

# Technology in Birth: First Do No Harm

By Marsden Wagner, MD

A woman in Iowa was recently referred to a university hospital during her labor because of possible complications. There, it was decided that a cesarean section should be done. After the surgery was completed and the woman was resting post-operatively in her hospital room, she went into shock and died. An autopsy showed that during the cesarean section the surgeon had accidentally nicked the woman's aorta, the biggest artery in the body, leading to internal hemorrhage, shock and death.

Cesarean section can save the life of the mother or her baby. Cesarean section can also kill a mother or her baby. How can this be? Because every single procedure or technology used during pregnancy and birth carries risks, both for mother and baby. The decision to use technology is a judgment call—it may make things either better or worse.

We are living in the age of technology. Ever since we succeeded in going to the moon, we have believed that technology can do everything to solve all of our problems. So it should come as no surprise that doctors and hospitals are using more and more technology on pregnant and birthing women. Has it solved all the problems that can arise during birth? Hardly. Let's look at the recent track record.

Has the recent increasing use of technology during pregnancy and birth resulted in fewer damaged or dead babies? In the United States there has been no decrease in the past 30 years in the number of babies with cerebral palsy. The biggest killer of newborn babies is a birth weight that is too low, but the number of too-small babies born has not decreased the past 20 years. The number of babies who die while still in the womb has not decreased in more than a decade. While the past 10 years has seen a slight drop in the number of babies who die during their first week after birth, the scientific data suggest an increase in the number of babies who survive the first week but have permanent brain damage.

Is the increasing use of technology saving the lives of more pregnant and birthing women? In the United States the scientific data show no decrease during the past 10 years in the number of women who die around the time of birth (maternal mortality). In fact, recent data suggest a frightening increase in the number of women dying during pregnancy and birth in the United States. So it may be that the increase in the use of birth technologies is not only not saving more women's lives but it is also killing more women. This possibility has a reasonable scientific explanation: cesarean section and epidural anesthesia have both been used more and more in this country and we know that both cesarean section and epidural block can result in death.

We should not be surprised with the recent poor track record of high-tech birth. For many decades in the middle of the 20th century the number of babies dying around the time of birth was decreasing. This was due not to medical advances but mainly to such social advances as less severe poverty, better nutrition and better housing. Most important, the decrease in mortality was due to family planning, resulting in fewer women with many pregnancies and births. Medical care also was responsible for some of the decreasing mortality of babies, not because of high-tech interventions but because of basic medical advances, such as the discovery of antibiotics and the ability to give safe blood transfusions. There has never been any scientific evidence that high-tech interventions such as the routine use of electronic fetal monitoring during labor decrease the mortality rate of babies.

What this means is that putting yourself in the hands of a high-tech doctor and a high-tech

hospital does not guarantee you the safest birth. You must yourself take responsibility for your own birth, including the decision to have technology used on you and your baby. Remember, technology is not good or bad. How technology is used can be good or bad. Airplanes can be used to carry you to visit your family or can be used to drop bombs on women and children. How technology is used on you during pregnancy and birth is of great importance because it can help you and your baby or harm you and your baby.

## How to Get the Right Technology

### Choosing Your Maternity Care Provider

How do you go about being pregnant and giving birth in circumstances where the use of technology is appropriate and right for you, your baby and your family? The first step is to get the right health care professional to assist you during the pregnancy and birth. A key decision is to decide if your primary maternity care provider is to be a midwife, a family physician or an obstetrician.

The United States and Canada are the only countries in the world where highly trained surgeons called obstetricians attend the majority of normal births. The American obstetrician is to be pitied. He or she is trying to be all things to all women—primary maternity care provider for normal, healthy pregnant and birthing women, specialist in complications of pregnancy and birth, specialist in women's diseases and highly skilled surgeon. No other doctor anywhere in the realm of health care tries to maintain competency at all these levels and in so many areas because it is totally unreasonable to expect this from one human being. Can an obstetrician do a six-hour "pelvic clean out" gynecological surgical procedure on a woman with extensive cancer, then rush to his or her office and do the best job of quietly and patiently counseling a pregnant woman about her sex life? Not likely.

While American obstetricians have worked hard to convince the public they are the safest people to assist at all births, the scientific evidence does not support them. For example, a large scientific study published in 1998 looked at all births in the United States in one year—more than four million births. Because doctors really do need to manage the few births that develop serious complications, the study eliminated complicated births and looked only at low-risk births. Compared with physician-attended low-risk births, midwife-attended low risk births have 33 percent (one-third) fewer deaths among newborn infants. Furthermore, midwife-attended births have 31 percent (nearly one-third) fewer babies born too small, which means fewer retarded and brain-damaged infants.

There is not a single report in the scientific literature that shows obstetricians to be safer than midwives for low-risk or normal pregnancy and birth. So if you are among the more than 75 percent of all women with a normal pregnancy, the safest birth attendant for you is not a doctor but a midwife.

If you are considering a hospital birth with an obstetrician as your primary birth attendant, ask him or her how much time he or she will spend with you during your labor. One of the reasons a midwife is generally a better choice to attend your hospital birth than an obstetrician is because the midwife is there in the hospital with you during your labor while the obstetrician is not. It is an incredible irony that the obstetrician insists that the woman who is his or her client give birth only in the hospital, while the obstetrician who should attend her birth is not in the hospital. If your obstetrician is not with you in the hospital during labor, then where is your obstetrician?

