000 will die in their first year: Calculating infant mortality rate of 6 per 1,000 multiplied by 4.3 million births.
x via C-section in April 2007: McCullough, “Teachers Joined in Birth, Death.”

a review of the death is almost always conducted: Marsden Wagner, M.D., M.S., Born in the USA: How a Broken Maternity System Must Be Fixed to Put Women and Children First (Berkeley: University of California Press, 2006), 23.


including Ohio: According to the State of Ohio's Hospital Compare website: “In November 2006, House Bill 197 was passed requiring Ohio to form a council (the Hospital Measures Advisory Council) appointed by the House and Senate to make recommendations to the Director of Health on hospital performance measures and a publically available website. The Hospital Measures Advisory Council was created pursuant to Ohio Revised Code section 3727.31 and each member of the Council appointed a representative to the Data Expert Group pursuant to Ohio Revised Code section 3727.32. The Infection Control Group was appointed by the Advisory Council and is a group of health care consumers, nurses, and experts in infection control convened to provide information about infection issues to the Council as needed for the Council to perform its duties. The Council also created two other specialty groups: Pediatric Workgroup and Perinatal Workgroup. Both group's memberships are in the area of their respective expertise and provided guidance to the Hospital Measures Advisory Council in recommending pediatric and perinatal measures.” “FAQs,” Ohio Hospital Compare, Ohio Department of Health, http://www.ohiohospitalcompare.ohio.gov/documents/FAQs.pdf.

New York: New York State's Maternity Information Act (MIA) was enacted into law in 1989. The MIA requires hospitals to make public via a brochure their annual rates of “cesarean sections, primary and repeat; women with previous cesarean sections who have had a subsequent successful vaginal birth; deliveries in birthing rooms; deliveries by certified nurse-midwives; fetal monitoring listed on the basis of auscultation, external and internal; births utilizing forceps, listed on the basis of low forceps and mid forceps delivery; births utilizing breech vaginal delivery; vaginal births utilizing analgesia; vaginal births utilizing anesthesia including general, spinals, epidural, and paracervical; births utilizing induction of labor; births utilizing augmentation of labor; births utilizing episiotomies; and mothers breast feeding upon discharge.” (Alliance for the Improvement of Maternity Services [AIMS], “Legislation Affecting Maternity Care,” 2000, http://www.aimsusa.org/laws.htm.) However, the Office of the New York City Public Advocate has consistently found that most New York State hospitals are not in compliance with this law. See Betsy Gotbaum, Giving Birth in the Dark: City Hospitals Still Failing to Provide Legally Mandated Maternity Information (New York: Office of the New York City Public Advocate, 2006), accessed at http://publicadvocategotbaum.com/policy/documents/GivingBirthInTheDark12.06.pdf.


“no maternal mortality review process at all”: Amnesty International, Deadly Delivery: The Maternal Health Care Crisis in the USA.


“an act of God”: Rita Rubin, “Answers Prove Elusive as C-Section Rate Rises,” USA Today,
January 8, 2008, accessed at http://www.usatoday.com/news/health/2008-01-07-csections_N.htm. David Birnbach, an obstetrical anesthesia specialist who directs the Center for Patient Safety at the University of Miami is quoted in the article: “Unfortunately, it can be due to misadventure or an error, but more often than not, it’s an act of God.”

xii older women having first babies: Rob Stein, “Number of Twins Soar as Older Moms Turn to Fertility Treatments,” NPR, January 4, 2012.


xiii "the least evidence-based discipline": Stefan Topolski, M.D., in an interview with the author, June 21, 2012.


Chapter One: Gestation Matters: The Problem with Prenatal Care


2 Greggory DeVore, M.D.: Ibid., 19. According to Matt, Liz’s husband, DeVore is known to many as “Dr. Doom” for his pessimistic way of focusing on worst-case scenarios.

2 the cord was wrapped around her neck: Ibid., 20.

2 Terrified first-time parents: Ibid., 22.

2 At 3 pounds 13.5 ounces: Ibid., 45.

3 Liz most likely died: Ibid., 67.


3 says one mother of four from Pennsylvanis: Mom of four from Pennsylvania, in interview with the author, September 14, 2012.


3 lead to overdiagnosis of problems": Sarah J. Buckley, M.D., Gentle Birth, Gentle Mothering (Berkeley, Calif.: Celestial Arts, 2009), 67. Beth Israel Deaconess Medical Center warns its patients that “ultrasound scans can . . . result in overdiagnosis and cause unnecessary worry to expectant parents.” “Ultrasound Screening,” Beth Israel Deaconess Medical Center, 2012, accessed at http://www.bidmc.org/CentersandDepartments/Departments/ObstetricsGynecology/PatientEducationResources/YourPregnancy/UltrasoundScreening.aspx.


3 lead to increased obstetric intervention": Another study by researchers from the Department of Obstetrics and Gynecology, Naval Medical Center-Portsmouth in Portsmouth, Virginia, drew a similar conclusion: One popular method used to determine amniotic fluid levels, “excessively characterizes a greater number of pregnancies as having oligohydramnios [a deficiency of amniotic fluid] leading to more interventions without improvement in perinatal outcome.” E. F. Magann, “The Evidence for Abandoning the Amniotic Fluid Index in Favor of the Single Deepest Pocket,” American Journal of Perinatology 24, no. 9 (October 2007): 549–555, accessed at http://www.ncbi.nlm.nih.gov/pubmed/17909990.

3 not enough available evidence: The most recent systematic review of the available literature on bed rest found that the available evidence did not support or refute the idea that bed rest can help prevent preterm labor. C. Sosa et al., “Bed Rest in Singleton Pregnancies for Preventing Preterm Birth,” Cochrane Database of Systematic Reviews 1 (2004). For a short discussion of the other studies that have found no benefit to bed rest or not enough evidence to make a determination either way, see F. G. Cunningham et al., Williams Obstetrics, 23rd ed. (New York: McGraw Hill, 2010), 823.


4 Reynir Tómas Geirsson, M.D.: Icelanders use patronymics rather than family surnames and go by their first names. See “Author’s Note.”

4 “But enforced strict bed rest has never been proven of use”: Dr. Reynir Tómas Geirsson, M.D., chair, Department of Obstetrics and Gynecology at the Landspítali University Hospital, Reykjavik, Iceland, in an email communication with the author, August 4, 2011.

“Between the false negatives and the false positives”: Anonymous father, in an interview with the author, March 14, 2012.


“It is usually a mild condition”: Buckley, *Gentle Birth*, *Gentle Mothering*, 46.


“It is usually a mild condition”: Buckley, *Gentle Birth*, *Gentle Mothering*, 46.


“Baby wasn’t ready to come out”: Kristen Boyle, parent, in an interview with the author, March 16, 2012.


“She lay as still as she could on the couch”: Jenna Nichols, parent, in an interview with the author, March 7, 2012.

“Every time she took her conventional prenatal vitamin: Sarah Jane Nelson Millan, parent, in an email communication with the author, March 6, 2012.

“She threw up twenty minutes later: Katherine Womack, parent, in an interview with the author, March 7, 2012. After trying several brands, Katherine found that a prenatal vitamin made from whole foods did not give her mouth sores. Katherine and her doctor realized together that the high iron content was making her sick, and he prescribed an expensive prenatal without the iron, which cleared up the problem.

“Painful constipation: “Pregnancy Week by Week: Prenatal Vitamins, Why They Matter,


dizziness: Dizziness and nausea were two side effects I experienced myself. Internet chat and advice reveals that I am not alone, see http://community.babycenter.com/post/a24874817/are_you_dizzy_beware_of_one_a_day_prenatal_vitamins; and http://www.livestrong.com/article/412222-is-it-normal-to-be-dizzy-when-taking-prenatal-vitamins/


11 some doctors now believe: Lester Voutsos, M.D., section chief of obstetrics, Providence Hospital, Novi, Michigan, in an interview with the author, March 7, 2012.


cornstarch and sugar, to name just a few: Another ingredient, Carnauba (Copernicia Cerifera) Wax, which is also used in automobile wax and shoe polish, is made by bleaching the naturally occurring wax found on a plant native to South America, so it is not necessarily an unnatural product.


did not contain the amount of nutrients listed: This June 15, 2011, report did not find problems with three prenatal brands, but did find gross inaccuracies in vitamins for children, and that the price of the vitamins had no relationship to the accuracy of the labeling. (Linda Carroll, “Many Multivitamins Don’t Have Nutrients Claimed in Label,” Diet and Nutrition on MSNBC.com, updated June 20, 2011, accessed at http://www.msnbc.msn.com/id/43429680/ns/health-diet_and_nutrition/t/many-multivitamins-dont-have-nutrients-claimed-label/#.T1_B5hR4mE.) When ConsumerLab.com compared Rite Aid Prenatal Tablets with Folic Acid, which costs 4 cents per day, they found it provided the same vitamin and minerals as Stuart Prenatal, which cost 30 cents per day, over seven times as much. ConsumerLab.com, Product Review, “Multivitamin and Multimineral Supplements Review, June 28, 2011, accessed at https://www.consumerlab.com/reviews/review_multivitamin_compare/multivitamins/ (available to members only).

The manufacturer does not even have to: “Food: Overview of Dietary Supplements,” FDA, last updated October 14, 2009, accessed at http://www.fda.gov/food/dietarysupplements/consumerinformation/ucm110417.htm.

I had her switch each day: Tod Cooperman, M.D., president, ConsumerLab.com, in an interview with the author, March 14, 2012.


Unlike vitamins and minerals, phytochemicals: Ibid.

They have more fiber: Ibid.


They do a high-volume practice: This and subsequent quotations: Paul Qualtere-Burcher, M.D., obstetrician, in an interview with the author, March 8, 2012.

Relative Value Units: Relative Value Units (RVUs) are a way physicians groups and hospitals calculate compensation for staff by using a formula tied to various physician services.

At Qualtere-Burcher’s last job: He was employed by PeaceHealth Medical Group, a nonprofit Catholic community health organization that owns eight hospitals and forty-two clinics in Alaska, Washington, and Oregon.
“They’re looking for the billable opportunity”: Edward Linn, M.D., in an interview with the author, August 18, 2011. A follow-up interview was conducted on March 18, 2012.

“When the outcomes aren’t great you need to change the system”: Sharon Rising, founder and CEO, Centering Healthcare Institute, in an interview with the author, March 18, 2012.


“was committed to being much more modern”: Ibid.

“The medical model of obstetrics is reactive”: Stuart Fischbein, M.D., obstetrician, in an interview with the author, November 15, 2011.

“If they have a patient who gets into trouble”: This and subsequent quotations: Paul Qualtere-Burcher, M.D., obstetrician, in an interview with the author, March 8, 2012.

“We have never allowed ‘free’ pharmaceutical samples”: Brian Price, M.D., obstetrician, email communication with the author, September 26, 2012.

American College of Obstetricians and Gynecologists gross receipts: The exact number was 80,522,676.


Total costs of prenatal visits with a doctor: The actual number is $3,942.49. The total cost of prenatal visits with a doctor varies widely, depending on the practice, location, and level of care. This number is based on an average of thirteen prenatal appointments (women have typically from eleven to fifteen) multiplied by $180 per visit, plus two ultrasound scans, one at less than fourteen weeks ($842.08), and one five-month anatomy scan ($761.41), which is typical for southern Oregon, where I live.

Total costs of prenatal visits with a homebirth midwife: Homebirth midwives in our area charge between $50 to $150 per prenatal visit and usually see clients on a schedule similar to a doctor’s (thirteen visits multiplied by $100 per visit equals $1,300). The cost of ultrasound scans, which are not always part of homebirth care in low-risk pregnancies in our area, would be extra.

Cost per minute to have pregnancy supervised by a doctor: Calculated based on a doctor spending twenty minutes on average with a pregnant patient.

Cost per minute to have pregnancy supervised by a homebirth midwife: Homebirth midwives spend an average of one hour with their patients.

