EDITORIAL

PUBLIC HEALTH ASPECTS OF PREMATURITY

By definition, a premature baby is one weighing 2500 grams or less at birth, irrespective of its maturity.

Premature babies have a higher mortality rate than babies weighing more than 2500 grams and the mortality rate goes up as the birth weight goes down.

There are obvicusly two ways of reducing this mortality : i.e. by reducing the incidence of prematurity and by providing special care for premature babies.

Some countries have an unusually high proportion of premature babies and the problem of providing special care for these babies is overwhelming. These countries have been trying to solve this problem by altering the international definition to a lower level. The levels used are not consistent in different areas or even in different hospitals in the same area. The World Health Organization was asked to investigate the problem and to suggest a more realistic definition of prematurity which could be used in all countries. For this purpose the W.H.O. started a birth weight study (in eighteen countries) in 1959, and an expert committee [2] met late in 1960.

Relationship between mean birth weight and prematurity rate.

One of the most important facts which emerged from the birth weight study was the relationship between the mean birth weight and the prematurity rate (the proportion of babies weighing 2500 grams or less at birth). As the mean birth weight falls, the proportion of premature babies rises; and this rise is caused by a slightly higher proportion of babies born before 37 weeks' gestation, and a very much higher proportion of babies born after 37 weeks' gestation, i.e. mature but with a low birth weight.

Causes of low mean birth weight :

A low mean birth weight was associated with poor housing and sanitation, poor educational and health services, and mothers who

were undergrown, malnourished and in poor health (with anemia, infections, tropical diseases, infestations, complications of pregnancy, etc.) who bore children very frequently and who undertook hard physical work.

Recommendations of the expert committee.

The Expert Committee decided *not* to alter the present definition of a «premature» baby (they preferred to call it a «low weight» baby). They felt that the problem was largely one of general public health, and that all countries should eventually be able to use the present definition, i.e. when all mothers are born and reared, and produce, in a good environment. Until that time countries with unduly large proportions of premature babies should not be encouraged to concentrate on the smaller babies but rather on the larger ones. The smallest babies have a high mortality rate even with expert care, and are the ones most likely to have physical and mental defects from associated congenital malformations etc. Specialized care for the smaller babies is expensive, needs highly trained personnel, and is not very rewarding.

Preventive Program

The Committee recommended concentration on a preventive program, particularly for countries with a high proportion of low weight babies. Such a program includes improvement of socio-economic conditions and provision of good health services, both general and during pregnancy, e.g. albuminuria depresses fetal growth if the general health is poor, but good health can neutralize much of this effect.

A preventive program must be based on the local factors associated with low birth weight, and these must be investigated.

The size of the problem must be known, therefore birth registration must be good.

Obviously it is necessary to fit the medical care (especially prenatal care) to the area concerned and the personnel available. Health centers may have to be mobile or patients may have to be collected by some form of transport. If sufficient fully trained personnel are not available, the traditional birth attendants can be given a simple training in health education and prenatal care, provided they have some supervision by trained personnel.

Care Programs

Before any care program is commenced there should be a good preventive program including good general public health services, and a good program for infant care. The latter, by itself, will save many of the larger premature babies. Also obviously a care program for premature babies is of little use if the child dies later from poor sanitation, infected milk, malaria, lack of immunization etc.

Care programs can be of two types: simple and specialized.

Simple care. This entails good infant care plus some simple extra measures suited to premature babies e.g. extra heat if required, feeding advice if the baby is unable to feed from the breast, and simple measures to reduce the risk of infection (hand washing for instance). Such simple care can be carried out in hospitals (keeping babies in for longer than usual and teaching mothers to care for their own babies) or in the babies' homes.

Simple care is inexpensive and can be carried out by less skilled personnel than specialized care, employing for example trained auxiliary personnel. It can save the majority of babies weighing more than 2000 grams at birth (more than 70 per cent of all premature babies) and many of those weighing between 1500 and 2000 grams. For care in the home, it may be useful to have some simple equipment which can be loaned to the family.

Specialized hospital care. This is expensive and requires specially trained personnel. It should only be provided after the preventive and simple care programs have been fully developed, when suitable accomodation and personnel are available, and when it can be done without neglecting services with higher priorities. (A pilot university teaching center is an exception to these remarks). Luckily, such care is only required for a very small proportion of premature babies (less than 15 per cent).

Follow-up Care

Premature babies should be followed up for at least one year. The babies can thus be supervised and the mothers advised during this period when the risks of infection are still high. Results of the care programs can also be assessed.

Organization of programs for low weight babies.

A preventive program should be started in all countries. This can be followed by a simple care program when money and personnel are available. The final step is the specialized hospital care program.

To know the size of the problem :

1. Birth registration should be complete. To obtain the distribution of birth weights, each baby should be weighed at birth and the weight recorded with registration. Weighing scales must be issued to all birth attendants.
2. Live births should be divided into the following groups : up to 1000 grams, 1001 - 2000 grams, 2001 - 2500 grams (and if possible the last group should be divided in two).
3. Registration of deaths should be complete. In order to obtain the death rate in each birth weight group, the early deaths should be matched with the births.
4. Attention should be paid to the groups contributing the largest proportion of the total premature deaths. Of these groups those with relatively low mortality rates will benefit from simple care, while those with high mortality rates will only benefit from specialized care.

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REFERENCES

1. W. H. O. (1950) Expert Group on Prematurity. Technical Report Series No. 27.
2. W. H. O. (1961) Public Health Aspects of Low Birth Weight. Technical Report Series No. 217.