For 50 years now the United States has had a system of maternity care in which the woman goes into labor, goes to the hospital, is admitted by a labor and delivery nurse (L & D nurse) who examines the woman and calls the obstetrician, who is either at home or in his or her office (usually seeing normal, healthy pregnant women). The obstetrician gives orders over the telephone to the nurse, who then assists the woman during her labor. The obstetrician may or may not come by the hospital sometime during the labor to briefly check the woman. But it is the job of the L & D nurse to monitor the labor and call the obstetrician when the birth is imminent so that the doctor can rush in, catch the baby at the last minute and get all the credit (and money) for "delivering" the baby. If the nurse calls the obstetrician too soon and the doctor has to hang around the hospital waiting for the birth, the doctor is angry with the nurse for wasting his time. But if the nurse calls the obstetrician too late and the baby is born before the doctor gets there, the doctor is furious with the nurse.

Why is it important to insist that your obstetrician be with you during your labor as well as at the birth? In a study of obstetrical malpractice cases involving permanent brain damage of the baby, the absence of the obstetrician from the hospital during the labor played a central role in causing the tragedy in approximately two-thirds of the cases. This research showed that telephone conversations during a hospital birth between nurses at the hospital and the doctor who was not in the hospital gave rise to misunderstanding or miscommunication that caused adverse effects for the mother or baby. If you choose an obstetrician as your primary birth attendant and he/she cannot guarantee that he/she or another obstetrician will be physically present (not just on call) during your labor as well as the birth, you are wasting your money and putting your baby in danger, and you need to get another birth attendant.

If you doubt this description of hospital birth, ask any of the more than 25,000 L & D nurses in the United States. These nurses are highly skilled professionals who do what is really an impossible job. They must monitor the laboring woman and assist at the birth, all the while keeping the doctor happy and covering up for the fact that the doctor is not there most of the time and in most cases makes a minor contribution to the birth. The fact that defines and limits these nurses is that they have no autonomy and can do nothing without doctors' orders.

Because American obstetricians have always had L & D nurses to do their bidding, now that midwifery is gradually but steadily returning in this country obstetricians have developed a distorted understanding of midwifery. Obstetricians believe midwives are obstetrical assistants and keep trying to give them orders. But the practice of midwifery is very different from the practice of nursing.

Midwives are autonomous professionals who provide primary maternity care and are analogous to family physicians who provide primary health care. If the family physician hears a heart murmur and refers the patient to a specialist cardiologist, this does not mean the family physician is the cardiologist's assistant and somehow less competent, but only that the cardiologist has a different expertise—an expertise for certain complications—than the family physician has. The cardiologist makes suggestions for treatment of the family physician's patient, which the family physician and patient may or may not choose to follow. The cardiologist and the family physician are professional equals who collaborate with mutual respect to provide the best quality care for the patient.

By the same token, a specialist obstetrician does not give orders to a midwife any more than a cardiologist gives orders to a family physician. The midwife may refer a woman to an obstetrician because of a complication, but this does not make the midwife the obstetrician's assistant. The midwife and obstetrician then collaborate as professional equals.

Too many obstetricians still don't get it and continue trying to boss midwives around, hiring and firing them from their practices, pushing them off hospital staffs and accusing them of practicing medicine without a license. If you are pregnant, don't allow yourself to get in the middle of this professional turf struggle. If you want a midwife to provide your primary maternity care, find one who has as much autonomy as possible in her practice. If you are considering having a particular obstetrician provide your primary maternity care, a good way to measure that doctor's openness and attitude toward you and women in general is to inquire what his or her opinion is of midwifery.

Another reason midwives are safer than doctors is because midwives use far less unnecessary technology. Because obstetricians are surgeons, they turn birth into a surgical procedure. Proof of this is that the birthing woman is treated as if she is a surgical patient: she is put on her back in a bed that is really a modified surgical table, often with her legs up in surgical stirrups. For more than 25 years we have known scientifically that this is the worst of all possible positions for a woman giving birth; in this position the baby's head compresses the woman's main blood vessel that supplies the womb and the baby and reduces the blood and oxygen going to the baby. If the woman is in a vertical position (sitting, squatting or standing), more blood and oxygen flow to the baby, the woman's bony pelvis opens more to let the baby out and she gives birth downhill instead of uphill against gravity. One way to find out if a hospital is practicing modern maternity care or not is simply to see what position women are put in during birth. If hospital staff are still putting women on their backs during birth, they are ignoring all scientific data and still pretending birth is a surgical procedure.

Between 50 percent and 80 percent of births in most American hospitals involve one or more surgical procedures, further proof that obstetricians have turned birth into a surgical event. Those procedures include drugs to start or speed up labor, episiotomy (cutting the genitals with surgical scissors to widen the vaginal opening), placing metal forceps or a vacuum extractor on the baby's head to pull the baby out (you can imagine the risks involved in this), and cesarean section to cut the baby out. In reality, any of these surgical procedures is necessary in no more than 20 percent of all births. And since all surgical procedures carry risks, the high frequency of their unnecessary use in physician-attended births leads to more dead and damaged babies than would ever occur in midwife-attended births. Large numbers of research reports document that midwives use far fewer surgical interventions than doctors. A case in point is the use of episiotomy. From half to three-quarters of all women in America birthing their first baby in the hospital with the assistance of a doctor have this surgical cut done to their genitals. It is scientifically proven that no more than 20 percent of women will need this cut; the best rate is about 5 percent. Among midwives in independent practice in the United States (that is, when doctors are not giving midwives orders as to what to do), between 2 percent and 20 percent of women undergo episiotomy.

Is the fact important that midwives cut far fewer episiotomies than doctors cut? Scientific evidence shows that having an episiotomy means more bleeding, more pain, more permanent deformity of the vagina, and more painful sexual intercourse for months, or even years. As well, unnecessary episiotomy is a form of sexual abuse. Some women's groups in America are rightly concerned about the practice of female genital mutilation in parts of Africa. They need to be equally concerned about the millions of American women who have suffered female genital mutilation—unnecessary cutting of the genitals at birth at the hands of doctors.