Nine-month supply of brand-name prenatals: One bottle of Trumedisyn 800 mg, which is a one-month supply, costs $129.95, though it is offered at $69.95 as a trial price. Accessed on September 26, 2012, http://www.trumedisyn.com/.


Jennifer Penick: As told to the author on September 14, 2012.

Chapter 2: Sonic Boom: The Downside of Ultrasound

couldn’t prescribe pain medication: Karen Bridges, parent, in an interview with the author, April 9, 2012.

First used for obstetrics by a Scottish doctor: Historians differ on the exact date sonograms were introduced. F. G. Cunningham et al., Williams Obstetrics, 23rd ed. (New York: McGraw Hill, 2010), 349, gives 1958 as the date. Margaret B. McNay and John E. E. Fleming, “Forty

ultrasounds had become a routine part: By the mid-1960s, obstetric ultrasound was being used in many hospitals and doctors had begun buying scanning equipment for private practices. For an extended discussion of this, see McNay and Fleming, “Forty Years of Obstetric Ultrasound 1957–1997: From A-scope to Three Dimensions,” *Ultrasound in Medicine & Biology* 25, no. 1 (1999): 3–56.


high-risk pregnancies: According to current American obstetrical practices, a high-risk pregnancy includes women carrying multiples and any mother over age thirty-five.

twenty-five ultrasounds per pregnancy: In response to the question “How Many Ultrasounds Will You Have While Pregnant?” at The Stir (blog), one mom wrote that because she was carrying twins, was considered high risk, and was punched in the stomach by her ex (which caused her to miscarry one of the twins), she had a total of twenty-five ultrasounds in the thirty-seven weeks she gestated (see http://thestir.cafemom.com/pregnancy/1686/How_Many_Ultrasounds_Will_You). While that was an unusual situation, discussions on pregnancy chat groups reveal that many women expect between four and eight ultrasounds per pregnancy.

“We recommend an eighteen-week ultrasound”: Stephanie Koontz, M.D., obstetrician, in discussion with the author, December 15, 2010.

“the skill of the technician reading the scan”: Felicia Cohen, M.D., obstetrician, in an interview with the author, August 24, 2011. When I checked this quote with Dr. Cohen for accuracy, she asked me to add the following: “Ultrasound technology has great value as a diagnostic tool, especially earlier in pregnancy, when it can detect a lot of potential complications that a physical exam alone would miss. And even late in pregnancy, it can help us decide whether an elective induction or Cesarean section is indicated, especially for complicated obstetrical patients. But as a tool for estimating fetal weight in a full-term patient? We know it’s not especially accurate for that, and I counsel my patients that the actual fetal weight could be a pound or so lower or higher” (email communication with the author, September 25, 2012).


“Ultrasound can’t promise us a healthy baby”: This and subsequent quotations: Colleen Forbes, midwife, in an interview with the author, August 12, 2011.

“My husband and I liked the tests”: Rachelle Eisenstat, parent, in an interview with the author, November 3, 2011.


“I think it’s a psychological lie for women”: Louana George, midwife, in an interview with the author, October 26, 2011.


and 3 in 100: According to the CDC, the risk is from between 1 in 100 to 1 in 200; see: CDC, “Chorionic Villus Sampling and Amniocentesis: Recommendations for Prenatal Counseling,” in *Morbidity and Mortality Weekly Report* (MMWR) 44, no. R-99 (July 21, 1995): 1–12. A more recent analysis of the risk of miscarriage from CVS conducted at just one clinic


I feel like all the testing”: Stephanie La Croix Hinkaty, parent, in an interview with the author, November 7, 2011.

a false positive rate of 5 percent: Cunningham, Williams Obstetrics, 23rd ed., 293.

“It depends on how you’re reimbursed”: Edward Linn, chair of obstetrics and gynecology, Chicago Cook County Health and Hospitals System, in an interview with the author, August 18, 2011.


Ironically, intrauterine growth restriction is: For a more extended discussion of this study, see Marsden Wagner, “Ultrasound: More Harm Than Good?” Midwifery Today, no. 50 (Summer 1999), accessed at http://www.midwiferytoday.com/articles/ultrasoundwagner.asp. When the lead author of the 1993 Lancet study followed up to test the children's intelligence at eight years of age, he and his team did not find evidence of long-term neurological damage. However, "Reassurances provided by our results do not lessen our need to undertake further studies of potential bio-effects of prenatal ultrasound scans," the authors write. “. . . In view of the widespread and liberal use of this technology we are responsible for ensuring the safety of its use. Uncertainty remains about several potential issues . . .” See John P. Newnham et al., “Effects of Repeated Prenatal Ultrasound Examinations on Childhood Outcome Up to 8 Years of Age: Follow-up of a Randomised Controlled Trial,” Lancet 364 (December 2004): 2038–2044, http://www.srefultrasound.com/Filesandpictures/Risk3.pdf.

did not reveal lasting neurological damage: Newnham, “Effects of Repeated Prenatal Ultrasound Examinations on Childhood Outcome Up to 8 Years of Age: Follow-up of a Randomised Controlled Trial.”


Parkinson’s disease: Parkinson’s disease occurs when the nerve cells in the brain that make dopamine, which is used to control muscle movement, are destroyed. Without dopamine, the nerve cells in the substantia nigra can’t send messages properly, leading to abnormal motor (tremors, rigidity) and nonmotor (mood, sleep disturbances) features, which worsen over time. See Stanley Fahn and Serge Przedborski, “Parkinson Disease,” in Merritt’s Neurology,
32 Alzheimer's: According to the Alzheimer's Foundation of America, "Alzheimer's disease is a progressive, degenerative disorder that attacks the brain's nerve cells, or neurons, resulting in loss of memory, thinking and language skills, and behavioral changes. These neurons, which produce the brain chemical, or neurotransmitter, acetylcholine, break connections with other nerve cells and ultimately die. For example, short-term memory fails when Alzheimer's disease first destroys nerve cells in the hippocampus, and language skills and judgment decline when neurons die in the cerebral cortex."


32 *all the neurons in the line*: These findings are described in Mountcastle's two seminal papers: V. B. Mountcastle et al., “Response Properties of Neurons of Cat's Somatic Sensory Cortex to Peripheral Stimuli,” *Journal of Neurophysiology* 20, no. 4 (July 1957): 374–407; and V. B. Mountcastle, “Modality and Topographic Properties of Single Neurons of Cat's Somatic Sensory Cortex,” *Journal of Neurophysiology* 20, no. 4 (July 1957): 408–434.

32 "minicolumns": "Mini" because they are microscopic (they span a tiny amount of tissue too small to see with the naked eye, 25–60 microns) and "columns" because the neurons seemed stacked upon each other.


33 *"You know that a shower curtain":* Manuel Casanova, M.D., neuroscientist, in an interview with the author, October 27, 2011.

33 *known to deform cell membranes*: In the ear, a sound wave makes the tympanic membrane vibrate, which activates mechanisms to allow you to hear. Ultrasound waves work the same way. Casanova says that the energy of sound can put pressure on, and even penetrate, the cell membrane. The cell membrane itself is a liquid formed of fats and therefore easier to penetrate than a solid. When sound puts pressure on the water surrounding the cell, that water can do two things depending on the force of the sound: (1) it can form gas bubbles from the water, which subsequently spin and implode, thereby disrupting the cell membranes of nearby cells; and (2) the water can place mechanical pressure on the cell membrane itself. Both the implosion of bubbles (otherwise known as cavitation) and the force of the water pressure can disrupt the cell membrane, making transient holes. This brief break in the boundaries of the cell can let molecules both in and out, which acutely alter how the cell behaves and which have the potential to alter its behavior long term as well.


33 *Prolonged or inappropriate ultrasound exposure*: E. L. Williams and M. F. Casanova, "Potential


But all these countries do have one thing in common: Ibid.


Sound waves with eight times the intensity: “In revising its regulations in 1993, the FDA altered its approach to ultrasound safety. The new regulations combine an overall limit of I-SPTA of 720 mW/cm² for all equipment with a system of output displays to allow users to employ effective and judicious levels of ultrasound appropriate to the examination undertaken. The new regulations allow an eightfold increase in ultrasound intensity to be used in fetal examinations.” Quote from Colin Deane, “Safety of Diagnostic Ultrasound in Fetal Scanning,” Doppler in Obstetrics, updated 2002, accessed at http://www.centrus.com.br/DiplomaFMF/SeriesFMF/doppler/capitulos-html/chapter_02.htm.


“We were super excited when”: This and subsequent quotations: Lisa Nguyen, parent, in an interview with the author, April 9, 2012.

“We never limit the number of guests you can bring”: Before the Stork 4D, http://www.beforethestork4d.com/.


“The person performing the scan may not be adequately trained”: Sheiner, Shoham-Vardi, Abramowicz, “What Do Clinical Users Know Regarding Safety of Ultrasound During Pregnancy?”


The long-term effects of tissue heating: Ibid.

“The baby looked like it was in pain”: Danielle Driscoll, parent, in an interview with the author, October 26, 2011.


“Sonography should be performed”: Cunningham, Williams Obstetrics, 23rd ed., 349.

"After the fact I was so upset": Wendy Scharp, parent, in an interview with the author, October 31, 2011.

"Every other person I know": Jennifer Cario, parent, in an interview with the author, June 5, 2012.


Prenatal office visit without ultrasound: The cost of an ultrasound varies widely, depending on the provider and the geographic region. These are prices quoted from a provider in the Pacific Northwest and thought to be fairly standard.


Louana George: As told to the author on October 26, 2011.


Chapter 3 Emerging Expenses: The Real Cost of Childbirth

For British journalist Molly Castle: Cedric Belfrage, They All Hold Swords, a memoir, quoted in Jessica Mitford, The American Way of Birth (New York: Dutton, 1992), 54-55.

from as early as 1906: Christopher Cumo, Science and Technology in 20th-Century American Life (Westport, Conn.: Greenwood Publishing, 2007), 49.


“one of the most dangerous of all poisons”: Ibid.

made other patients “wild” instead of calm: Ibid.


Some used loops of lamb’s wool: Michelle Harrison, M.D., A Woman in Residence: A Dedicated Doctor’s Personal Story of Her Struggle with the Fierce Challenges of a Major American Hospital (New York: Fawcett, 1993).


made an "educational film": Jacqueline H. Wolf, Deliver Me from Pain: Anesthesia and Birth in America (Baltimore, Md.: Johns Hopkins University Press, 2009), 56.

synthesizing it themselves: In their 1915 book, Dr. Bertha Van Hoosen and Elisabeth Ross Shaw exhort: “To the chemist of the future we must look not for the commercial scopolamine, but for the special preparation that shall excel for purity and strength.” Dr. Bertha Van Hoosen

47 **leased land for private sanatoria**: One such sanatorium was located on Riverside Drive in New York City. See Thomas Lathrop Stedman, ed., “News of the Week: Object to ‘Twilight Sleep Home,'” *Medical Record* 89, no. 2 (January 8, 1916); 70.

47 "I see almost every day comments on this": Dr. R. L. Thomas quoted in W. N. Mundy, M.D., “Twilight Sleep,” *Eclectic Medical Journal* 75 (January–December 1915): 422.

47 **The experience was so flawless**: Wolf, *Deliver Me from Pain*, 55.

47 **as late as 1974**: A certified nurse midwife practicing in Atlanta saw Twilight Sleep drugs being administered to every patient when she was doing her training in 1974. As she described to investigative journalist Jessica Mitford, "I can recall we would have hordes of laboring women—the doctors would knock them out . . . with scopolamine, an amnesia drug, heavy-duty narcotics, and sedatives. The women would be thrashing about in bed and yelling—but totally unaware of any of this. You had to put the rails up to keep them safe . . . those women were left alone in there for hours. They were drugged up and knocked out. And the babies were often born unconscious themselves. You’d have to give them drugs to reverse the narcotics the mother had, and they’d stay sleepy for days." Mitford, *The American Way of Birth*, 56–57.


