Significance of multiple birth loss

The Centers for Disease Control and Prevention publishes 4 reports that include data related to deaths in multiple pregnancy and birth in the United States. These are excerpts from each of the reports, followed by some comments by us.

1. For multiple births, the infant mortality rate in 2009 was 27.39 [per 1,000], five times the rate of 5.64 for singleton births. From 2008–2009, infant mortality rates declined by 3 percent for single births and by 5 percent for multiple births. Infant mortality rates for multiple births were higher than the rates for single births for all race and Hispanic-origin groups.

The risk of infant death increases with the increasing number of infants in the pregnancy. In 2009, the infant mortality rate for twins (25.50 per 1,000) was nearly 5 times the rate for single births (5.64). The infant mortality rate for triplets (60.97) was 10 times, the rate for quadruplets (129.58) was 23 times, and the rate for quintuplets and higher order births (350.00) was 62 times the rate for single births.

Multiple pregnancy can lead to an accentuation of maternal risks and complications associated with pregnancy. For example, multiple births are much more likely to be born preterm and at low birthweight than singleton births. The higher risk profile of multiple births has a substantial impact on overall infant mortality. For example, in 2009 multiple births accounted for 3 percent of all live births, but 15 percent of all infant deaths in the US. [These numbers are of babies who were alive at birth.]


2. The twin birth rate declined slightly in 2010 to 33.1 per 1,000 total births, from 33.2 in 2009. The twinning rate climbed steadily, by 76 percent from 1980 to 2009. Rates rose nearly 3 percent a year during the 1990s, but the pace of increase had slowed to less than one-half of one percent annually since the mid-2000s. There were 132,562 [live] births in twin deliveries in 2010...

The rate of triplet/+ births declined 10 percent in 2010 to 137.6 per 100,000 births from 153.5 in 2009. The 2010 rate is the lowest in 15 years. The triplet/+ birth rate (higher multiples per 100,000 births) rose more than 400 percent during the 1980s and 1990s, but has declined 29 percent since the 1998 peak. The 2010 number of triplet/+ births (5,503) was the lowest since 1995 and includes 5,153 triplets, 313 quadruplets, and 37 quintuplets and higher-order multiples.
The pronounced rise in multiple birth rates during the 1980s and 1990s has been associated with two related factors: older maternal age and the expanded use of fertility-enhancing therapies, both assisted reproductive technologies (ART) (e.g. in-vitro fertilization, IVF) and non-ART treatments (ovulation induction medications without ART). The recent decline in triplet/+ birth rates has been associated with practice guidelines from the American Society for Reproductive Medicine intended to reduce the incidence of higher-order multiple gestation pregnancies, and to improvements in ART procedures, that is, the transfer of fewer embryos per IVF cycle.

Infants in multigestation pregnancies tend to be born earlier and smaller than those in singleton pregnancies. In 2010, more than 5 of every 10 twins, and 9 of 10 triplets were delivered preterm, compared with about 1 in 10 singletons. Accordingly, multiples are at greater risk of early death; twins are about 5 times, and triplets 10 times as likely to die in infancy [emphasis added].

–Births: Final Data for 2010, Centers for Disease Control and Prevention, National Center for Health Statistics, Vol. 61 No. 1, August 28, 2012

3.
Multiple-infant births are associated with greater problems for both mothers and infants, including higher rates of caesarean section, prematurity, low birth weight, and infant disability or death.

Part A of Figure 11 shows that among the 37,191 pregnancies that resulted from ART cycles using fresh nondonor eggs or embryos, approximately 63% were singleton pregnancies and 31% were multiple-fetus pregnancies (28% were twins and 3% were triplets or more). Approximately 6% of pregnancies ended before the number of fetuses could be accurately determined. Therefore, the percentage of pregnancies with more than one fetus might have been higher than what was reported (about 31%).

In 2010, 6,613 pregnancies resulting from ART cycles ended in either miscarriage, stillbirth, induced abortion, or maternal death, and 153 pregnancy outcomes were not reported. The remaining 30,425 pregnancies resulted in live births. Part B of Figure 11 shows that approximately 30% of these live births produced more than one infant (29% twins and approximately 2% triplets or more). This compares with a multiple-infant birth rate of slightly more than 3% in the general U.S. population.