While midwives trust women's bodies, use such low-tech assistance as the skilled use of their hands, and understand the importance of preserving normalcy, doctors, in general, do not trust women but trust drugs and machines, use high-tech assistance, and focus on the pursuit of abnormality. So having a highly trained surgeon obstetrician assist at your birth is about as

sensible as hiring a pediatric surgeon as a baby sitter for your healthy 2 year old when you go out in the evening. Like the obstetric surgeon who gives the normal woman a shot to hurry her labor, the pediatric surgeon baby-sitting your normal child will focus on medical management: when your robust 2 year old gets tired and fussy, the pediatric surgeon will give him or her a shot to hurry the child to sleep. The result? In the one case you get the medicalization of birth (remember, birth is not an illness), with a lot of unnecessary risky interventions and very expensive medical care, and in the other case you get the medicalization of childhood (being 2 years old is also not an illness), with unnecessary risky interventions and very expensive baby-sitting.

When deciding on your primary maternity care provider, it is important to ask midwives or doctors about their practices: find out if they prefer to put you on your back during birth and how often they do episiotomy, forceps or vacuum extraction, and cesarean section. If they don't know their rates of surgical interventions or refuse to tell you what their rates are, look out! Beware of any tendency to patronize you, to suggest that you cannot possibly understand all this technical stuff, or that you should just "trust me, I'm the doctor."

## Choosing the Right Place to Give Birth

An important decision to make is whether to have your birth at home, a freestanding birth center or a hospital. Overwhelming scientific evidence shows that the home is a perfectly safe place to give birth if you are one of the more than 80 percent of women who have had no serious medical complications during pregnancy. The evidence indicates that it is important to have a trained birth attendant for your homebirth, be it non-nurse midwife, nurse-midwife or doctor. Your place of birth should also be within 30 minutes of the nearest hospital. The single most important advantage of homebirth is that the birthing woman is in control. Another important advantage is that in homebirth there is far less unnecessary use of technology. For a hospital to say it can be "homelike" is like the sign in the bakery window: "We sell home-baked bread."

A freestanding birth center staffed with midwives is also a perfectly legitimate choice for the great majority of women who have had no serious complications during their pregnancy. But don't be fooled by the hospital that advertises its "birth center." If the birth center is not freestanding—i.e., outside the hospital—it will still be under the supervision of the hospital and the doctors, and the birthing woman will not be in control. Plenty of scientific evidence confirms that a freestanding birth center with midwives is a safe option. For example, a study of more than 10,000 women giving birth in more than 80 freestanding birth centers in the United States showed birth in these centers to be just as safe as a matched group of low-risk hospital births.

Be sure to investigate the practices in any hospital you may consider for your birth. Would you have the freedom to have the kind of birth you wish? Remember, freedom means being in control of everything that happens to you. Being given permission to do this but not that is not freedom. Can you invite anyone you want to be present at the birth? Some hospitals will limit whom you can bring. Meanwhile they can—without asking you—bring anyone they want to your birth, including, for example, a bunch of doctors in training. Can you come with a written birth plan that they will respect and honor, or will they have an obvious attitude about such plans and consider you a "bad patient"? Many hospitals are competing for patients and will show pregnant women beautiful "birthing rooms." Remember, what is important is not a rocking chair and pretty curtains but whether or not you can be in control.

Always be aware that hospitals are under the absolute control of doctors and that the rules and regulations are for the convenience of the staff, not you. Hospitals are designed to care for sick people, and since a birthing woman is not sick, much of what goes on in the hospital doesn't fit

her needs. One simple example: most births take from 10 to 20 hours, during which there is one or more turnover of staff, who are on eight-hour shifts. While the data show the overwhelming importance of a woman having the continuous assistance of someone she knows throughout her labor, during your hospital birth you are likely to have to cope with one or more staff changes and lots of strangers coming into your room.

Ask the hospital if women are put on their backs during birth. Ask for the hospital's rate of episiotomies, forceps deliveries and cesarean sections. Don't be satisfied with the usual answer: "It varies by doctor." Don't believe them if they say they don't have their hospital cesarean-section rate; they are required in most states to report this rate to the State Health Department. In New York state a law provides the right to be given all this information, and an official pamphlet given out to all newly pregnant women includes a listing of the cesarean-section rate for every hospital in the state.

Some of you belong to a health plan that may limit your choice of maternity care provider and place of birth. In this case you may have to get aggressive to get what you really want. Don't be afraid to demand what should absolutely be your right as a family and a birthing woman. Besides, a health plan is a business that needs to keep its customers happy. If your health maintenance organization (HMO) doesn't have a midwife and you want one, demand one. If you want an out-of-hospital birth and your HMO doesn't provide it, demand it. More and more HMOs now have midwives because they are discovering midwives are just as safe as doctors and cost the HMO a lot less. The largest HMO in New Mexico, for example, has more midwives than obstetricians on their full-time staff, and around 80 percent of all hospital births in this HMO are attended only by midwives.

## Getting Information on the Technologies

### How to Get the Information

When considering whether a given technology is appropriate for you, it is important that you understand the difference between facts and value judgments. The probability (chance) that using the technology will make things better (efficacy) and the probability (chance) that using the technology will make things worse (risk) are facts that can be scientifically measured. But benefit and safety are value judgments about the acceptability of those chances. To be appropriate, both the benefit and the safety of technology must be judged by those on whom it is used. Scientists can measure the efficacy and risks, midwives and doctors can inform the woman of the data on these two chances (better or worse) but the person taking the chances (the patient) is the only one who can legitimately decide whether one chance outweighs the other. It is thus inappropriate and dangerous for a doctor or midwife to tell a patient that something is "safe" when it is not the doctor or midwife taking the chances. Instead, the role of the doctor and midwife is limited to suggesting possible interventions and explaining the chances that the intervention will make you better or worse.