48 **In 1929 the first Indiana limestone**: John Easton, senior science writer, University of Chicago Medicine, interview with the author, August 18, 2011.

48 **build the University of Chicago’s Lying-In Hospital**: Lying-in is synonymous with childbirth, but it was first used to define a postpartum woman, who was supposed to lie in (that is, rest and not go out) after she gave birth. Jan Nusche, “Lying in,” *Canadian Medical Association Journal* 167, no. 6 (September 17, 2002), accessed at http://www.cmaj.ca/content/167/6/675.full.

48 **“In the early days of Lying-In”:** John Easton, senior science writer, University of Chicago Medicine, interview with the author, August 18, 2011.


49 **“My mother-in-law was”:** Mary Fauls, doula, CenteringPregnancy director and obstetric patient liaison, John H. Stroger Jr. Hospital, Chicago, interview with the author, August 18, 2011.

49 **Other women report being hit in the face**: Schultz, “Cruelty in the Maternity Wards.”


50 **greater lifetime risk of dying of pregnancy-related complications**: Ibid., 1.

More than two women die every day: Amnesty International, *Deadly Delivery*, 1.


may actually be higher: Amnesty International, *Deadly Delivery*, 87.


could not walk unassisted for weeks: Nicole Dennis, parent, in an interview with the author, January 17, 2012.

*near misses* increased by 25 percent: Amnesty International, *Deadly Delivery*, 1.


The false positive rate: Ibid., 3.

Z. Alfavric et al., “Continuous Cardiotocography (CTG) as a Form of Electronic Fetal Monitoring (EFM) for Fetal Assessment During Labour,” *Cochrane Library*, no. 3 (July 19, 2006). A further review, published by *Cochrane Library* (an independent international non-profit partnership that assesses scientific data to promote evidence-led health practices), of 12 trials involving more than 37,000 women that compared studies of electronic fetal moni-
toring with intermittent listening to the baby’s heartbeat confirmed ACOG’s earlier findings. The reviewers discovered that though continuous monitoring was found to be associated with a reduction in already rare neonatal seizures, electronic fetal monitoring made no difference in the number of babies who died during or shortly after birth, or in the incidences of cerebral palsy. But fetal monitoring did make a significant difference in how a baby was born: continuous monitoring was associated with a significant increase in Caesarean section and instrumental vaginal births.


55 “We often see people”: Stuart Fischbein, M.D., obstetrician, in an interview with the author, November 15, 2011.

56 “She made it seem like I was an idiot”: Kristy Boone, mother, in an interview with the author, January 27, 2012.


57 Too much Pitocin: The danger of Pitocin, even in normal doses, is spelled out in detail in the “Precaution” section of the package inserts: “Maternal deaths due to hypertensive episodes, subarachnoid hemorrhage, rupture of the uterus, and fetal deaths due to various causes have been reported associated with the use of parenteral oxytocic drugs for induction of labor or for augmentation in the first and second stages of labor.” Overdosage: “Overdosage with oxytocin depends essentially on uterine hyperactivity whether or not due to hypersensitivity to this agent. Hyperstimulation with strong (hypertonic) or prolonged (tetanic) contractions, or a resting tone of 15 to 20 mm H₂O or more between contractions can lead to tumultuous labor, uterine rupture, cervical and vaginal lacerations, postpartum hemorrhage, uteroplacental hypoperfusion, and variable deceleration of fetal heart, fetal hypoxia, hypercapnia, perinatal hepatic necrosis or death. Water intoxication with convulsions, which is caused by the inherent antidiuretic effect of oxytocin, is a serious complication that may occur if large doses (40 to 50 milliunits/minute) are infused for long periods. Management consists of immediate discontinuation of oxytocin and symptomatic and supportive therapy.” Accessed at http://www.jhppharma.com/products/P1/07112011/Pitocin-42023-116-02-Package-Insert-2011. pdf JHP Pharmaceuticals, 2011.


58 They bill private and public insurance: AHA Resource Center anonymous source, in an interview with the author, April 10, 2012.


58 These hospitals’ operating costs: AHA Resource Center anonymous source, in an interview with the author, April 10, 2012.

58 “The rushed atmosphere”: Marsha Walker, registered nurse and women’s health advocate, in an interview with the author, May 24, 2011.


On her itemized bill: Ibid.

$530.29 just for: Ibid.

and may even pay: Dr. Maggie Kozel, pediatrician, in an interview with the author, April 6, 2012. See also Alex Lickerman, M.D., “A Proposal to Contain Health Care Costs: Combating Health Care Overutilization with the Careful Placement of Incentives,” Psychology Today, January 30, 2011.

“crate rate”: “Crate rate” was the term used by Edward Linn, M.D., chair of obstetrics and gynecology, Chicago’s Cook County Health and Hospitals System, in an interview with the author, August 18, 2011.

you have to deliver as many women as you can: Ibid.

C-section rate was too low: Anonymous obstetrician, in an interview with the author, October 15, 2012.

“the most important person”: MacEnulty, “Oh Baby: Ina May Gaskin on the Medicalization of Birth,” 6.


have safely delivered their babies at the Farm: MacEnulty, “Oh Baby,” 6.

C-section rate of 1.7 percent: Ibid.


“Those who are used to”: MacEnulty, “Oh Baby,” 6.


unwavering support of her loved ones: Kristen was a certified nurse midwife who had attended more than a thousand births, Lynnie was a doula who had been to seventy-five, and Alisa was a women’s empowerment leader who had also witnessed more than fifty births.


“You’re taught the model”: Stuart Fischbein, M.D., in an interview with the author, November 15, 2011.

“Birth is an inherently dangerous process”: Kurt Wiese, obstetrician, in an interview with the author, April 2, 2012.

“Childbirth is not safe”: Mary Elizabeth Soper, obstetrician, in an interview with the author, April 13, 2012.

“The resident came back to see me”: Laura Swaminathan, parent, in an interview with the author, January 19, 2012.

Norway: The estimated infant mortality rate in Norway in 2012 is 3.5 deaths per 1,000 live births. In America it is 5.98 deaths per 1,000 live births for the same year. In comparison, in Niger, a destitute country in West Africa where record keeping is not always accurate, the infant death rate in 2012 is estimated at 109.98 per 1,000 live births. (See CIA, World Factbook, "Country Comparison: Infant Mortality Rate," accessed at https://www.cia.gov/library/publications/the-world-factbook/rankorder/2091rank.html?countryName=Norway&countryCode=no&regionCode=eur&rank=209#no.)

more than three times as likely: The maternal death rate in Norway in 2008 was 7 per 100,000 live births. In the United States it was 24 per 100,000 live births in the same year. (See CIA, World Factbook, “Country Comparison: Maternal Mortality Rate,” https://www.cia.gov/library/publications/the-world-factbook/rankorder/2223rank.html?countryName=Norway&countryCode=no&regionCode=eur&rank=159#no.)
attended by medically trained midwives: Marit Heiberg, president, Norwegian Association of Midwives, in an interview with the author, September 15, 2011.

one big difference between America and Norway: Anne Flem Jacobsen, M.D., head of obstetrics, Ullevål University Hospital, in an interview with the author, September 14, 2011.


highly trained midwives, who work in collaboration: Marsden Wagner, M.D., Born in the USA: How a Broken Maternity System Must Be Fixed to Put Women and Children First (Berkeley: University of California Press, 2006), 243.

almost five times more likely: The maternal death rate in Iceland in 2008 was 5 per 100,000 live births, according to the CIA. In the United States it was 24 per 100,000 live births in the same year. (See CIA, World Factbook, “Country Comparison: Maternal Mortality Rate.”) However, according to the meticulous record keeping done by the Icelandic government, there were no maternal deaths in Iceland in 2008. (Directorate of Health Annual Report, 2008, accessed at http://www.landsplitali.is/lisalib/getfile.aspx?itemid=24179 in chapter xvii, page 25.) Regardless of which statistics are correct, it is much safer to give birth in Iceland than in America, and this has been the case for at least the past twenty years.

da doctor’s salary is set by the state: Geir Gunnlaugsson, surgeon general, Iceland, in an interview with the author, September 7, 2011.

Lawsuits . . . are not nearly as common: Ibid.

a matter of public record: Ibid.

14.6 percent: The most-up-to-date health statistics in Iceland, made available by the Directorate of Health, can be found at http://landlaeknir.is/Heilbrigdistolfraedi/Faedingar.


infant mortality . . . a fraction of ours: The maternal death rate in Iceland in 2008 was 5 per 100,000 live births. In the United States it was 24 per 100,000 live births in the same year. (See CIA, World Factbook, “Country Comparison: Maternal Mortality Rate.”) The infant mortality rate in Iceland in 2012 is 3.18 per 1,000 live births and in the United States 5.98 per 1,000 live births. (See CIA, World Factbook, “Country Comparison: Infant Mortality Rate.”)

nine months paid leave: “The Icelandic Act on Maternity/Paternity and Parental Leave underwent significant changes in the year 2000. The leave was extended from six months to nine, parents who were active in the labor market were paid 80 percent of their average salaries during the leave and the payments were to come from a specific fund, financed through an insurance levy. The leave was furthermore distributed so that fathers were given three months’ leave, mothers three months and the parents were given three months to share as they wished. The Act has been well received by society and around 90 percent of fathers take advantage of their right, using on average 97 days while mothers use an average of 180 days. It is therefore likely that more fathers than ever are active in the caring for young children.” Ingólfur V. Gisłason, Parental Leave in Iceland Bringing the Fathers In: Developments in the Wake of New Legislation in 2000 (Akureyri: Ásprent, 2007), 3, accessed at http://www.jafnretti.is/D10/_Files/parentalleave.pdf.

At the largest hospital in the country: Helga Sigurðardóttir, head midwife, post- and prepartum, Landspítali, in an interview with the author, September 12, 2011.
virtually the same: In the year 2009, 5,015 infants were born in Iceland, of whom 21 were stillborn, 4 died in the first week after birth, and 5 died from day 8 to day 365. In the year 2010, 4,903 infants were born in Iceland, of whom 17 were stillborn, 5 died in the first week after birth, and 5 died from day 8 to day 365. This is summarized in papers from Landspíl nof Iceland Health Sciences, 2001).


“We all promote normal vaginal delivery”: Hildur Harðardóttir, M.D., head of obstetrics, Landspíl no of Iceland, in an interview with the author, September 8, 2011.

Hildur, however, does not champion unmedicated birth: Hildur Harðardóttir, M.D., head of obstetrics, Landspíl no of Iceland, email communication with the author, November 15, 2011.

a midwife in Selfoss: Selfoss is a small town located east of Reykjavik.

“Doctors-in-training train with midwives”: Dagný Zoega, midwife, in discussion with the author, September 6, 2011.

“after her birth ended disappointingly in a C-section”: Anonymous parent, in discussion with the author, September 5, 2011.

birthed her second baby at home: Emma Swift, midwife, in an interview with the author, August 15, 2011.

meet face-to-face with the midwife or obstetrician: Guðrún Eggerts dóttir, head midwife, labor ward, Landspíl no of Iceland, in an interview with the author, September 12, 2011.

“We are human. We make mistakes”: Guðrún Eggertsdóttir, head midwife, labor ward, Landspíl no of Iceland, in an interview with the author, September 12, 2011.


Average charge for vaginal birth in a hospital: Ibid.

Average cost of homebirth in Southern California: Homebirth midwives charge between $2,000–$7,000 for all prenatal care and the delivery, depending on the state. The average is about $3,000. In our area, a homebirth midwife would charge between $500 and $1,000 to attend the birth and provide postpartum care.


Average time to deliver a baby via C-section: http://womenshealth.gov/pregnancy/childbirth- beyond/labor-birth.cfm.


Lauren Shaddox: As told to the author, May 26, 2011.

