

## CHAPTER 13

### VIABILITY

#### **What is viability?**

It is that stage of fetal development when the baby is “potentially able to live outside the mother’s womb [that is, can survive], albeit with artificial help.”

*Roe vs. Wade*, U.S. Supreme Court, 1973, p. 45

#### **Can you use viability as a measure of when the baby is human and therefore has the right to live?**

No! To do so is completely illogical. 50 years ago viability was at 30 weeks. 25 years ago it had dropped to 25 weeks. Today we have a survivor at 20 weeks and several at 21 weeks.

But the babies haven’t changed. Mothers are making the same kind of babies they always did, but they are surviving earlier.

#### **Why?**

Because of a vast increase in the sophistication of the external life support systems around the baby. Because of neonatal intensive care units. Because of greater knowledge and skill of the doctors and nurses.

#### **So what is viability?**

It is a measure of the sophistication of the external

life support systems around the baby. It is not a measure of his humanness or of his right to live.

### **But where did this idea come from?**

From ancient times. Until the 19th century, it was assumed that the baby was not alive in the first half of pregnancy. It was also “known” that when the mother “felt life,” when “the babe doth stir,” that, at that time, the baby “came alive.” Two examples show this:

Abortion was always a sin in the Christian Church. A penitent confessing this sin was given a penance to perform. The penance for the sin of a late abortion was always more severe than one for an early abortion. Why? Because in the late abortion she had killed a baby who was alive.

English Common Law succeeded ecclesiastic law and followed the same pattern. Abortion in the first half of pregnancy was a minor crime, a misdemeanor. Abortion after she felt life, after “quickening,” was a felony, a serious crime.

### **Has that law changed?**

Yes. In the early 1800s it was discovered that the baby’s life began at fertilization, not at quickening (Karl Ernst Van Boar, 1827). Accordingly, in 1869 the British changed their law, dropped the felony punishment back to fertilization, and the two-tier punishment policy was eliminated.

### **But the old idea still lives on?**

Amazingly, yes. Any lawmaker today who supports protecting babies’ lives only after viability is still living in the middle ages, in pre-scientific times.

### **How do you measure age of survival?**

The age of a premature baby at birth is measured by

age from first day of last menstrual period (LMP). Weight is also a measure when the dates are uncertain. A 20-to 22-week-old baby has an average weight of 500-600 gm (1 lb., 2 oz. to 1 lb., 5 oz.) with “normals” varying from 400 to 700 gm (14 oz. to 1 lb., 9 oz.). There are also other maturation factors that are used, such as various measurements made on ultrasound examination.

### **The age and weight don't always track together?**

There is a variance, just as with children and adults, but a much narrower one. Dr. L. Lubchenco, University of Colorado, has been the recognized authority in preparing most of the charts used. Babies can be small for stated age or “runts,” if malnourished. They can also be large for stated age, but still fall within the 90 percentile range on the charts.

### **Will the survival age ever drop under 20 weeks?**

It seems that we have probably reached the youngest age at which the baby's lungs are well enough developed to exchange oxygen. One happy advance has been the use of surfactant in their lungs. This has meant babies under 1500 gm at birth are 30% less likely to die.

Effect of Surfactant . . . in newborn infants weighing 500-1500 gm,  
Schwartz et al., *N. Eng. J. Med.*, 1994; 330 (21): 1476-80

Decreasing Mortality with Surfactant . . .  
J. Horbar et al., *Pediatrics*, Vol.92, No.2, Aug '93, pg. 191

A further advance may be using oxygen-saturated liquid instead of air.

J. Greenspan et al., Liquid Ventilation of Preterm  
Baby, *Lancet*, Nov 4, '89, No. 8671, 1095

C. Leach, Partial Liquid Ventilation, *N. Eng. J. Med.*, Sept. 12, '96

Beyond this, it is probably only a question of time and technology. Someday there will be artificial

placentas, and then who knows how early a preemie will be able to survive?

### **How young can a premature baby survive?**

It depends first upon the existence of a high-tech neonatal intensive care nursery. Almost all medical centers in the developed world have these.

The other factor is the baby. Some top notch medical centers just haven't yet been blessed with the birth of a child so well developed at an unusually young age that he (or she) can survive at, say, 20 to 22 weeks.

### **For instance?**

One example is Baby Kenya King pictured below.



Baby Kenya King born in Plantation, Florida, 21 weeks (4 1/2 months) from the first day of her mother's last menstrual period; weighing 510 gm (18 oz) she was 10.5 inches (26.5 cm). She dropped to 370 gm (13 oz). She is shown at 2270 gm (5 lbs.) with her mother. (Miami Herald, Pam Smith photo)

Another was a 21-week baby who weighted 524 gm (1 lb., 2% oz.) born in the Persian Gulf country of Abu Dhabi

*Indian Express*, 2-4-0 1

But a major center such as Johns Hopkins reported the following survivors:

- at 22 weeks = none
- at 23 weeks = 15%
- at 24 weeks = 56%
- at 25 weeks = 79%

The Limit of Viability, M. Allen et al.,  
*N. Eng. J. Med.* 11/25/93: Vol. 329, No.22, pg. 1597

### **Aren't a lot of preemies retarded later?**

Many assume this, and there was a problem with those saved 20 years ago, but "Preterm infants of less than 1,000 gm (2 lbs., 2 oz.) do not appear to have significantly higher incidence of severe developmental abnormalities in the first 18 months of life than do 1,000 to 1,750 gm babies."

In a study of 68 babies weighing 500-750 gms at Stanford University, the overall survival rate was 35%. Of these very tiny infants, 9% had severe handicaps, 36% remedial problems, and the rest were normal.

Limiting Treatment for Preme, low wt. Infants,  
E.W.Young et al., *Am. J. Dis. Ch.*, Vol. 144, May '90, pg 549

### **How early can preemies survive?**

In your author's files are 6 cases of 23 week (after LMP) survivors. Their weights ranged from 16 oz. (540 gm) to 24 oz. (810 gm).

We have 11 cases of survivors at 22 weeks (after LMP). These weights varied from 12 oz. (339 gm) to 22 oz. (663 gm).

We have 2 cases at 21 weeks (after LMP), including baby Kenya King above.

And 2 cases at 20 weeks (after LMP)

### **And how small can a baby be born and survive?**

We have records of one infant born weighing 10 oz. (280 gm) at 25-26 weeks (after LMP), of an 11.5 oz. (325 gm) born at 27 weeks, and of a 12 oz. (339 gm)

baby born at 23 weeks.

**What of their quality of life as adults?**

A study at McMaster University compared two groups: a) those born weighing less than 1,000 gms. and b) those born weighing over 2,500 gms. In adolescence, of those who were preemies, 71% “valued life highly.” Those who were full term valued at 73%.

Self-perceived Health Status & Health-related  
Quality of Life of Extremely Low Birth Weight  
Infants at Adolescence, *JAMA*, 8/14/96, p. 453

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