Whenever someone suggests using a technology on you, you must leave no stone unturned in finding out what your chances are for getting better or worse. It is the duty of any doctor, midwife or nurse to provide you with full information on these two chances. However, you must accept the responsibility for getting full information because you cannot always rely on your maternity care provider to volunteer such information. If it is not forthcoming and complete, you must demand it. Every effort must be made to get full, honest information. Because your wishes and the wishes of the doctor may often collide, it is sometimes difficult to get unbiased information. Too often, the doctor provides only that part of the information he or she thinks

will make you a more compliant patient who will agree with whatever the doctor wants and, therefore, suggests. One way to get unbiased information is to insist on seeing the scientific data behind any information given you. "Show me the data" is a powerful strategy for eliciting better information. Another important way to get more unbiased information is to demand a second opinion, which can, one hopes, provide a second source of information.

A powerful shortcut to finding out if a particular technology is likely to be helpful to you is provided by the six tables at the end of a book by Enkin et al. titled *A Guide to Effective Care in Pregnancy and Childbirth*. All the most common interventions used during pregnancy and birth are classified as follows depending on a careful review of the scientific evidence for each intervention: 1) beneficial, 2) likely to be beneficial, 3) trade-off between beneficial and adverse effects, 4) unknown effectiveness, 5) unlikely to be beneficial, 6) ineffective or harmful. A glance at this last table is quite informative. You might want to check on how many of these ineffective or harmful interventions are still in use in any hospital you are considering.

### *Information on Prenatal Technologies*

The process of getting information on a technology can be tricky, so a couple of examples will be given to illustrate how to go about it. While pregnant, you might find it a good idea to test your skills at getting information on a technology and to see how willing the midwife, nurse or doctor is to provide full, unbiased information.

It is likely that a routine ultrasound scan will be suggested fairly early in your pregnancy. This presents a perfect opportunity to ask a few questions "What is the chance the scan will make things worse? Is such a scan safe?" If the answer is a flat "Yes, ultrasound scanning during pregnancy is safe," alarm bells should start going off in your head, because you are not getting the full information. You must then ask, "Show me the data on the safety of prenatal ultrasound," in order to check on what you may be told about the data on the safety of prenatal ultrasound. As a scientist I can assure you that the only correct answer to your question is, "We don't know because there is not sufficient scientific data to prove the safety of prenatal ultrasound." Some research has shown the possibility that ultrasound can cause slowed growth of the fetus while still in the uterus. Other research has shown the possibility that some children who have been scanned while still in the uterus may later have mild neurological deficits. We need more study of both these possibilities. But from a scientific viewpoint, it is impossible to say today that ultrasound scanning during pregnancy is perfectly safe.

The next question to ask when ultrasound scanning is proposed to you is, "What is the chance that a scan will make things better?" When you are told that one reason for the scan is to look for defects in the fetus, ask: "What is the chance a defect will be correctly identified (true positive screening test) and what is the chance a defect will be incorrectly identified (false positive screening test)?" If your provider cannot, or will not, answer this question, watch out! Again, so that you can check on what you may be told, here is the best scientific data: If 100 pregnancies are routinely screened with ultrasound to look for a defective fetus, two out of the 100 will have a true positive result (i.e., the scan says the fetus is defective, and it truly is defective), and one out of the 100 will have a false positive result (i.e., the scan says the fetus is defective, but it is not defective, it is a normal fetus). So if all women with a positive scan are offered therapeutic abortion, for every two defective fetuses aborted, one normal fetus will be aborted. How many women are told this before they are offered a routine prenatal ultrasound scan?

Your next question when ultrasound is suggested should be, "Is there a better chance my baby will survive the pregnancy and birth if an ultrasound scan is done, and what are the data?" The

correct answer is that a large study in the United States of more than 15,000 pregnant women showed no improvement in the mortality rate of the babies if ultrasound is routinely used during pregnancy.

One scientist published the following summary of the present state of the art on routine prenatal ultrasound scanning: "The casual observer might be forgiven for wondering why the medical profession is now involved in the wholesale examination of pregnant patients with machines emanating vastly different powers of energy which is not proven to be harmless to obtain information which is not proven to be of any clinical value by operators who are not certified as competent to perform the examinations." For all these reasons, the American College of Obstetricians and Gynecologists, the American College of Radiology and the U.S. government's Preventive Services Task Force all recommend against routine ultrasound screening of low-risk pregnancies. This is the type of unbiased, scientifically sound information you need to make informed choices about technology used on you during pregnancy.

### *Information on Technologies Used During Birth*

Because a situation may arise during birth where time constraints limit the opportunity to get full information on a technology or procedure being proposed for use on you, it is wise to look long before your due date at the information on certain technologies used frequently during birth. Brief mention already has been made of episiotomy, the surgical cutting of women's genitals.

Since in American hospitals 20 percent or more of woman do not give birth but instead the baby is cut out with cesarean section, you need information on this technology in advance of your birthing. There is no better example of the surgical approach to birth than cesarean section, because it is the ultimate solution of all surgeons—cut it out. Some obstetricians are so enamored of this technical solution to birth that they are now promoting it as preferable to the normal way of giving birth through the vagina.

One recent article in a prominent medical journal seriously proposed the routine surgical removal, by cesarean section, of all babies, together with a policy that would require a signed release from any woman so foolish as to insist on vaginal birth. Another paper published in an authoritative medical journal tried to show, using very biased data, that efforts to reduce cesarean section in the United States below 20 percent would be dangerous, a proposal that goes against a massive amount of good scientific data. A third article in a medical journal insisted women have the right to demand cesarean section birth even when there is no medical reason for it.

