

THE BACKWARD BABY.*

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INTEREST in this problem on the part of parents, sociologists and paediatricians, among others, has grown of recent years. So much is this so that the casual observer might well conclude that there had been a real increase in backwardness, and that anxious parents now have a more genuine cause for anxiety on this score than was the case a generation ago. This view indeed is held by certain well established authorities in the fields of education and psychology, for example Burt and Professor Godfrey Thompson, who have expressed gloomy views about the intelligence of the nation. Moreover, considerable publicity by means of wireless broadcasts or otherwise has been given to these prognostications. It is not therefore surprising that many parents should be concerned as to whether their offspring will after all prove to be something less of a genius than they had anticipated. The smaller size of modern families is also a factor in increasing paternal anxiety. I say paternal advisedly, since it is more often the male parent, especially in middle-class circles, who has set his heart on his child being an infant prodigy. With only one string to his bow, the whole tension of paternal ambition is concentrated in a single object. Moreover in these days of compulsory examinations at the age of eleven, together with widespread coaching for the intelligence tests which form part of the examination, the unfortunate, innocent babe is barely able to lift a mug or a spoon when his rattle is whisked away and replaced by a host of constructional toys designed on similar lines to modern American intelligence tests. The slightest failure in performance or slackening of interest is liable to produce a state akin to panic in the proud parent, who has just been comparing notes about his prodigy with the owner of another (but naturally, somewhat inferior) budding genius next door.

It is not therefore surprising that the medical practitioner should now be consulted much more often than formerly as to the mental development of children, even of very young babies. In the past little was taught on the subject of the variations in the mental growth of the normal child. It is perhaps partly for this reason that parents frequently attribute to their medical advisers prophetic remarks which time has proved to be unduly pessimistic. Such prophecies include, "This child will never grow up," or "He will not reach the age of 10." "He will never learn to speak, mother," and the like.

Naturally the doctor who is consulted about a young child who appears backward must have in mind, not so much an attempt at all costs to measure the child's ability, but rather to consider first what is the practical value and application of any prognosis which he may make. First he will reflect that,

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with the exception of cretinism, there is no specific therapy for backwardness. Moreover, cretinism is nowadays a very rare condition. A delay in recognition of backwardness is therefore seldom a matter of great moment. Secondly, any assessment of intelligence made under the age of 5, still more so at less than 2, must be extremely tentative and subject to revision. For these reasons, then, it will be the duty of the doctor in the vast majority of cases to reassure the over-anxious parent and to dissuade him from communicating his anxiety or its effects to his child. In a minority a guarded prognosis must be given, but it is only very seldom that a child of less than two can safely be diagnosed as definitely mentally defective.

BABIES ADMITTED TO THE FOUNTAIN HOSPITAL.

In order to gain some impression of those babies in whom a definite diagnosis of gross defect has been hazarded it may be useful to refer to those children under 2 who have been recently admitted to the Fountain Hospital, certified under the Mental Deficiency Acts. Babies have been occasionally admitted during the first few weeks of life. This is a rare occurrence, on account of the simple fact that we now have on our waiting list some 150 children, a waiting list of three years on the basis of normal intake. From this it follows that whereas admission may be recommended at a very early age, it is seldom achieved until very much later, unless indeed a combination of social circumstances renders admission even more pressing than that of other cases.

In looking over the total admissions for the past four years, including the present year (1951), it was found that 72 out of 442 were under two at the time of admission. The youngest baby admitted during this period was aged 3 weeks. Thus, of all admissions approximately 1 in 6 was a baby of under two. In 1948 with 22 out of 80 the proportion rose to more than 1 in 4. For the present year it stands at 11 out of 71. In addition to the factor of increasing age whilst awaiting admission to hospital the figures are also influenced by the death whilst on the waiting list of some of these weakly children.

What then was the basis on which these young children were classified as mentally defective and committed to institutional care? For the two years 1950 and 1951 clinical diagnoses were as follows: Mongolism 8, hydrocephalus 4, microcephaly 3, cerebral palsy (spastic diplegia) 4, kernicterus 1, phenylketonuria 1, gargoylism 1, familial with epilepsy 1, unclassified 6.