Chapter 4 Cutting Costs: The Business of Cesarean Birth

“We exteriorize the uterus”: Anonymous obstetrician, in an interview with the author, January 18, 2012.

more than 1.4 million women in America: The C-section rate in the United States in 2010 was 32.8 percent (of approximately 4.3 million births).


baby may be at higher risk from a vaginal birth: It was once believed that any herpes infection counterindicated vaginal childbirth because it could lead to problems for the neonate, including blindness, but while some obstetricians may insist on C-section if there are active herpes lesions on the vulva, the homebirth midwives we used for our second child’s birth told us they simply cover the sores with beeswax and have never had a problem. According to Midwifery Today: “Neonatal herpes is a remarkably rare event,” says Zane Brown, M.D., an expert on neonatal herpes and a member of the Department of Obstetrics and Gynecology at the University of Washington. “Compared to all the other possible risks in a pregnancy, the risk of neonatal herpes is extremely small. Transmission rates are lowest for women who acquire herpes before pregnancy—one study (Randolph, JAMA, 1993) placed the risk at about 0.04 percent for such women who have no signs or symptoms of an outbreak at delivery.” (Midwifery Today 3, no. 30, July 25, 2001, accessed at http://www.midiwiferytoday.com/enews/enews0330.asp.) A California study of hospital discharges over a period of ten years found no increase in neonatal herpes infections despite an increase in vaginal births, see http://www.ncbi.nlm.nih.gov/pubmed/10353880?ordinalpos=9&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum. Another study, this one of sixteen adult patients done at the Dubai Specialized Medical Center in 2004, found that topical honey applications were more effective in reducing the duration and intensity of herpes lesions than acyclovir cream, see http://www.ncbi.nlm.nih.gov/pubmed/15278008.


“At worst, C-sections can kill”: Patji Alnaes-Katjavivi, obstetrician, Oslo University Hospital, in an interview with the author, September 14, 2011.


twice as likely to be obese by age three: Susanna Y. Huh et al., “Delivery by Caesarean Section and Risk of Obesity in Preschool-Age Children: A Prospective Cohort Study,” *Archives of Disease in Childhood* (May 23, 2012), accessed at http://adc.bmj.com/content/early/2012/05/09/archdischild-2011-301141.abstract.


“I was totally robbed”: Karen Bridges, parent, in an interview with the author, November 14, 2011.


induced labor is much more likely to end in Cesarean birth: “Currently all Ventura County hospitals, except Los Robles Hospital in Thousand Oaks, have VBAC bans in place. Cottage Hospital, the only hospital offering labor and delivery in Santa Barbara, also has a de facto ban in place, in that the environment does not encourage or even allow OBs to offer this option,” Birth Action Coalition, news release, July 27, 2010.

Stuart Fischbein, M.D., obstetrician, in an interview with the author, November 15, 2011.

86 before shift change at the hospital: Ontario Maternity Care Expert Panel, Appendix K, K-1


87 If I do a breech”, Stuart Fischbein, M.D., in an interview with the author, November 15, 2011.

88 whose health plans can afford”: Wolf, *Misconceptions*, 177.

89 more than 50 percent . . . have been sued: Ibid., 8.


88 $20,228 . . . $11,114: Ramos, *Complications of Pregnancy and Childbirth in Orange County*, 18.


88 more than 50 percent . . . have been sued: Ibid., 8.


89 ‘bowel was severed during a C-section’: Suit Claims Doctor, Elkin Hospital at Fault in Death,” *Mount Airy News*, accessed at http://www.mtairynews.com/view/full_story/14710002/
Notes


90 One thirty-two-year-old woman: Ibid.

90 "I feel really bad for them": Felicia Cohen, M.D., in an interview with the author, August 24, 2011.

90 "Doctors don’t admit they make mistakes": Marsden Wagner, Born in the USA, 153.


91 “If something goes wrong”: Emma Swift, birth professional, in an interview with the author, August 15, 2011.

91 “A fundamental principle of medical practice”: Marsden Wagner, Born in the USA, 155.

91 In 2003, when Patricia Roe: This story, and the subsequent quotations, Patricia Roe, parent, in an interview with the author, March 4, 2010. A version of this story was first published in Mothering magazine (September/October 2010).


92 C-section rate in Iceland: The most-up-to-date health statistics in Iceland, made available by the Directorate of Health, can be found at http://landlaeknir.is/Heilbrigdistolfraedi/Faedingar.


92 Maternal mortality rate in Norway: Ibid.

92 Maternal mortality rate in Iceland: Ibid.

92 Number of midwives to doctors attending births in Scandinavia: Marit Heiberg, president, Norwegian Association of Midwives, in an interview with the author, September 15, 2011. While the exact number will vary by country, geographical region, and health care facility, this ratio was also confirmed by the ratio of doctors to midwives in Iceland and Norway at the hospital I visited.


93 98 percent of childbed fever: M. Best and D. Neuhauser, “Ignaz Semmelweis and the Birth

94 episiotomy increases the risk: Cunningham, Williams Obstetrics, 23rd ed., 401.

97 *It was hard because you just want*: This and subsequent quotations: Cyndi Sellers, parent, in an interview with the author, February 1, 2012.


N. J. Bergman et al., “Randomized Controlled Trial of Skin-to-Skin Contact from Birth Versus Conventional Incubator for Physiological Stabilization in 1200- to 2199-Gram Newborns,” *Acta Paediatrica* 93, no. 6 (June 2004): 779–785.


G. C. Anderson et al., “Early Skin-to-Skin Contact for Mothers and Their Healthy Newborn Infants (Review),” *Cochrane Database of Systematic Reviews*, no. 3 (2007), accessed at http://apps.who.int/rhl/reviews/CD003519.pdf.

98 separated newborns were anxious: Barak E. Morgan, Alan R. Horn, and Nils J. Bergman, “Should Neonates Sleep Alone?” *Biological Psychiatry* 70, no. 9 (November 2011): 817–825.

98 *Though they were sleeping*: This and subsequent quotations: Nils J. Bergman, M.D., M.P.H., Ph.D., independent researcher, in an interview with the author, February 6, 2012.


"Inexperienced doctors, especially": Linda Hopkins, M.D., obstetrician, in an interview with the author, February 5, 2012.

"Based on no scientific evidence": John H. Kennell, “Commentary: Randomized Controlled Trial of Skin-to-Skin Contact from Birth versus Conventional Incubator for Physiological Stabilization in 1200 g to 2199 g Newborns,” Acta Paediatrica 95, no. 1 (January 2006): 15–16.


reimbursed at a fixed rate: For a discussion of this see chapter 3, “Emerging Expenses.”


"I wonder at times why": Fogelson, “Delayed Cord Clamping Should Be Standard Practice in Obstetrics.”

"The message is that birth is dirty": MaryBeth Foard-Nance, doula and mother, in an interview with the author, February 12, 2012.


help him connect with his mom: B. Schaal et al., “Olfactory Function in the Human Fetus:


102 “milder than baby soap”: Ibid.


"When you are slathering stuff": Rex Rombach, organic perfumer, in an interview with the author, January 20, 2011.


1,500 lives every year: National Cancer Institute, “Childhood Cancers.”

claims there is substantial scientific evidence: Samuel S. Epstein, *National Cancer Institute and American Cancer Society: Criminal Indifference to Cancer Prevention and Conflicts of Interest* (Xlibris, 2011), 12.


"You can’t just trust brands": Stacy Malkan, communications director, in an interview with the author, April 11, 2012.


106 “Take your baby to the hospital”: This and subsequent quotations: Rachel Zaslow, parent, in an interview with the author, January 31, 2012.


109 1 to 2 percent of newborns: Ibid.


111 “The NICU is a moneymaker”: Stuart Fischbein, M.D., in an interview with the author, November 15, 2011.

111 “When we look at the data”: Ramshaw, “In Search of Cuts, Health Officials Question NICU Overuse.”

111 without the need for NICUs: Howson, Kinney, and Lawneds, Born Too Soon, 2.


111 ‘minimize the risk of unintended harm’: Ibid.

111 “Parents are often not aware”: Markel, “Peace of Mind . . . From Birth Onward.”

112 the threat of a call to the Department of Social Services: After Jodi Ferris had her baby in the ambulance on the way to Penn State Hershey Medical Center, she was belittled by hospital staff, and her healthy daughter was taken into protective custody because Jodi asked to be tested for hepatitis B before being administered the shot. http://www.thehealthyhomeeconomist.com/mother-who-questions-vax-at-hospital-has-newborn-taken-away/.

112 “Babies are manhandled”: MaryBeth Foard-Nance, doula, in an interview with the author, February 10, 2012.


113 protocol dictates that hospitalized patients: Linda Hopkins, M.D., in discussion with the author, February 5, 2012.

113 It was a rainy day in late January 2012: Angelina Mendenhall, parent, in an interview with the author, February 7, 2012.

113 had briefed family members beforehand: Augustine Colebrook, owner and midwife, Trillium Water Birth Center, in an interview with the author, February 1, 2011.

114 “holding the space”: Ibid.

114 until it has entirely stopped pulsing: At Trillium Water Birth Center, the cord is often not cut until after the placenta is delivered.

114 “Moms have nothing but eyes”: Augustine Colebrook, owner and midwife, Trillium Water Birth Center, in an interview with the author, February 1, 2011.


Notes

115 Average cost of one-day stay in the NICU: Emily Ramshaw, “Maternity Wards, NICUs Face Budget Scrutiny,” Texas Tribune, March 21, 2011.


115 Revenue lost by Seton Hospitals: Ramshaw, “In Search of Cuts, Health Officials Question NICU overuse.”

Chapter 6 Foreskins for Sale: The Business of Circumcision

120 “The tissue is very stretchy”: Beth Hardiman, obstetrician, Mount Auburn Hospital, in an interview with the author, March 13, 2012.

121 different experience watching a circumcision in March 2012: Anonymous nursing student, SUNY Rockland Community College, in an interview with the author, March 21, 2012.


121 Hispanics: Male Circumcision, 11.


121 geographic location: Ibid.


122 New Zealand and Australia: The Royal Australasian College of Physicians, Paediatrics & Child Health Division, Circumcision of Infant Males (Sydney, N.S.W., Australia: The Royal Australasian College of Physicians, 2010), 5.


122 “We believed it was”: This and subsequent quotations: Aseem Shukla, pediatric urologist, University of Minnesota Amplatz Children’s Hospital, in an interview with the author, July 5,
2011. Since our initial interview, Dr. Shukla has changed jobs. He is now director of minimally invasive surgery in the Division of Urology at the Children's Hospital in Philadelphia, as well as associate professor of surgery at the University of Pennsylvania Perelman School of Medicine.


124 ban on the procedure in Holland: “The official viewpoint of KNMG and other related medical/scientific organisations is that non-therapeutic circumcision of male minors is a violation of children’s rights to autonomy and physical integrity,” the Royal Dutch Medical Association explains on its website. “Contrary to popular belief, circumcision can cause complications—bleeding, infection, urethral stricture and panic attacks are particularly common. KNMG is therefore urging a strong policy of deterrence. KNMG is calling upon doctors to actively and insistently inform parents who are considering the procedure of the absence of medical benefits and the danger of complications.” “Non-therapeutic Circumcision of Male Minors (2010),” accessed at http://knmg.artsennet.nl/Publicaties/KNMGpublicatie/Nontherapeutic-circumcision-of-male-minors-2010.htm.


124 “We all awoke”: This and subsequent quotations: Deston Nokes, parent, in an interview with the author, March 1, 2012.

124 “Statistically, if you look”: Jade Eagles, parent, in discussion with the author, June 29, 2011.

125 “You put one drop of wine”: Adam Deutsch, internist, cardiologist, and parent, in an interview with the author, June 29, 2011.


125 “They exhibit all the”: Sylvia Fine, M.D., in an interview with the author, December 15, 2010.

126 many parents think: Beth Hardiman, M.D., in an interview with the author, December 13, 2010.