Meanwhile, a recent popular book for the public urges women in the United States to request a routine cesarean section birth because they "want to maintain the vaginal tone of a teenager and their doctors can find a medical explanation that will suit the insurance company." So a tight vagina for your sexual partner should be your first concern, and it's okay for your doctor to lie and cheat the insurance company. The surgical approach to birth has run amok!

What is the truth, scientifically, about cesarean section? Compare what you are told with the following scientifically documented information. Again, while getting information on this major surgical procedure, the first question is, "How safe is cesarean section?" Always beware of any attempts to pooh-pooh the question or downplay the risks. We are talking about major abdominal surgery that carries major risks. Starting with the risks to the woman, she has a four to eight times greater chance of dying from a cesarean section than she does giving birth through her vagina. Even a routine, scheduled cesarean section with no medical complication as the

reason for the surgery carries a two times greater risk that the woman will die from the surgery.

Even if the woman does not die, she is at risk for many serious complications from the surgery, such as the accidental cutting of her bladder or other internal organs and a 20 percent chance she will get an infection as a result of the surgery. Since the woman often gets a fever with this infection, her fever necessitates a fever diagnostic work-up of her infant, with blood tests and even spinal tap of the baby.

Having a cesarean birth also affects the future reproductive possibilities of the woman, because having a cesarean section means she has a decreased chance of ever getting pregnant again. And if she does get pregnant again, she is at higher risk that her pregnancy will occur outside her womb, a condition that will never result in a live baby and is life threatening for the woman. If in her subsequent pregnancies she succeeds in making it to the end of pregnancy and goes into labor, she is also at higher risk of two serious complications during the birth, both of which can threaten her own life and the life of the baby: a placenta that blocks the outlet for the baby or a placenta that detaches itself before the baby is born.

While some women might be willing to take risks with their own body, it would be very hard to find a woman willing to take risks with the life or health of her baby just for her own convenience or to avoid labor pain. So the following risks to the baby born by cesarean section are of great importance. There is about a 5 percent chance that when the surgeon cuts into the woman's body during a cesarean section, the knife will accidentally also cut her baby. Because all the water is not squeezed out of the baby's lungs as is normally done during a vaginal birth, more babies born after cesarean section develop serious respiratory distress syndrome, one of the biggest killers of newborn babies. Because doctors are not as good as they would like to be in estimating, even with ultrasound, the baby's gestational age—i.e., whether the pregnancy has gone long enough—too often a cesarean section is done too soon, resulting in a premature birth. Prematurity is a big killer of newborn babies and also carries a higher risk of brain damage to the baby. It is difficult to imagine that a woman who has been given full information on these risks to herself and her baby would still choose a cesarean section when there is no serious medical reason for it. Obstetricians have jumped on the "woman's choice" bandwagon, which in many ways is a good thing except for the tendency to push women's choice only for things the obstetricians want to do anyway. For example, for years the scientific evidence has favored vaginal birth after an earlier cesarean section (called VBAC) rather than a repeat cesarean section. Doctors, however, have never really pushed VBAC, but instead emphasize a repeat cesarean. Pushing women to have the right to choose major surgery for which there is no medical indication is ridiculous as well as dangerous. It has been established legally and ethically that patients have the right to refuse treatment even when medically indicated, but patients have never had the right to choose medical or surgical treatment that is not indicated. Doctors are under no obligation to do unjustified major surgery. Women's "choice" is clearly limited to medically valid options.

There has been an epidemic of unnecessary cesarean section births because doctors like a quick, surgical solution for birth. Now another birth technology—epidural block for labor pain—is seeing a rapid expansion of epidemic proportions because doctors are selling it to women as hard as they can. (Epidural block for cesarean section is another matter, as it is the preferred anesthesia for this major surgery.) A new subspecialty of doctors—obstetric anesthesiologists—is built entirely on the economic foundation of epidural block for normal labor pain. They need lots of birthing women to choose this form of pain relief if these doctors are to make a grand living. (Their professional journal contains advertisements for purchasing private jets.) These new specialists go to prenatal classes to sell epidural block and prowl the halls of hospital maternity wards, popping in on women in labor to sell their epidural block.

Their hard sell includes telling women that epidural block is "safe." How safe is it really?

Twenty-three percent, or nearly one in four women, given an epidural block will develop a complication. One undesirable complication is death—epidural block for relief of normal labor pain results in a three times higher mortality rate for the woman than labor without epidural block. One out of every 500 epidural blocks results in temporary neurological problems, such as paralysis in the woman; and in one out of every half-million epidural blocks, this neurological damage to the woman is permanent.

These extremely serious risks of epidural block are not so common, but several less serious, but still significant, risks are much more common. Fifteen percent to 20 percent of all women given epidural block develop fever that results in the undesirable necessity of administering diagnostic tests and antibiotic treatment to the baby. Fifteen percent to thirty-five percent of all women given epidural block cannot urinate and must have a tube inserted into their bladder. Thirty percent to 40 percent of all women given epidural block have severe backache for hours or days after birth, and 20 percent still have severe backache one year later. So they have traded pain relief during a few hours of labor for severe back pain for a year or more! Because labor pain is an essential component of the normal mechanisms of the body for the progress of labor and since the epidural block eliminates this necessary pain, epidurals also eliminate the normal mechanisms for the progress of labor. So it is to be expected that considerable research documents a longer labor if the woman is given epidural block. As normal labor is no longer possible with epidural block, there is four times greater use of forceps or vacuum extraction and at least twice as much cesarean section after epidural block. These surgical interventions, of course, carry their own risks both for woman and baby. So the woman choosing epidural block trades less labor pain for a longer labor and, if a cesarean section is done, more pain for several days after the birth, as well as increased risks for both herself and her baby.