Thus, out of a total of 29 babies under 2, only 6 were unclassified. As might be expected, we find that the picture of mental deficiency in later life is reversed in infancy, so that at this tender age the bulk of diagnoses are made on definite physical signs, whereas later the usual reason for diagnosis is failure to progress, and the unclassified cases considerably outnumber those to whom a label can be applied.

Another point of interest which emerges from the analysis is that 9 of these 29 children are already dead. In addition to their being by nature delicate, these babies have to face those dangers inherent in admission to an overcrowded institution with a nursing staff numerically inadequate and unavoidably diluted by untrained personnel. The importance of these factors in

contributing to mortality is obvious when it is remembered how difficult and time-consuming is the feeding of young babies suffering from the conditions listed.

Of these 29 patients 25 were placed under section 3 of the Mental Deficiency Act, 3 under section 6, and 1 was admitted by special arrangement on a purely temporary basis without the Act at the request of his relatives. The significance of these facts is that section 3 of the Act provides for the voluntary placing of the child in an institution by the parent without the necessity for a magistrate's order. In the case of only three of these babies was an order signed by a magistrate. It might be supposed, as indeed was the case formerly, that a deprived child might be admitted to an institution at an early age as mentally defective, for lack of other suitable accommodation, or because of prejudice arising from the baby's ancestry. It will be seen, however, that in the great majority of cases under consideration there were parents who were actively interested in the fate of the child.

Even with the advantage of prolonged observation in an institution, it is not always possible or advisable to be dogmatic as to the potentialities of young children. None the less it does appear that in this group of 29 the majority are idiots or at best imbeciles. This also reverses the pattern seen at a later age among mental defectives when higher grades predominate and idiots are in a minority.

The cause of death in these young babies is usually an atypical bronchopneumonia. The possibility of aspiration cannot be excluded, and it is not uncommon to find food particles in the lungs on microscopy. This is not surprising when it is remembered how poorly developed are the processes of sucking and swallowing in many of these cases. Pulmonary collapse is not uncommon; this is probably associated with the lack of a normal cough reflex or its poor development. Those who have died out of the group are as follows: Spastic diplegia 2, kernicterus 1, mongolism 1, microcephaly 1, hydrocephalus 2, gargoylism 1, unclassified 1.

It is generally recognized that babies with mongolism are abnormally delicate. In fact all babies with gross mental defect are so. The one case of mongolism in this group was a "blue baby" with gross heart defects and cyanotic attacks from which he was frequently resuscitated with the aid of oxygen. We find at the Fountain Hospital that most of our deaths occur in babies and usually within the first year, often the first few months after admission. We attribute this partly to the effect of an altered routine with different feeding methods, etc., but in the main to the fact that, living at home as most of these children have, isolated from external contacts, the baby has built up little immunity, whereas in hospital he is exposed to the full blast of infection from some 50 other children in the ward in addition to the staff.

It may be mentioned that the patient with kernicterus who died had a developmental quotient of only 17, and examination of the brain showed gross involvement of the cortex as well as of the basal ganglia. Less severely affected cases have a better chance of survival. The unclassified patient who succumbed showed gross abnormality of the brain, with arhinencephaly, porencephaly and microgyria. Of the two with spastic diplegia, one had microcephaly,

brain weight 520 gm. with ulegyria and primitive type convolutions. The other was the first case in a considerable series of post-mortem examinations of gross defectives in which the brain approached the normal as regards macroscopic anatomy. The weight at 775 gm. was small (1 year), and there was an appearance suggesting localized microgyria. Microscopy is awaited.