126 “The baby goes home from the hospital”: Georganne Chapin, executive director, Intact America, in an interview with the author, August 28, 2009.


126 In 2010 a Florida couple: Ty Tagami, “Atlanta Lawyer Wins $11 Million Lawsuit for Family in


126 “We have about two”: Anonymous physician in an interview with the author, December 1, 2010.

126 a tiny baby: The average newborn weighs about 7.5 pounds or 3.4 kilograms. He will have approximately 76.5 ml/kilogram = 260.1 ml = 8.795 fluid ounces. For more on calculating human blood volume, see http://www.med.umich.edu/irbmed/guidance/blood_draw.htm.


127 ritual Jewish circumcision is performed: Susan Markel, M.D., with Linda Palmer, What Your Pediatrician Doesn’t Know Can Hurt Your Child (Dallas, Tex.: BenBella Books, 2010), 26–27.


127 “Now that's illogical”: This and subsequent quotations: David Llewellyn, lawyer, in an interview with the author, July 25, 2011.


128 approximately 1,250,000 boys: Approximately 2,279,000 boys are currently born in the United States every year; of these, 54.7 percent are circumcised.


129 had her oldest son circumcised: Vicki Usagi, parent, in an interview with the author, March 30, 2012.


129 the problems are mostly easy to repair: Aseem Shukla, M.D., pediatric urologist, in an interview with the author, July 29, 2011.


130 “Medical skin care products”: Ibid.


more square footage than: This warehouse is 126,000 square feet, according to ATCC’s website, http://www.atcc.org/.


over $85 million: Financial information for ATCC is available at Guidestar.org.


“If you want to study”: David Bermudes, Ph.D., assistant professor, California State University at Northridge, in an interview with the author, January 17, 2012.

“So if you want to study people”: From 1991 to 2006, Bermudes worked at Yale University as a
research scientist and then as an adjunct assistant professor of clinical medicine. His lab team used cells cultured from foreskins to study *Toxoplasma gondii*, a microorganism excreted in cat feces. “Yale had a facility where they would get the trimmings from across the street from Yale–New Haven Hospital,” Bermudes told me. Instead of the commercial price of about $400 a dish, Bermudez’s lab bought the foreskin cells for only about $15. The cost of growing the cells was subsidized by government grant money: “To grow human cells is very expensive. It’s technically demanding, it requires special facilities, highly trained people, and expensive reagents (the things that are used to make the cells grow). There was grant money from the U.S. government to pay someone full time to grow those cells.”


132 “[a] complex case”: Ragusea, “CommonHealth: A $23,000 Circumcision?”

132 *one bill for a circumcision*: Pat Palmer, founder, Medical Billing Advocates of America, in an interview with the author, March 5, 2012.

132 *I see that happen all the time*: Kris Ghosh, M.D., in an interview with the author, March 2, 2012.

133 *Merrick Matthew Eagles, was born*: Robyn Eagles, parent, email communication with the author, March 26, 2012.

133 *a lot of places don’t use anything*: Anonymous labor and delivery nurse, Henry County Medical Center, in an interview with Brandeis research assistant, October 25, 2012.

134 *All you have to do*: Tora Spigner, registered nurse, email communication with the author, September 28, 2012.

134 *It’s a completely cosmetic procedure*: Beth Hardiman, M.D., in an interview with the author, December 13, 2010.


134 *Surgical Gamco Circumcision Clamp*: http://www.4mdmedical.com/gomco-circumcision-clamp-16mm.html#.UGPOHY5J9-I.


134 *Award by Fulton County jury to parents*: http://www.foxnews.com/story/0,2933,511809,00.html.

134 *Skadi Hatfield*: As told to the author on March 14, 2012.

Chapter 7 Bottled Profits: How Formula Manufacturers Manipulate Moms

138 *“the most amazing snuggle”: Claudia Jalajas, parent, in an email communication with the author, June 1, 2011.*

138 *“If I’d been apart”: Jennifer Fink, parent, in an email communication with the author, June 3, 2011.*


Notes


139 flatulence, halitosis, digestive problems: Alan M. Lake, M.D., “Food Protein-induced Proctitis/


139 necrotizing enterocolitis: S. Ip et al., Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries.

139 lining of the intestinal wall: Necros means “dead” in ancient Greek and ize is from the Greek root “to become.”


139 have asthma: “Our analysis showed that breastfeeding for at least 3 months was associated with a 27 percent (95% CI 8% to 41%) reduction in the risk of asthma in those subjects without a family history of asthma compared with those who were not breastfed. For those with a family history of asthma, there was a 40 percent (95% CI 18% to 57%) reduction in the risk of asthma in children less than 10 years of age who were breastfed for at least 3 months compared with those who were not breastfed.” S. Ip et al., Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries, 3–4.


139 childhood leukemia: “We found breastfeeding of at least 6 months duration was associated with a 19 percent (95% CI 9% to 29%) reduction in the risk of childhood ALL [acute lymphocytic leukemia]. The previous meta-analysis also reported an association between breastfeeding of at least 6 months duration and a 15 percent reduction (95% CI 2% to 27%) in the risk of acute myelogenous leukemia (AML). Overall there is an association between a history of breastfeeding for at least 6 months duration and a reduction in the risk of both leukemias (ALL and AML).” S. Ip et al., Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries, 5.


139 less likely to be abused or neglected: Lane Strathearn et al., “Does Breastfeeding Protect Against Substantiated Child Abuse and Neglect? A 15-Year Cohort Study,” Pediatrics 123, no. 2 (February 1, 2009): 483–493.


140 supplementation with other fluids should not: In the 1960s it was popular to supplement breastfeeding with bottles of water, a practice that continues in many parts of the world (to the great detriment of infants in developing countries who often die needlessly as a result of drinking contaminated water). My three older brothers and I were given bottles of water because breast milk was thought not to be adequately hydrating.


140 our breastfeeding rates are among the lowest: Save the Children, Nutrition in the First 1,000 Days: Save the World’s Mothers 2012 (Westport, Conn.: Save the Children, May 2012), 39.

140 only 77 percent of American women: “Breastfeeding Report Card 2012, United States: Outcome
Indicators,” Centers for Disease Control and Prevention, accessed at http://www.cdc.gov/breastfeeding/data/reportcard2.htm. Statistics on how many American women breastfeed vary depending on who is collecting the data. The numbers have one thing in common: They are all much lower than they should be to promote optimal child and maternal health.


nearly 3 million babies: Many women who identify themselves as breastfeeding moms give their infants formula as well. Because of this, the number of exclusively nursed American infants is probably much lower than these statistics indicate.

“I just assumed that breastfeeding”: Annie Urban, parent, in an interview with the author, May 18, 2011.


America ranked last: Save the Children, Nutrition in the First 1,000 Days, 42.

Breastfeeding was much more difficult: Leslie Ott, parent, in an interview with the author, May 17, 2011.

“She said she was really hungry”: Ruby Wentz, parent, in an interview with the author, May 30, 2011. Many hospitals have a nonevidence-based hypoglycemia protocol. Falling blood sugar, or hypoglycemia, is a normal occurrence after birth. Though most, if not all, babies have a drop in blood sugar immediately following birth, their blood sugar will start to rise by three hours of age or so. Large babies are not necessarily at higher risk of hypoglycemia unless the mother was diabetic (Ruby was not). Then they need to be watched very carefully because extreme low blood sugar that lasts for too long can result in brain damage, since the brain needs glucose for fuel. But breastfed babies have a compensatory mechanism whereby ketone bodies elevate during the couple of hours after birth that it takes to normalize blood glucose values. The brain uses ketone bodies as an alternative fuel source until the baby starts eating more. For more information see N. Wight, K. A. Marinelli, and the Academy of Breastfeeding Medicine Protocol Committee, “ABM Clinical Protocol #1: Guidelines for Glucose Monitoring and Treatment of Hypoglycemia in Breastfed Neonates,” Revision June 2006, Breastfeeding Medicine 1, no. 3 (2006): 178–184.

When she gave birth at a hospital in Downey, California: Lana Wahlquist, parent, in discussion with the author, April 4, 2012.

the hospital pediatrician was concerned: Melissa Bartick, M.D., parent, her birth story and subsequent quotations from an interview with the author, March 9, 2011.


146 “I work at Cedars-Sinai”: Jay Gordon, pediatrician, in an interview with the author, April 2, 2012.

146 “Every mother is told”: Marsha Walker, lactation consultant, in an interview with the author, May 24, 2011.


147 first took a job at Narragansett Bay Pediatrics: She started working for that practice in 1997.

147 Musial liked the practice because: This and subsequent quotations: Sandra Musial, M.D., pediatrician, in an interview with the author, March 30, 2011.

147 “Most pediatricians don’t receive adequate”: Nancy Mohrbacher, lactation consultant, in an interview with the author, August 1, 2011.

148 “Compared to other practices”: Maggie Kozel, M.D., pediatrician, in an interview with the author, April 6, 2011.


148 Abbott made record earnings selling: Ibid., 53.


148 sales . . . grew 17 percent: Ibid., 7.


149 together donating $1.5 million: The AAP puts them in the $750,000 and above category but does not disclose the actual dollar amount.


149 Nestlé bought Gerber from Novartis: “Novartis Completes Its Business Portfolio Restructuring,


149 donated more than $6.7 million: Numbers totaled from the AAP News, Honor Roll of Giving (2005–2006 to 2009–2010), which is published each fall for the previous fiscal year and made available to members. Publication courtesy of the AAP.


149 ‘something came up’: Deborah Jacobson, media relations manager, AAP, in email communication with the author, July 6, 2012.

149 “The AAP accepts corporate funding”: Ibid.

150 “I’m sorry, but that is”: Deborah Jacobson, media relations manager, AAP, in email communication with Melissa Chianta (researcher and fact checker for the author), September 27, 2012.


150 “The vast majority of doctors”: This and subsequent quotations: Stefan Topolski, M.D., assistant professor of Family and Community Health at the University of Massachusetts, in discussion with the author, June 21, 2012.

151 “benefited significantly from”: Mead Johnson Nutrition, Growing Stronger Every Day, 2.

151 “nourish the world’s children”: Ibid., inside front cover.


151 found guilty five times: Ibid.


152 “You caught me off guard”: Christopher Perille, spokesperson, Mead Johnson, in an encounter with the author, August 16, 2011.

152 “She wasn’t helpful at all”: Margaret Pemberton, parent, in an interview with the author, June 20, 2011.


153 They must then pass a rigorous exam: Breastfeeding-education.com, a website maintained by IBCLC Gini Baker, explains the current requirements for becoming an Internationally Board


154 shocked when she received a package: Erin Kotecki Vest, patient, in an email communication with the author, August 25, 2011.

154 Erin, who was too sick: Ibid. When Erin called the hospital to complain, they denied having given out her contact information. Recovering from major surgery, she did not have the energy to pursue the matter further.

154 more than 95 percent of mothers given free formula: Marsha Walker, Selling Out Mothers and Babies: Marketing of Breast Milk Substitutes in the USA (Weston, Mass.: National Alliance for Breastfeeding Advocacy, 2001), 13.

154 In almost every hospital: As of May 2012, there were 143 U.S. Baby Friendly hospitals and birth centers, according to Baby Friendly Hospital Initiative USA, accessed on June 30, 2012, at http://www.babyfriendlyusa.org/eng/03.html.


154 formula sales representatives have often: Marsha Walker, Selling Out Mothers and Babies, 27.

155 there were reports of nurses: Ibid.


156 “There’s a bag we get”: Rosemarie Mamei Tamba, nurse, head of the Maternal Child Nursing Division, John H. Stroger Jr. Hospital, in discussion with the author, August 24, 2011.

156 According to the procurement office: Sonja Vogel, communications and marketing coordinator, John H. Stroger Jr. Hospital and ACHN, Cook County Health & Hospitals System, in an email communication with the author, October 27, 2011.