Thus, epidural block presents many serious risks for the woman. Are there risks for her baby? Since it is unlikely any woman would choose a form of pain relief that puts her baby at risk, women are not told that in 8 percent to 12 percent of labors in which the woman is given epidural block, severe fetal hypoxia (lack of oxygen to the unborn baby) is shown on the electronic fetal monitor. The American College of Obstetricians and Gynecologists, after acknowledging the frequency at which birthing babies suffer hypoxia after the woman is given an epidural block, recommends that all women given epidural block have continuous electronic fetal monitoring so that fetal hypoxia can be identified.

Does this lack of oxygen have any permanent effect on the baby? Research has found that 1-month-old babies whose mothers were given epidural block during labor may have neurological test results that suggest possible minor brain damage. While this is a finding not yet completely confirmed scientifically, it is a possibility that is certainly worrisome and should be told to women offered epidural block. Epidural block carries another risk that is found in many of the interventions and technologies used during birth: the "cascade effect." This means that the use of one intervention leads to the use of another intervention, and the use of that intervention leads to the use of yet another intervention, and so on. If, for example, a woman is given a drug to start labor or to make labor proceed faster, this leads to more painful contractions. This in turn leads to the offer of pain relief, usually with epidural block, which, as we have seen, leads to an increased use of forceps or vacuum extraction, which leads to episiotomy or to cesarean section, which leads to fever in the mother, which leads to tests and treatments for the baby.

There are other cascades of interventions during labor. For example, routine electronic fetal monitoring leads to more cesarean sections, which lead to babies with respiratory distress syndrome or prematurity, which leads to putting these babies into newborn intensive care units.

Every one of these interventions carries risks for mother and baby! It is easy to see how the high-tech approach to birth actually creates many new problems. Rather than change their habits, however, doctors conclude that birth is quite risky, when in reality doctors have caused it to be risky. This is one important reason why homebirths, freestanding birth center births and having your own midwife as the primary maternity caregiver are all associated with fewer risky interventions and, therefore, safer care.

No honest doctor would ever suggest that drugs given for pain are without risks. But in their pursuit of relieving a laboring mother's pain, doctors inevitably resort to prescribing drugs, when in fact, there are many non-pharmacological ways to relieve pain. For example, scientific research has proven a number of drug-free techniques to be effective in relieving the pain of normal labor, including: the continuous presence during labor of a midwife, a doula or a loved one; sitting in a tub of warm water or standing in a shower; freedom to move about and assume any position; massage; acupuncture; reflexology. None of these techniques involves any risk to the woman or her baby, and they are often promoted by midwives, but rarely promoted by doctors.

Other harmful technologies aside from those already mentioned are frequently used during birth, such as the use of drugs to start or speed up labor, forceps or vacuum extraction, and cutting of genitals (episiotomy); but space does not permit a review of all of them. In my book you will find information on how to get the most reliable data on specific technologies likely to be used during pregnancy and birth.

## Why the Unnecessary Use of Technology?

To understand why so much unnecessary technology is used during pregnancy and birth, it is necessary to understand how technology comes to be used. We must first ask, Is the use of a new technology preceded by careful scientific evaluation, then followed by official approval for use and requirements for education of doctors in its use? Sadly, the truth lies in another direction. An example of a recent birth technology now rapidly spreading in the United States will illustrate the reality.

Several years ago a drug with the generic name misoprostol (called Cytotec by the drug company that manufactures it) was approved by the Food and Drug Administration (FDA) as a prescription drug to be used for certain ailments of the stomach. It is known that one of its side effects is severe cramps or contractions of the uterus, and for this reason the label says it should never be used on pregnant women. Obstetricians, however, discovered that given orally or vaginally, Cytotec, because of its side effect of violent uterine cramping, can induce (start) or accelerate labor.

So without any prior testing of Cytotec for labor induction, obstetricians began to use it on their birthing women. Doctors on the Internet began to describe their experience with this new way of inducing labor. One doctor wrote, "I must say I have heard some great things about Cytotec myself. Just be careful. The stuff turns the cervix to complete mushie." A few studies have appeared in obstetric journals, but all the studies are too small to give adequate scientific evidence about this use of the drug. These studies did show some risks, such as a tendency for the fetus's heart to start racing, as well as other signs of fetal distress, and the explosion or rupture of the uterus in a few women. A review of the scientific evidence by a highly prestigious scientific body says that because of the lack of sufficient scientific evaluation and the reports of serious side effects, the use of Cytotec for labor induction "cannot be recommended for routine use at this stage."

The fact that Cytotec is not approved by the FDA for labor induction, is not approved for this use by the drug manufacturer (who still states on the label that it is not to be given to pregnant women), is not endorsed by either the American College of Obstetricians and Gynecologists or midwifery organizations, and is not approved by scientists for routine use has had no apparent effect on the enthusiasm with which doctors are starting to use it. And there is nothing to stop doctors from using Cytotec for this "off label" purpose, because although the FDA must approve a drug before it goes on the market, once it is on the market for a specified purpose, any doctor can use it in any dose for any purpose on any patient.

After one obstetrician in South Dakota proudly told me over lunch that he was the first doctor in his community to use Cytotec for labor induction and now urges other doctors to use it, he justified his actions: "We will wait forever for the bureaucrats at the FDA in Washington, D.C., to approve drugs, so we must try them out ourselves if we want progress." When asked, he admitted he doesn't tell the women to whom he is giving Cytotec that the drug is not approved for this purpose, nor does he ask for informed consent. He scoffed at my suggestion that he is experimenting on women without their knowledge, much less their consent. The Oregon State Health Department told me their records show Cytotec to be the most common way of inducing labor in that state, and it is used on thousands of laboring women.