The intelligence as estimated by a social quotient or developmental quotient varied from 4 to 65. Out of the group, the 5 scoring highest were mongoloid babies. The sixth was a case of gargoylism. The unclassified cases all ranked very low with the exception of one who was of Hungarian origin and, because of his racial features, had been mistaken for a case of mongolism at one stage in his career. The conclusion from this material then is that, quite correctly, the certifying medical authorities, usually the assistant medical officers of health or school medical officers, are cautious in their approach to babies, and will only certify as a rule in the presence of gross physical signs. In fact all the conditions which I have listed are diagnosable within a few days of birth. The clinical features of phenylketonuria in themselves are not always so striking as to suggest a diagnosis, but if the urine is tested the defect will at once become obvious. As this is the second biggest specific group (after mongolism), accounting for 16 out of 700 cases in the Fountain Hospital Group, I suggest that this simple test is worth doing in all cases of backwardness.

I have mentioned elsewhere the drawbacks which may result to a child from being placed in a hospital for mental defect when he is in fact potentially educable, and the great danger that, once this step is taken it may be perpetuated. It appears that misplacement of this type is more likely to occur (especially with deprived children) about the age of 3 or 4, and that it is less common with babies under 2. The case of the Hungarian child shows, however, that even on the basis of well recognized physical syndromes such as mongolism, mistakes are possible. He will need careful observation. The present assessment that he has a "developmental quotient" of 41 is of course subject to revision in a child who is now only 2, and it may well be that he will prove to be educable.

Another case worth mentioning because of the principle involved is that of a child admitted earlier than the group under consideration, at the age of three weeks, with a sacral meningocele of the thin-walled type. He had been considered defective on the basis that his head was thought to be increasing in size (!). In fact, on admission and for some time after there was no evidence of hydrocephalus. His behaviour and development proved to be quite normal for a child of his age. Unfortunately, however, whilst an attempt was being made to arrange his transfer to a surgical unit for treatment of the meningocele, the sac ruptured, infection took place, basal adhesions formed, and the child did in fact develop a hydrocephalus and, as result of an operation for this, he died. As hydrocephalus is not inevitably associated with a sacral meningocele, it appears that the correct treatment for this condition in view of the extremely thin sac was surgery in the first place, rather than certification as defective in anticipation of the development of an Arnold-Chiari malformation.

Other physical abnormalities may in the same way lead to a child being mistakenly categorized as mentally defective. Even a cleft palate may

occasionally prejudice the future of a child in this way. More commonly a spastic diplegia or other form of cerebral palsy may mask a good level of intelligence. Even phenylketonuria is not incompatible with an intelligence within the normal range, as exemplified by a boy from the Fountain Hospital who is now attending a school for educationally subnormal children although in fact his test score is within normal limits.

I would like to refer now to another aspect of the mortality in the group of 1950-51 babies. As I said, the D.Q.'s arrived at on the basis of a developmental scale for children so young are of a very limited and tentative value. Even so it is interesting that if we read the 29 in order of score on this scale, the position occupied by the 9 who died is 29th, 28th, 25th, 23rd, 20th, 19th, 18th, 17th, 16th, i.e., the deaths were amongst those ranking lowest in the scale. This is, however, not by any means an invariable rule, and it may well be that an intelligent baby misplaced as defective may fall a victim to some intercurrent infection in an institution.

INTELLIGENCE TESTING IN BABIES.

There is no general agreement as to the nature of intelligence in adults, though there are many tests which claim to measure "g." Whatever it is, babies are generally understood to possess less of it. (Though one sometimes has the feeling that this adult view of babies is reciprocated!) Few people, however, are so bold as to claim to be able to measure intelligence in babies or to predict the future course of their mental development. The most that can be done is to measure on as objective a scale as possible the level of development attained. The Vineland scale is used for this purpose, as is also the Gesell, which has the demerit of being less useful as an objective comparative measure, or the Cattell scale, which is of the Binet type. The Merrill Palmer performance scale is standardized from the age of 18 months, so that any child who achieves a score on this scale under the age of 2 can be said to be certainly not mentally defective. All those reservations, which apply to the psychological examination of children in general, apply to babies with redoubled force. The difficulty of establishing adequate *rapproch* which exists with many children may be paralleled by difficulty in gaining the confidence of a baby. Negative conditioning may play an important role in this connection. A modern baby's impression of a hospital must be that of a place where needles of varying lengths and calibres are stuck into various parts of his anatomy. The sight of a psychiatrist or psychologist may well therefore produce an effect which can be ascribed to previous efforts to extract from him samples of different body fluids and tissues. The place of examination is also important, and not every hospital possesses a quiet room with suitable apparatus in which a baby can be observed for a reasonable period of time. Babies fatigue more easily than older children and are more variable from hour to hour, so that several periods of observation may be necessary in order to arrive at a proper assessment of mental level. The present structure of the Mental Deficiency Acts makes no provision for admission of children for a short stay of, say, 2 weeks for the purpose of observation and assessment