156 "one of the key things": This and subsequent quotations: Katie Brewer, senior policy analyst, American Nurses Association, in an interview with the author, June 21, 2011.
“Nurses are often the front line”: Katie Brewer, e-mail communication with the author, June 15, 2011.


received a phone call from Similac: Margaret Cividino, parent, in an interview with the author, June 7, 2011.

“No one disputes the association”: Lise Eliot, What’s Going On in There?, 184.

“No one disputes the association”: Lise Eliot, What’s Going On in There?, 184.

received a phone call from Similac: Margaret Cividino, parent, in an interview with the author, June 7, 2011.

“Formula is a highly processed: Since 2002 formula manufacturers have been adding DHA and RHA—and heavily promoting these new ingredients in advertising campaigns—because these fatty acids, naturally found in breast milk, are crucial to brain and eye development. See Charlotte Vallaeys, Replacing Mother—Imitating Human Breast Milk in the Laboratory (Cornucopia, Wisc.: Cornucopia Institute, 2008), 1, accessed at http://cornucopia.org/DHA/DHA_Executive_Summary_web.pdf.


peers at breast milk under the microscope: Carl Morten Laane, professor of molecular biology, University of Oslo, in discussion with the author, September 16, 2011.

“The cow milk has some resemblance”: Carl Morten Laane in an email communication with the author, September 27, 2011.

“About 80 percent: Save the Children, Nutrition in the First 1,000 Days: Save the World’s Mothers 2012, ”Breastfeeding Policy Scorecard for Developed Countries,” 43.

“Now I know that everything”: This and subsequent quotations: Gro Nylander, M.D., Ph.D., obstetrician, in an interview with the author, September 18, 2011.


In Norway . . . manufacturers are forbidden: “Sales in Europe accounted for a small percentage
of our global business and are heavily concentrated in specialty formulas . . . that are primarily distributed through pharmacies,” Mead Johnson notes in its 2010 annual report. Mead Johnson Nutrition, Growing Stronger Every Day, 2.


163 Number of infant deaths that would be avoided: Ibid.


163 Formula industry donations to the AAP: Ibid.


163 Cost of formula for an infant for 12 months: A 23.4-ounce tub of Enfamil premium costs around $26. Each tub has twenty-one servings (one serving equals one bottle). If a baby has an average of five bottles a day, then one tub will last around four days. There are ninety-one four-day segments in a year. Ninety-one times twenty-six equals $2,366.

163 Maria: As told to the author by Maria on June 2, 2011.

Chapter 8 Diaper Deals: How Corporate Profits Shape the Way We Potty

167 “I’d tell her”: This and subsequent quotations: Angela Akins, parent, in discussion with the author, July 15, 2011.


167 “toileting troubles are epidemic”: Steve J. Hodges, M.D., with Suzanne Schlosberg, It’s No Accident: Breakthrough Solutions to Your Child’s Wetting, Constipation, UTIs, and Other Potty Problems (Guilford, Conn.: Lyons Press, 2012), 3.

was told by her son's preschool teachers: Tiffany Vandeweghe, parent, in an interview with the author, February 27, 2012.

"I began to realize if you allow": T. Berry Brazelton, M.D., pediatrician and founder, Child Development Unit, Boston Children's Hospital, in an interview with the author, December 13, 2010.


These diapers were bulky, expensive: Heather McNamara, executive director, Real Diaper Association, in an interview with the author, June 30, 2011.

replace the cellulose in the diaper's core: Gladwell, “Annals of Technology.”

in this case superabsorbent synthetic: Ibid., 132.


Despite the fact that the company knew: Ibid., 133.

sixty million sample packets to American households: Ibid., 134.

Procter & Gamble could no longer ignore: Ibid., 130.

their babies' bottoms were breaking out: Ibid., 152.


Personable, polite, and enthusiastic, Brazelton: Brazelton Papers. Countway Library of Medicine, Boston.

"I had to watch them": This and subsequent quotations: T. Berry Brazelton, M.D., pediatrician and author, in an interview with the author, December 13, 2010.


He wrote three more books: Ibid.


"a fairly blatant conflict of interest": As quoted in Goode, “Two Experts Do Battle Over Potty Training.”


From 1983 until the last one: According to the show's producer, there were 221 episodes of What Every Baby Knows plus several one-hour specials and 26 episodes of Brazelton on Parenting, for a total of more than 247 episodes. They started producing the shows in 1983 and mastered the last one in May 2000.

"During the 1980s you had": Henry O'Karma, producer and founder, New Screen Concepts, in an interview with the author, July 18, 2011.


"Procter & Gamble came to me": T. Berry Brazelton, M.D., pediatrician and founder, Child
Development Unit, Boston Children’s Hospital, in an interview with the author, December 13, 2010.

173 “It took me a long time”: As quoted in Goode, “Two Experts Do Battle Over Potty Training.”

173 Brazelton worried that accepting: This and subsequent quotations: T. Berry Brazelton, M.D., in an interview with the author, December 13, 2010.

174 “I don’t like that”: When my research assistant followed up with Brazelton’s executive assistant, Suzanne Otcasek, via email, to ensure that what I had written was accurate, Suzanne responded on Brazelton’s behalf that the way I framed our conversation, “gives the impression that he holds himself to a more lenient standard than the one to which he holds other physicians. His position is that physicians need detailed knowledge about whatever they recommend, and their recommendations should never be motivated or influenced by their own financial interests. Again, the services for which Procter & Gamble paid Dr. Brazelton allowed him to express his carefully researched conclusions that he had arrived at long before engaging with that company and that did not change in any way as a result of that engagement.” (Suzanne Otcasek, executive assistant to Dr. T. Berry Brazelton, in email communication with Melissa Chianta, July 13, 2012.)

174 starting potty training late: Sonna, Early-Start Potty Training, 29.


174 Zoe was suspended: Ibid.


175 “I have always been a proponent”: As quoted in Scott Tennant, “Toilet Training More Beneficial When Started Early: Incontinence Rates Increase in Children Who Begin Training Later, Data Show,” Urology Times, April 1, 2010.

175 “Potty training was not such”: This and subsequent quotations: Jean-Jacques Wyndaele, M.D., urologist, in an interview with the author, July 18, 2011.

176 an average of $27 million per day: Approximately 4.29 million children are born each year and they stay in diapers for approximately three years. I took the number of American children born per year multiplied by the average toilet training age of three years, times average number of diapers per day (between six and eleven), times the cost of the diapers.

177 Leslie and I sit: This and subsequent quotations: Leslie Becknell Marx, former assistant brand manager, Procter & Gamble, in discussion with the author, April 7, 2011.

178 “We don’t give away Pampers”: This and subsequent quotations: Kai Abelkis, sustainability coordinator, Boulder Community Foothills Hospital, in an interview with the author, January 27, 2010. A version of this discussion about the environmental harm of plastic diapers originally appeared in Mothering magazine.

179 “I know toddlers”: Shawna Cummings, parent, in an interview with the author, November 23, 2009.


“Dioxins can be toxic”: This and subsequent quotations: Jay Bolus, vice president of technical operations, MBDC, in an interview with the author, January 15, 2010.

the most vulnerable to dioxins: “Dioxins and Their Effects on Human Health,” World Health Organization Media Centre Fact Sheet, no. 225 (May 2010), accessed at www.who.int/mediacentre/factsheets/fs225/en/.

more than a good idea”: Gladwell, “Annals of Technology.”

Instead, the spokesperson will become: Procter & Gamble customer-service representative in an interview with Tara Crist (Southern Oregon University student research assistant), November 11, 2009.

“RECALL PAMPERS DRY MAX”: Mandy Fonck, Rebecca Boxer, Jenniffer Brown, June and July 2011, comments on “RECALL PAMPERS DRY MAX DIAPERS!” Facebook page.


“We’ve been accused of many things”: Ibid.


“You want to think”: Deborah Gordon, M.D., family physician, in an interview with the author, January 22, 2010.

“We’d rather put”: Kai Abelkis, sustainability coordinator, Boulder Community Foothills Hospital, in an interview with the author, January 27, 2010.


“It just was the way”: This and subsequent quotations: Heather McNamara, parent, in an interview with the author, June 30, 2011.


184 *A traveler to Ghana, Togo, Benin*: These are all countries that I have visited and this is an experience I have had firsthand.
186 “I began to realize”: Ibid.
186 “Seasoned grandmothers would tell me”: Christine Gross-Loh, in an interview with the author, April 13, 2012.
186 remembers sitting in her living room: This and subsequent quotations: Melinda Rothstein, parent, in an interview with the author, July 11, 2011.
187 wearing svelte German-made baby underwear: Kelley, “A Fast Track to Toilet Training for Those at the Crawling Stage.”
187 “I’ll never forget that moment”: Tiffany Vandeweghe, parent, in an interview with the author, February 27, 2012.
189 Cost of cloth diapers: Twenty-four diapers times $20 per diaper. Many cloth diapers cost much less but many families buy more than two dozen diapers.
189 *Errol Matherne*: Errol Matherne, parent, as told to the author, February 10, 2012.

Chapter 9 Boost Your Bottom Line: Vaccinating for Health or Profit?

192 *diphtheria, pertussis, tetanus*: Until 1996 whole cells were used in diphtheria-tetanus-pertussis vaccine (DTP). One of the ingredients of this vaccine was the pertussis toxin, which is used in laboratory research on animals to induce severe brain swelling. Now babies are given the vaccine with pertussis in an attenuated (weakened) form: DTaP. The FDA keeps a complete list of vaccines licensed for use in the United States, which can be found at U.S. Food and Drug Administration, Vaccines, Blood & Biologics, “Complete List of Vaccines Licensed for Immunization and Distribution in the US,” accessed at http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM093833. A version of this discussion about childhood vaccines first appeared in *Mothering* magazine.
192 *At four months of age a baby receives*: Ibid.
192 *more than* four times *as many injections*: According to Barbara Loe Fisher, executive director of the National Vaccine Information Center (NVIC), in the late 1970s, most children received five DPT shots (fifteen doses of three vaccines) and five doses of oral polio virus at two, four, six, and eighteen months of age, and between four and six years, plus one dose of MMR
between twelve and fifteen months. More information about vaccine licensure dates can be found at www.immunize.org/timeline, a website operated by the Immunization Action Coalition and funded by the CDC. See also Paul A. Offit, M.D., and Louis M. Bell, M.D., *Vaccines: What You Should Know* (Hoboken, N.J.: John Wiley & Sons, 2003), 99.


192 “I don’t know any rational person”: Centers for Disease Control and Prevention community meeting, Ashland Middle School, Ashland, Oregon (January 10, 2009).


193 98 percent of the world: I got this number by the following calculation: The U.S. State Department recognizes 195 independent countries in the world. Six of them, according to the WHO, still have some cases of wild polio. U.S. Department of State, “Independent States in the World,” Fact Sheet, Bureau of Intelligence and Research, January 3, 2012, accessed at http://www.state.gov/s/inr/rls/4250.htm.

194 “One instructor didn’t vaccinate”: Ann Miller, registered nurse, in an interview with the author, January 24, 2011.


194 Bernadine Healy . . . publicly critiqued the current schedule: Bernadine Healy signaled this fact on Larry King Live: “I think there is so much more to learn. Simple things like a comparison of children who have and have not been vaccinated. This is something that we have talked about doing for many years. It has not been done. It can be done through various models, through case control model models. It can be done retrospectively. It has to be done.” CNN Larry King Live, “Jenny McCarthy and Jim Carrey Discuss Autism; Medical Experts Weigh In,” April 3, 2009, accessed at http://transcripts.cnn.com/TRANSCRIPTS/0904/03/lkl.01.html.

194 “How can these vaccinations”: Michele Pereira, registered nurse, in an interview with the author, June 28, 2012.