The use of Cytotec on birthing women has spread like wildfire for a very simple reason, told to me by many doctors: its use brings back the possibility of "daylight obstetrics"—that is, women brought to the hospital first thing in the morning and induced with Cytotec will give birth by late afternoon and the doctor can be home for dinner. How many women will have their uterus ruptured before a court case finally applies the brakes to this practice? I personally welcome learning of cases where Cytotec induction was used without fully informed consent and there was subsequent uterine rupture, cervical laceration or other serious complications.

The unsystematic, untested way in which Cytotec for labor induction was introduced and disseminated is typical for the technologies used during pregnancy and birth. Ultrasound scanning during pregnancy and electronic fetal monitoring during labor are further examples of uncontrolled introduction and dissemination of untested technologies. There is a big gap between what we know to be the best scientific maternity care practices and what is actually practiced. As a result, there is no consumer protection except litigation. Doctors blame lawyers and women for the fact that more than 70 percent of American obstetricians have been sued one or more times, but litigation is the only way a woman and her family can protect themselves against malpractice.

Many of the motivations behind the use of technologies by doctors are non-medical. Several examples, all supported by scientific study, will illustrate this fact. Studies of birth certificates show that birth is more common Monday through Friday, 9 a.m. to 5 p.m. The only explanation that can be given is that doctors and hospitals use the induction of labor for their own convenience. More shocking is data that show emergency cesarean section to occur most commonly on weekdays during the daytime. Deciding to declare a labor an emergency situation requiring emergency surgery is influenced by the convenience of the staff.

Another non-medical factor that motivates the use of technology is money. Data from several states in the United States show cesarean section to be least common among women on Medicaid and most common among private patients in private hospitals. One would think the opposite, assuming that poor women have poor health and need more interventions. But doctors and hospitals make bigger profits if technology is used in cases where the patients or their insurance can afford to pay. Commercial interests also play a role—manufacturers of drugs and technologies have a variety of ways to influence doctors to use their drugs and machines,

including bestowing a wide range of gifts and perks.

Doctors' fear of litigation is another non-medical motivation for using technology. Doctors are afraid both of having to go to court and of having to pay higher malpractice insurance premiums. Two prime examples of the unnecessary use of technology due to doctors' fear of litigation are routine electronic fetal monitoring during normal labor and cesarean section with little or no medical justification. A fundamental principle of medical practice is that whatever the doctor does must be, first and foremost, for the benefit of the patient, not the benefit of the doctor. But picking up a scalpel and cutting open a woman's body for a cesarean section because of fear of going to court or paying high insurance premiums is not the practice of medicine but the practice of fear and greed.

Many obstetricians have an unfortunate tendency to promise women a perfect baby if the women will make use of the doctor's expertise and the hospital's technology. But if you play God, you will be blamed for any natural disasters that ensue. A family with a dead or damaged baby or mother does not sue because some lawyer talks them into it, but because they feel deceived and are stonewalled by doctors and hospitals when trying to get full information on what happened. If you don't believe you will be stonewalled while trying to get information on what happened at a birth, try to get information on the 350 to 1,000 women who die every year in the United States around the time of birth (maternal mortality). Although individual states have regulations that require such deaths to be reported, no one, including you, me or scientists wanting to study why these women die, can get access to information on these maternal deaths. We do know that at least half these deaths are not reported, that black women have a four times greater risk of maternal death, that nearly all these women die in the hospital rather than at home, and that with adequate medical attention many, if not most, of these women need not have died. That last fact is why the doctors' fear of litigation builds the stone wall.

Another reason for the overuse of technology is the mistaken belief by many doctors that technology is science and the use of technology is the practice of scientific medicine. They confuse technological advances with progress. Scientific medicine is practice based on the best scientific evidence, not practice that uses technology. Practicing doctors are not scientists. Scientists must believe they don't know, while practicing doctors must believe they do know.

In other highly industrialized countries where midwives far outnumber obstetricians, the midwifery approach brings both an essential counterbalance to the high tech approach of obstetricians and a brake to unnecessary technology. For example, while the United States has 35,000 obstetricians and about 5,000 midwives, Great Britain has 32,000 midwives and less than 1,000 obstetricians. The midwives promote the far greater use of less invasive, less risky, low-tech approaches. In America no such counterbalance exists because organized obstetrics fights to keep midwives under their absolute control. So we find far higher rates of high-tech, unnecessary use of technology in U.S. maternity care than, for example, any country in Western Europe, even though the United States loses far more babies and women around the time of birth. Because of its obstetric-intensive maternity care, the United States spends twice as much per capita on maternity care than any of the other countries with lower mortality rates for women and babies around the time of birth. The financial waste of scientifically unfounded high tech obstetric maternity care in the United States is enormous. By changing to a far more modern, more scientifically based maternity care with 75 percent of the births attended by midwives, the elimination of routine electronic fetal monitoring and a cesarean section rate in compliance with the recommendations of the federal government, the United States could save \$13 billion to \$20 billion a year. As a taxpayer and consumer of maternity care, you need to be aware of this waste.

We see there are many reasons for the unnecessary overuse of technology during pregnancy and birth, most reasons connected to doctors. As a practicing physician for more than years, I have had long experience within the profession and can bring an important point of view to your understanding of doctors. We doctors are not evil people. Most doctors are hard working, caring professionals doing the best they know how to do. But it is essential to remember two fundamental facts about doctors. First, we doctors operate within a system that strongly influences what we do. Today's obstetricians are not the ones who decided a century ago to do away with midwifery in America. Almost without exception, they buy into the present system that insists obstetricians are the preferred providers of primary maternity care, even in the face of scientific data to the contrary.