Although total percentages for multiples were similar for pregnancies and live births, there were more triplet or higher order pregnancies than births. Triplet or higher order pregnancies may be reduced to twins or singletons by the time of birth. This can happen naturally (e.g., fetal death), or a woman and her doctor may decide to reduce the number of fetuses using a procedure called multifetal pregnancy reduction. CDC does not collect information on multifetal pregnancy reductions.

[ART here refers to in-vitro fertilization, IVF, GIFT and ZIFT, but not the use of fertility drugs alone without transfer.]
4. In 2006, 9% of fetal deaths occurred in multiple deliveries, compared with 3% of live births. A multiple delivery is one in which more than one fetus is delivered alive or dead at any time during the pregnancy, and a given multiple pregnancy may include any combination of fetal deaths or live births.

The fetal mortality rate for twins (15.73) was almost three times that for singletons (5.69). The rate for triplet or higher-order deliveries (27.08) was nearly five times that for singletons. The increased risks for multiple pregnancies may relate in part to increased rates of preterm labor, fetal growth restriction, preeclampsia, congenital anomalies, and placental and cord problems. Also, many multiple pregnancies are the result of assisted reproductive technologies, and the use of these therapies may increase the risk of adverse outcomes.

Fetal death refers to the intrauterine death of a fetus prior to delivery. Fetal mortality is generally divided into three periods: early (less than 20 completed weeks of gestation), intermediate (20–27 weeks of gestation), and late (28 weeks of gestation or more). Although the vast majority of fetal deaths occur early in pregnancy, most states in the U.S. only report fetal deaths at 20 weeks of gestation or more, and these intermediate and late fetal deaths are the subject of this report. Statistics on fetal death exclude data for induced terminations of pregnancy. Fetal mortality rates in this report are computed as the number of fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths at 20 weeks or more – the population at risk of the event.

–Fetal and Perinatal Mortality, United States 2006, Centers for Disease Control and Prevention, National Center for Health Statistics, Vol. 60 No. 8, August 28, 2012
http://www.cdc.gov/nchs/nvsr/data/nvsr60/nvsr60_08.pdf

Comments in May, 2013:

Based on the data above, there is plenty of reason to be certain that death in multiple pregnancy and birth occurs much more often than among singleton babies – and to know that it affects thousands of families each year in the United States alone. But there are also reasons to think that there are many more multiples conceived, and more who do not survive, because current data collection underreports their numbers and also makes the actual number of families affected each year difficult to know. Among these reasons are:

– Death in utero at less than 20 weeks' gestation is not counted. In our experience, as well in population studies (see our Bibliography, Loss In-utero), the loss of one or more of multiples at some time from conception through 20 weeks of gestation is quite prevalent (just as miscarriage in singleton pregnancies outnumbers stillbirths later in gestation, as noted by the CDC above)(and multiples face special risks as noted in the reports). Not counting these disregards the realities of parents who often have had their babies diagnosed at 6 to 8 weeks' gestation via
ultrasound and bonded to each of them for months before the 20-week mark. It would also lead to underestimating the actual number of multiples conceived and the actual number of living twins and multiples, if a child whose twin was miscarried at 15 weeks' gestation is not considered a twin birth, or a child whose two brothers died at 10 and 13 weeks along is not counted as a triplet.

– Multifetal pregnancy reduction (MFPR) is not counted. The CDC's Assisted Reproductive Technology (ART) data shows that of the 1 out of 3 women who do conceive after IVF, 1 out of those 3 conceives multiples. It also states that the difference between the number of triplets conceived and born alive may be because of MFPR, but that data on MFPR is not collected. (Nor is it collected for selective termination, chosen by some parents when one or more babies has a major problem that may impact the others.) (However, the Birth Data report states that the marked decrease in triplet and even higher order births was associated [in time period?] with the voluntary practice guidelines for IVF intended to reduce higher-order conceptions.) The ART data includes only IVF, but even more people seek fertility treatment based on ovulation induction (OI) by certain drugs without transfer of embryos; it is the OI procedures that have the highest risk of conceiving multiples, sometimes more than 5. In our experience, it is women who undergo OI who are most likely to have to consider MFPR. Not tracking OI (even though it is said by the American Society for Reproductive Medicine to produce twice as many twins as ART) and MFPR produces a major underestimate of the numbers and sizes of multiple pregnancies that are actually conceived – by parents who very much wished for babies and may be very emotionally impacted by MFPR, whether or not it is successful, or by loss before 20 weeks, after months of bonding through ultrasound. So the "decline" in triplet or higher births in the Birth Data report, when measured by live births, does not necessarily reflect a decline in conceptions, or even pregnancies that go beyond the first trimester, but could rather indicate an increase of in-utero losses that occur spontaneously or after difficult decisions.