196 their infant has little, if any, chance of getting the disease: The only plausible way an American infant in a hepatitis B–negative home could get it is if he needed a blood transfusion and was exposed to hepatitis B–tainted blood. While this can be common in developing countries that lack strict controls, donated blood in the United States is carefully screened and is tainted with hepatitis B only 1 in every 65,000 to 500,000 blood units (Robert W. Sears, *The Vaccine Book: Making the Right Decision for Your Child*, Completely Revised and Updated [New York: Little, Brown & Company, 2007], 47). An older child could theoretically contract the disease from another child if he were bitten or had sexual contact.
Only thirty infants a year become infected with hepatitis B, with virtually all of these cases contracted from their mothers. Sears, *The Vaccine Book*, 50.

“If I’m a rational person”: The hepatitis B vaccine was licensed in 1981 and recommended for people in known high-risk groups. In 1991 the recommendation was extended to include all infants.


abnormal neurodevelopmental responses: L. Hewitson, “Delayed Acquisition of Neonatal Reflexes in Newborn Primates Receiving a Thimerosal-Containing Hepatitis B Vaccine:

198 Rotavirus is most severe in the first year: Sears, The Vaccine Book, 63.


198 1 in 400,000 children under five: The total number of children under 5 in 2005 in the United States (approximately 20.5 million according to the U.S. Census Bureau) divided by 50, the average number of deaths from rotavirus.

198 the chance of an American baby: The average number of deaths from rotavirus divided by the total number of children under 5 in 2005 in the United States.


199 Wyeth’s RotaShield, was taken off the market: Department of Health and Human Services, Centers for Disease Control and Prevention, “Vaccines and Preventable Diseases: Rotavirus Vaccine (RotaShield) and Intussusception,” accessed at http://www.cdc.gov/vaccines/vpd-vac/vrotavirus/vac-rotashield-historical.htm.

199 During the first months when Rotateq: Sears, The Vaccine Book, 68.

199 About 20 percent of the infants: Ibid., 66.

199 bloody stools: Ibid., 67.


199 hives: Ibid.

199 During safety trials, 1 in 1,000: Sears, The Vaccine Book, 66.


199 “The pediatrician said it was a fluke”: John E. Trainer III, M.D., family physician, in an interview with the author, January 23, 2009.

199 “I did research at Children’s Hospital”: Lyn Redwood, in an interview with the author, May 17, 2011.

200 “During my training years”: Sears, The Vaccine Book, 69.


Some countries, like Spain, recommend a child get vaccinated against chicken pox at age ten if he has not already been exposed to the disease. Germany recommends universal varicella vaccination—see http://www.ncbi.nlm.nih.gov/pubmed/20600490—as do Canada, Australia, and Japan.


200 the vaccine was first designed: Barbara Loe Fisher, director, National Vaccine Information Center, in personal communication with the author, January 15, 2009.


201 “We now have an epidemic”: Barbara Loe Fisher, vaccine safety advocate, in personal communication with the author, January 15, 2009.


201 Other studies have estimated increases as well: G. S. Goldman, “Cost-Benefit Analysis of Universal Varicella Vaccination in the U.S. Taking into Account the Closely Related Herpes-Zoster Epidemiology,” *Vaccine* 23, no. 25 (May 9, 2005): 3349–3355.


201 “Shingles was with us”: This and subsequent quotations: John Grabenstein, senior medical director, Merck & Co., personal communication with the author, April 13, 2009.


202 Two children in Dr. Sears’s practice: Robert Sears, M.D., pediatrician, in personal communication with the author, February 10, 2009.

203 “I think Joey was”: Sarah Lipoff, parent, in personal communication with the author, April 25, 2011.

203 Her husband is the director: William Redwood was included as one of two top emergency room doctors in a peer-nominated list of Atlanta’s top twenty doctors in *Lifestyle Magazine’s “2011 Top Docs.”*

204 “I used to preach vaccinations”: Lyn Redwood, member, Board of Health for Fayette County, Georgia, in an interview with the author, February 1, 2011.
“Nobody used the A-word”: Lyn Redwood, member, Board of Health for Fayette County, Georgia, in an interview with the author, May 17, 2011.

On a test that was like a baby IQ: Ibid.


an exposure to mercury . . . approximately 125 times: Lyn Redwood, member, Board of Health for Fayette County, Georgia, in an interview with the author, May 17, 2011.


In 1981, Kimberley was nine weeks old: Press conference, May 10, 2011, 12:00 p.m., U.S. Court of Claims, 717 Madison Place, NW, Washington, D.C.


changes in how we define or identify autism: Mark F. Blaxill, “What’s Going On? The Question of Time Trends in Autism,” Public Health Reports 119 (November–December 2004), accessed at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1497666/pdf/15504445.pdf. The synopsis of this report reads: “Increases in the reported prevalence of autism and autistic spectrum disorders in recent years have fueled concern over possible environmental causes. The author reviews the available survey literature and finds evidence of large increases in prevalence in both the United States and the United Kingdom that cannot be explained by changes in diagnostic criteria or improvements in case ascertainment. Incomplete ascertainment of autism cases in young child populations is the largest source of predictable bias in prevalence surveys; however, this bias has, if anything, worked against the detection of an upward trend in recent surveys. Comparison of autism rates by year of birth for specific geographies provides the strongest basis for trend assessment. Such comparisons show large recent increases in rates of autism and autistic spectrum disorders in both the U.S. and the U.K. Reported rates of autism in the United States increased from 3 per 10,000 children in the 1970s to 30 per 10,000 children in the 1990s, a 10-fold increase. In the United Kingdom, autism rates rose from 10 per 10,000 in the 1980s to roughly 30 per 10,000 in the 1990s. Reported rates for the full spectrum of autistic disorders rose from the 5 to 10 per 10,000 range to the 50 to 80 per 10,000 range in the two countries. A precautionary approach suggests that the rising incidence of autism should be a matter of urgent public concern.”

1 in every 150 children: In 2009 the Centers for Disease Control and Prevention’s Autism and Developmental Disabilities Monitoring Network estimated that 1 in every 150 eight-year-olds in the United States has an autism spectrum disorder. (Centers for Disease Control and Prevention, Autism Information Center, “Frequently Asked Questions—Prevalence.”)


“As a parent I researched”: Lyn Redwood, interview with the author, February 1, 2011.

if vaccines could cause long-term immune dysfunction: Centers for Disease Control Community Meeting, Ashland Middle School, Ashland, Oregon (January 10, 2009).

 “[T]he technology used to make”: “Vaccine Technology Outpacing Ability to Predict Adverse Events,” FDaer Says,” Pink Sheet, November 29, 1999, 8.

“in every office visited there were”: Ibid., 9.


“Ther's a benefit from vaccination”: Heather Zwickey, professor of immunology, National College of Natural Medicine, in an interview with the author, November 11, 2010.

Michele Pereira’s instructors informed students that: Michele Pereira, registered nurse, in an interview with the author, June 28, 2012.

the children developed allergies at significantly lower rates: K. L. McDonald, “Delay in Diphtheria, Pertussis, Tetanus Vaccination Is Associated with a Reduced Risk of Childhood Asthma,” Journal of Allergy and Clinical Immunology 121, no. 3 (March 2008): 626–631.


asthma, allergies, Crohn’s disease: In March 2005, the National Institutes of Health issued a lengthy report to Congress stating that autoimmune diseases, which include “more than 80 chronic, and often disabling, illnesses that develop when underlying defects in the immune system lead the body to attack its own organs, tissues, and cells,” and “affect 14.7 to 23.5 million people [in the United States], and—for reasons unknown—their prevalence is rising.” National Institutes of Health, “Progress in Autoimmune Diseases Research,” March 2005, accessed at http://www.niaid.nih.gov/topics/autoimmune/Documents/adccfinal.pdf. According to the CDC, 7.1 million children currently suffer from asthma in 2009 (CDC, FastStats, “Asthma,” www.cdc.gov/nchs/FASTATS/asthma.htm). According to a comprehensive CDC report, “Asthma prevalence rates among children remain at historically high levels following dramatic increases from 1980 until the late 1990s” (http://www.cdc.gov/nchs/data/ad/ad381.pdf).

statistically significant increase in type 1 diabetes: John Barthelow Classen, “Risk of Vaccine Induced Diabetes in Children with a Family History of Type 1 Diabetes,” Open Pediatric

"Fatal allergies and autoimmune diseases": This and subsequent quotations: Larry Palevsky, M.D., pediatrician, in an interview with the author, March 1, 2011.


Merck saw their sales increase to $46 billion: In 2003 Merck made just over $1 billion in vaccine sales.


688 million pounds: Ibid.


Nick is an “executive immunization specialist”: Nick Servies, LinkedIn profile, accessed at http://www.linkedin.com/in/nickservies.

I would have to submit a list of questions in writing: This telephone exchange (it would be too much of a stretch to call it an “interview,” “noninterview” might be a more appropriate term) took place between Nick Servies (GlaxoSmithKline representative) and the author on April 22, 2011.

almost $7.4 million: The exact figure was $7,412,685.


217 There have been no cases of wild polio: http://www.cdc.gov/vaccines/vpd-vac/polio/dis-faqs.htm.


217 Nigeria, Afghanistan, Pakistan: As well, twelve other countries in Africa have been affected by poliovirus linked to Nigeria, including Benin, Botswana, Burkina-Faso, Cameroon, Central African Republic, Chad, Côte d’Ivoire, Ethiopia, Ghana, Guinea, Mali, and Togo. By February 2012, only three countries in the world, Afghanistan, Nigeria, and Pakistan, are still experiencing outbreaks of wild polio. (World Health Organization, “Poliomyelitis,” Fact Sheet 114, February 2012, accessed at http://www.who.int/mediacentre/factsheets/fs114/en/index.html.)


218 about 20 percent of his two thousand patients: This and subsequent quotations: Robert W. Sears, M.D., pediatrician, in an interview with the author, February 10, 2009.


218 serious Hib infections: Sears, The Vaccine Book, 8.


218 Hib bacteria is actually common in the human body: Sears, The Vaccine Book, 1.

218 complications like pneumonia from Hib are very rare: Ibid., 3.

219 she thought about vaccinating: Rebecca Mehta, parent, in an interview with the author, January 19, 2011.


219 61 percent of pediatricians reported supporting: Aaron Wightman, M.D., “Washington State


220 “They’ve never had anything”: Tasha Pittser, parent, in an email communication with the author, September 24, 2012.

220 One pediatrician responded with open belligerence: Jake Marcus, parent, in an interview with the author, May 18, 2011.

221 “Some doctors are very adamant”: Kenneth Saul, M.D., pediatrician, in an interview with the author, May 29, 2011.

221 “I have asked if I have been”: Kenneth Saul, M.D., pediatrician, email communication with the author, May 19, 2012.


221 “These findings demonstrate”: Ibid., 1427.


222 The same holds true in Norway: Children who attend Waldorf (Steiner) schools are sometimes undervaccinated or unvaccinated.


223 Michelle Maher Ford: As told to the author by Michelle Maher Ford, parent, April 22, 2011.
Chapter 10 Sick Is the New Well: The Business of Well-Baby Care


228 *more than thirty million courses of antibiotics:* Markel and Palmer, *What Your Pediatrician Doesn’t Know Can Hurt Your Child*, 203.


228 *well-child care accounts for 57 percent:* Ibid.


229 *to help make sense of what’s going on:* This and subsequent quotations: Edward Schor, M.D., policy analyst and pediatrician, in an interview with the author, February 14, 2011.


“Pediatricians look at me”: Sharon Rising, certified nurse midwife and founder, Centering Healthcare Institute, in an interview with the author, March 18, 2012.

These days Kozel does a mean imitation: This and subsequent quotations: personal communication, February 21, 2011. For the longer version of why Dr. Kozel chose to leave pediatrics, see also her memoir, The Color of Atmosphere: One Doctor’s Journey In and Out of Medicine, which also informed this chapter.


Women who were breastfeeding: This and subsequent quotations: Jay Gordon, M.D., pediatrician and author, in an interview with the author, April 2, 2012.