The second fact about doctors is that they are human in every respect, not gods, and should not be put on a pedestal. If it is OK to bash your automobile mechanic who has done a bad job, then it is equally OK to bash a doctor you suspect of malpractice. Doctors should be as accountable to the public as any other group that serves the public. And to understand why doctors do what they do, you must accept their humanness and vulnerability to inappropriate influences. In 1992 the average take-home income of U.S. obstetricians was \$250,000 a year, and today it is even higher. The present scientifically unjustified monopoly of maternity care by obstetricians in the United States is richly rewarding the obstetricians, and you can be sure they will fight to maintain the status quo, keeping out any competition such as midwives and out-of-hospital birth. This is why, as a consumer of maternity care, you must beware what you are told by doctors and hospitals and take full responsibility for ensuring you get the kind of pregnancy and birth experience best suited to your needs and no one else's.

## What You Can Do

How do you get the maternity care best suited to you and your family with the appropriate use of technology? You can take the following steps:

- . Choose the right primary maternity care provider. Talk to the midwives and doctors available to you. Ask lots of questions before deciding whom to use. Get data on their practices. If they resist giving you the data, watch out. Examine their faces closely as you tell them you want a birth that is empowering. Are they patronizing and condescending in their approach and resentful of your questions, or do they encourage you to take responsibility for your own pregnancy and birth? Don't be afraid to change providers if after a few visits you don't like how they are caring (or not caring) for you.
- . Choose the right place to give birth. Some women need to give birth at home. Remember, this is a perfectly safe choice for most of you. If someone says it is not safe for you, get a second opinion. Other women prefer a free standing birth center staffed by midwives. Remember, this also is a perfectly safe choice for most of you. Yet other women will feel better in a hospital. That's OK too as long as you see to it that you get as much choice as possible in what will happen to you in the hospital. Whether the hospital has midwives on its staff or welcomes midwives coming in with birthing women tells you a lot about that hospital. Visit the hospitals or birth centers and ask lots of questions about their practices, remembering the important thing is not the interior decorating but your freedom and control. Don't let anyone scare you into a choice not truly your own.
- . Choose the kind of birth you want. Make a birth plan. Find other birth plans to get ideas. Find out what kinds of options are available. Do you want the first part of your labor to happen at home (a proven way to reduce the use of unnecessary interventions) and if so, how will you be monitored before going to the birth center or hospital? Whom do you want and not want to be there with you during your labor and birth? Decide what interventions you will or will not accept and put this in your plan. For example, make sure you do not get

pubic shaving or enema during labor, both humiliating and both unnecessary. Find out which pain relief you want after you get all the information on the pros and cons of the various drug and non-drug possibilities. Under which circumstances will you accept or not accept: being given drugs to start or accelerate labor, having your genitals cut (episiotomy), having your baby taken from you after birth? Use scientific evidence as the basis for your decisions, not what doctors and hospitals call "community standards," which means "this is how we all do it here"—a dangerous approach to practice based on the principle that if everyone does it, it's OK for me to do it. Say "show me the data" again and again. Read up, using a critical eye. Protect yourself and your baby by rejecting out of hand any suggestion that you should put blind faith in what you are told or read.

- . Ensure that your wishes are carried out. Document your wishes in a written birth plan. Give a copy of your birth plan to your caregivers and to the birth center or hospital well before your expected due date, assuring them they will be held accountable for following the plan and your wishes. If your plan elicits any kind of negative reaction, you have the wrong caregiver and/or wrong hospital. Bring the plan with you to the hospital at the time of birth. Doctors and hospitals are not used to having anyone tell them what they can and can't do, most especially patients. For this reason, it is essential that you have a support person with you in the hospital: your partner, your midwife, another family member, a friend, a doula. This support person must be ready and able to advocate strongly in your interest, especially when all your energy is consumed by labor and birth. Your support person must be familiar with your plan and exactly what it specifies and why. You and your support person must know what your rights are while you are in the hospital and effective ways to deal with hospital staff. A homebirth midwife I know who sometimes accompanies a client to the hospital when a transfer is required, takes two things with her to the hospital: a book that summarizes the scientific evidence on interventions used during birth so that if hospital staff object to what she suggests, she can whip out the book and show the data; and a door stop so that no one can come into the room where her client is laboring unless she and the woman give permission. This is bringing some degree of patient control into the hospital.

Document what happens. The small, hand-held video camera is a powerful instrument with which to document just what happened during your birth. Be sure to film any encounters with hospital staff. It is a wonderful way to both remember the experience and make a record for future purposes if necessary. Believe it or not, some hospitals now forbid using video cameras during the labor or birth. This is scary, suggesting they are more concerned with their own protection from malpractice than in your own memories of this family event. It also suggests they have something to hide. If your birth results in difficulties or a bad outcome either for the woman or the baby, then once again you must accept responsibility for finding out what happened. Demand information from caregivers and the hospital, tape recording each encounter. Fortunately you now have the right to a copy of all your medical records. Get them. Find someone who can help you interpret them. If you do not get satisfaction with your inquiry, go to the local health authorities with your tape recorder. If you still are stonewalled, sadly you may have no recourse but to sue. We live in a litigious society because the courts are the only place it is possible for individuals to get answers from the powerful in our society, be they large corporations, hospitals or powerful professional groups such as doctors. Never forget you have the basic right to freedom of choice and freedom of information about one of the most important events in your life and the life of your family—the birth of your baby.