– In 2010, for the first time, the number of twin babies born alive had decreased slightly, from 33.2 per 1,000 to 33.1 (while having increased overall 76 percent from 1980 to 2009). If this was not because of an increase in fetal death (2009 data is not yet tabulated), it would be the first time that this has occurred in the data reported by the CDC; the 5% decrease in twin infant mortality in twins in 2009 would be a first also if it does not reflect increased fetal death (or an increase in babies who survive the first year but not their second, as is the case for families we know). At the same time, the 3 times and 5 times greater risk for twins, and the 15% contribution of multiples to infant mortality in a year when triplets/+ decreased by 10% are other indications that twin pregnancies are far from routine (as it had seemed to some when triplet and higher pregnancies were becoming more prevalent).

Until now, our strong hunch has been that the number of twin pregnancies has been increasing more than the risks for them could possibly be decreasing; and that therefore the absolute number of families experiencing twin loss in some way is the same as ever, even with some advances in care. This had proved to be the case with Sudden Infant Death Syndrome (SIDS), after the dramatic reduction in SIDS rates, as confirmed by Alice Check in her communications with the CDC a few years ago; the absolute number of families who lost a twin to SIDS remained the same. Now, it will be seen in the next few years whether the number of twin pregnancies of over 20 weeks remains stable or decreased while mortality decreases, if it does.
This would decrease the absolute number of babies dying and families affected, while still not addressing the losses before 20 weeks and the true rate of twin or higher multiple pregnancies.

– The data counted individual babies, not pairs of twins or sets of triplets or more, so it is impossible to know whether one or both of a set of twins has died, if one of them has died. In this method of counting, at one extreme, every one of the 132,562 live births of twins in 2010 could have been a baby whose twin died in utero after 20 weeks' gestation; or there could have been 66,281 sets of twins born prematurely who all died soon after birth. The lack of showing outcome for sets is significant in several ways. If someone who is considering or undergoing IVF were to know whether—if she was the 1 in 9 IVF patients who will conceive multiples – that it is more likely, if there is a loss, that she will bring no babies home (if that were the case statistically) or to bring one baby home, it would be significant information for her and for her physicians. It also makes it difficult to determine (for example) the extent of the loss of both twins in utero in the third trimester, something that we hear of too often. And – it makes it impossible to determine the true number of families impacted by loss in twin or multiple birth each year, since two or three babies may represent one family, or two or three families. To the extent that there is loss of one or more but not all multiples, more families are impacted with a loss, one that is little understood, devastating, and has lifelong consequences for the family. To the extent that it is both or all the babies, there are fewer families but they are experiencing double or triple (or more) bereavement that is completely devastating and for which there is currently no established intervention (please see the next article). The one study that tracked twin outcomes by pairs found that of the 1 in 20 families who experience death in twin pregnancy from 20 weeks' gestation to 28 days after birth, 45% experienced the death of both the babies (Hartley, Emanuel, & Hitti, 2001). The CDC did produce one set of matched data, for 1995-2000, for twin loss from 20 weeks' gestation to birth, that showed that 1 in 16 lost one or both babies, with 47% of them losing both (CDC, 1995-2000 Matched Multiple Birth Data Set, CD-ROM Series 21, No. 17). These numbers also indicate that for many parents, their chance of losing one or both of the babies even after 20 weeks was greater than their chances of conceiving twins in the first place.

Kollantai, Jean (May, 2012). Loss in Multiple Birth: A Literature Review. This article was written by CLIMB founder Jean Kollantai in May, 2012, for a social work graduate seminar. It uses the number of twin births reported by the CDC and other peer-reviewed information to estimate the number of multiples conceived annually in the US and the number who are alive at the end of the first year after birth, and the actual number of families impacted. It also reviews the peer-reviewed literature on the impacts of loss in multiple birth, and the most important gaps in available information.