For my clinical practice: This and subsequent quotations: Jeffrey Brosco, M.D., professor of clinical pediatrics, University of Miami, in an interview with the author, April 2, 2012.

Today Sophia is eleven: Jennifer Rosner, parent, in an email communication with the author, April 4, 2012.


use of growth charts has led pediatricians to: Ibid., 28–29.


236 also an ingredient in antifreeze: Low molecular weight polyethylene glycol is the key ingredient in automotive antifreeze. In this form it is lethal to ingest.


238 “The rep for Zithromax”: Zithromax is a broad-spectrum antibiotic available by prescription.

239 Pedialyte: An electrolyte drink, like Gatorade, made by Abbott Laboratories, the global health care and medical research company that also makes Similac infant formula.

239 grape-flavored Pedialyte: Pedialyte also comes in bright orange (fruit), bright red (strawberry), bright pink (bubble gum), and murky white (unflavored).


239 Red #40: Ibid.


240 “She will come to my house”: Elizabeth Hunter, parent, in email communication, June 27, 2012.

241 “The mom and baby in the first year”: This and subsequent quotations: Laura Wise, M.D., family physician, in an interview with the author, March 21, 2012.

242 there are now thirteen health centers: Sharon Rising, founder, CenteringParenting and Centering Healthcare Institute, in an interview with the author, March 31, 2012.

242 “These residents are learning”: Ada Fenick, M.D., pediatrician and assistant professor of pediatrics, Yale School of Medicine, in an interview with the author, April 2, 2012.

243 Salary of Average American: U.S. Social Security Administration 2012 Average Wage Index.


243 Amount drug companies gave in free samples: M-A Gagnon and J. Lexchin, “The Cost of Pushing Pills.”

243 Stephanie Precourt: Stephanie Precourt, parent, as told to the author, February 8, 2012.

Chapter 11 So Where Do We Go from Here?


249 Norway’s family-friendly policies: The information about Norwegian leave policies comes from Kirsti Bergstø, state secretary, in an interview with the author, September 15, 2011.


Glossary of Terms

Acknowledgments

If it takes a village to raise a child, it took an international metropolis to write this book. I owe a debt of gratitude to so many people, especially the men and women on three continents who openly shared their birth stories, parenting struggles, small triumphs, and bewildering defeats with me. Though I was not able to include every story, I learned something from each of the hundreds of interviews I conducted. Many of the parents I spoke to are named on these pages, others preferred to tell their stories anonymously, but all of you know who you are and you are greatly appreciated. Thank you.

Gillian MacKenzie, the best agent in the universe, was still willing to talk to me after I wasted a ridiculous amount of time searching for a place that served coffee in ceramic mugs instead of product-placement paper cups when we first met at the Roosevelt Hotel. Gillian has been a tireless champion, hand-holder, editor, and friend throughout the conception, gestation, and birth of this book. No one could wish for a better agent—or a better editor. Alexis Gargagliano is both a thoughtful reader and an insightful, smart, and spot-on critic. If this book reads well, it is because of her. Alexis helped me tease out the thornier issues and fixed mistakes on almost every page. I feel honored to have her as an editor, and even more honored to have been able to share a tiny bit in the joy of her first pregnancy (and advise her on cloth diapering and good books to read). Thanks to Alexis’s lightning-quick and completely fearless assistant Kelsey Smith, as well as to all the other hardworking, diligent, and intelligent folks at Scribner (the best publishing house in the world), including Samantha Martin, who first saw the potential in this book; Susan Moldow, executive vice president; and vice president and editor in chief, Nan Graham. Scribner’s attorney, Elisa Rivlin, as both a lawyer and a reader, has helped make this a better book, and I am grateful to my publicist, Sophie Vershbow, for her tireless support of this project.

This project would not have been possible without Melissa Chianta, a.k.a. the Most Diligent Fact Checker in the World, whom I first met when I was a contributing editor at *Mothering* magazine. Melissa has proved as indefatigable as she is persistent. Hanging in over the long haul and even canceling a trip so we could finish on time, Melissa has meticulously checked every fact and fixed countless errors. Any remaining mistakes are mine.

My in-real-life writing group, Debra Murphy, Rachel Murphy, and Debbie Zaslow, patiently read and reread drafts, caught countless mistakes, and provided me with invaluable feedback. My goal buddy, Marina Krakovsky, helped keep me on track. My friend and best-selling author extraordinaire, Alisa Bowman, proved a master at crafting abstruse concepts into readable prose and generously lent me a sympathetic ear when I needed it most. My research assistant, Caitlin Simmons, transcribed hours of interviews. My thirteen-year-old Waldorf mentee Lucy Neubeck organized my files. Friend, colleague, and diaper expert Christine...
Acknowledgments

Gross-Loh provided a ready ear when we were both panicking in the home stretch. Medical student Sara Hopkins generously introduced me to her advisers. Laura Jessup made me the best sourdough bread in the world and took me on much-needed walks. Our babysitter, friend, and honorary daughter, Hannah Sayles, was happy to take our baby to the potty (“She did it!”) and helped in a thousand other ways until she abandoned us to attend Colorado College. I am also grateful to my daughter’s friend, Alex Westrick (and her whole wonderful family), who was always so enthusiastic when I biked her and Athena to school in the mornings, delighted to hear another “lecture” about everything from baby wash to baby food, inspired by the research for this book.

Thanks, also, to Shayna Perkinson and all the other wise moms on MamasMedicineWheel, who were an invaluable source of inspiration, stories, and thoughtful parenting advice. And an especially huge thanks to Sue Gries, I mean Susan Langston, my best friend in the whole world, for bringing us homemade strawberry jam, formatting footnotes, taking the kids on adventures, and making my daughter’s birthday present while I remained squirreled away in my office.

Thank you to my writer friends on- and off-line: Tangren Alexander, Mark Anderson, Stephanie Auteri, Casey Barber, Edwin Battistella, Andrew Scot Bolsinger, Kris Bordessa, Jane Boursaw, Kerri Fivecoat Campbell, Scott Carney, Kimberly Ford Chisholm, Angela Decker, Kerry Dexter, Karen Driscoll, Hope Edelman, Meagan Francis, Mona Gable, Kristen J. Gough, Alexandra Grabbe, Melanie Haiken, Shu-Huei Henrickson, Sarah Henry, Donna Hull, Claudine Jalajas, Susan Johnson, Debbie Koenig, Sheryl Kraft, Cindy LaFele, Richard Lehnert, Harriet Lerner, Maryn McKenna, Melanie McMinn, Virginia Morell (who first introduced me to Gillian), Theo Nestor, Charles Ornstein, Brett Paesel, Ruth Pennebaker, Meredith Resnick, Gretchen Rubin, Brette Sember, Jen Singer, Holly Smith, Stephanie Stiavetti, Judith Stock, Candace Walsh, Samantha Ducloux Waltz, Lauren Ware, Michele Warren-Schreiber, Steve Weinberg, and the USA Today investigative journalist who also served as my mentor, Alison Young.

I am awed by how many tremendously talented birth photographers there are working today, some of whose work you will see on these pages. Thank you to everyone who provided me photographs to consider for the book. Harald Birkevold, an investigative reporter in Norway, helped facilitate my visit and generously shared his contacts. David Vanderlip, a digital photography whiz and trainer, has given me invaluable instruction, as have Christopher Briscoe and Sean Bagshaw, two Ashland-based photographers whose talents are internationally known.

A special thanks to founder and editor of Mothering magazine, Peggy O’Mara, a tireless champion of safe birth, safe medicine, breastfeeding, and empowering women. I’m grateful to Mothering.com’s Web editor, Melanie Mayo, who loves Oregon as much as I do (though she lives in Minnesota). Stephanie Von Hirschberg at More magazine; Laurie Grossman, Julie Hogenboum, Laura Lambert, and Shannon Peavey at the Walt Disney Internet Group; Alex Pulaski, George Rede, and Cornelius Swart at the Oregonian; Dan Salzstein and Susan Ellingwood at the New York Times; Robin Doussard at Oregon Business Magazine; Laura Helmuth at Smithsonian; Paige Parvin and Mary Loftus at Emory University’s alumni
magazine; my editor and now good friend Abigail Kraft at the Jefferson Monthly; Peggy O’Mara at Mothering.com; Mona Gable at BlogHer.com; Kimberly Ford Chisholm; and the good folks at FamilyFun Magazine all gave me other writing projects that helped keep us afloat during the years it took to complete this book.

I am grateful to the dozens of medical professionals who generously shared their time and expertise. Many of them are quoted on these pages, but others stayed behind the scenes. A special thanks to my father’s best friend and poker buddy Richard Sullivan, M.D., who made time to unpack the minutiae of medicine for me. A shout-out goes also to Robert Sears, M.D.; Jay Gordon, M.D.; Felicia Cohen, M.D.; Linda Hopkins, M.D.; Stephanie Koontz, M.D.; Stuart Fischbein, M.D.; Kenneth Saul, M.D.; Gro Nylander, M.D.; and midwives Dagny Zoega, Colleen Forbes, and Augustine Colebrook.

Florence George Graves, Melissa Ludtke, Sophie Eisner, and all the students and staff at the Schuster Institute for Investigative Journalism at Brandeis University, where I was appointed senior fellow, have given me both research assistance and moral support. A special thanks to Sandy Bergo, executive director of the Fund for Investigative Journalism, and the board of the Fund for Investigative Journalism, for giving me a grant that helped finance this project.

Nine-year-old Delia and her friends Sam and Kate were playing in Ordway Park in Newton, Massachusetts, when they found my black backpack that had been stolen. The camera was gone but the notes from a week of interviews were still there. Thanks to them, and their mom, Joanne Mead, for sending back what was invaluable to me but worthless to anyone else.

Thank you to my loving family: Judy Margulis; Jeffrey Kessel; Laurie Olsen; Michael Margulis; my cousins Jesse, Josh, Hannah, and Jacob; my brother Zachary Margulis-Ohnuma; Mary Margulis-Ohnuma; as well as Miranda, Atticus, and Maddie; Dorion Sagan; Tonio Sagan; Jeremy Sagan; Robin Kolnicki and my niece Sarah; Sarah Propis, a loving, attentive nurse who helped with resources, ideas, and a ready ear; Matthew, Marya, Donna, and John Propis; my mother-in-law Susan Selfridge; my father-in-law Jim Propis; Carol Propis; Jan Young; Roy Young; my husband’s cousin Kristin Mannoni, who generously gave us a place to stay in New York City and carried the baby in a front pack while I was meeting with my agent and presenting at the American Society of Journalists and Authors; Great-Grandma Propis; my mother’s compañero, Ricardo Guerrero, who has shared both his science and his love and support with me over the years; my dear father, Thomas N. Margulis; and my little sister, who is also a wonderful babysitter, caretaker, and friend, Katherine Margulis.

“You can’t not write this book, Mom,” my oldest daughters, Hesperus and Athena, scolded when I despaired that I had taken on too big a task, I was too upset by how women of childbearing age were being mistreated, and too many people would be as disturbed as I was when they read the book. “People need to read it! You have to tell moms! You have to save their lives.” All four of my children, Hesperus, Athena, Etani, and baby Leone (who traveled with me on almost every book-related trip I took; much to Dr. Ken Saul’s horror, Leone was picking up that goose poop on the path along the Deschutes), have provided me invaluable support, love, and encouragement.

I can’t find words meaningful enough to thank my husband, James, who makes
me decaf cappuccinos, edits my drafts, writes glossary definitions, and patiently listens
to me despair over the mistreatment of new moms at three o'clock in the morning. If
our children turn out well, it's because they have the best father in the world.
But my biggest debt of gratitude goes to my mother, Lynn Margulis (March
5, 1938–November 22, 2011), who died unexpectedly of a catastrophic brain
hemorrhage five months before the manuscript was due. Her love, support, advice,
keen intellect, and open-mindedness helped see me through every day of writing
this book. I wasn't sure I could finish it without her. Mom, I've done my best. I
hope I've done you proud.
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