in a mental deficiency hospital. Such an arrangement is most desirable in problem cases, and should be included in any future provision.* In any psychological examination of a child the examiner must not be too rigid, and some concession to the natural distractibility of the child must be made. With babies, clearly, formal testing is out of the question, and the most that the examiner can do is to provide apparatus and play situations on which the child can be scored according to the items on the scale in use. Such an examination demands a certain experience and ingenuity on the part of the examiner and the ability, which not everyone possesses, to reach the appropriate level for the child. As has been mentioned, scores achieved have little prognostic value, and it is even less possible to assess an individual's future career on the basis of tests at the age of 2 than at that of 5. Repetition of tests, however, after an interval may prove useful in assessing whether a child is making a satisfactory adjustment to a particular environment or whether a change is needed.

EMOTIONAL DISORDERS.

Psychoses are rare among children of any age, particularly so among babies. Neuroses are more common, but fortunately, owing to the elasticity of the child, recovery is usual and is often apparently complete. Classical neurotic syndromes are not encountered among babies. The psycho-analytical school, especially some of its branches, make much of psychological trauma at a tender age. Some psychiatrists, moreover, would go so far as to suggest that much of mental deficiency is a similar process to that occurring in adult psychoses. Indeed, some very young children remind one persistently of adult schizophrenics. It is difficult to express in words the nature of this resemblance. This is not a common phenomenon, but those familiar with both mental hospitals and mental defectives cannot fail to notice it. It consists of a withdrawal, a failure to make *rapport*, an impression left with the examiner that the patient has greater potentialities than the achievement he attains, a failure to meet one's gaze directly and a lack of normal emotional response, often with odd mannerisms and a certain perversity of behaviour which almost implies, as in schizophrenic negativism, a knowledge of what is wanted and a compulsion to do the reverse. This condition has been dignified with the name of "dementia praecocissima." It is, however, very doubtful whether it is in fact in any way a similar process to adult schizophrenia or whether it is necessarily schizophrenic. Certainly in gross mental deficiency gross brain damage is the rule, so that defect in psychology clearly exists on the basis of, and as a function of, organic defect. On the contrary, as is well known, adult schizophrenia has, up to date, failed to show any consistent brain pathology, even when a brain from a sufferer from this condition is subjected to the most careful microscopic scrutiny with refined staining techniques. In fact there is the normal range of affective types within mental defect, so that one can speak of extraverted idiots or introverted idiots, or, if you prefer, of hypomanic idiots (hyperkinetic) and schizoid forms (hypo-

* This has since been done—a period up to 2 months temporary admission is now provided.

kinetic). Superimposed psychoses, some of which may be psychogenic, i.e., due to psychological stress, certainly occur at a later stage in mental defect. I am very doubtful, however, whether any of the cases of gross mental defect encountered in babies are due to anything other than gross brain damage.

That is not to say for a moment that emotional relationships are not important for the baby. On the contrary they are of critical importance, perhaps particularly so in the baby, in determining the set of character of the individual and the use to which he puts such talents as he possesses. It is a truism that the enthusiastic, warm, willing person with a limited intelligence may be of greater social value than a more gifted individual, lacking in humanity. This, incidentally is a point of some importance in determining our attitude to the reproductive rates of different intelligence groups, since intelligence is not the only desideratum in a parent or citizen, though admittedly a great asset. The attitude of a mother to a backward child may determine, to a large extent the degree of its backwardness. A child, already backward but, in addition, rejected by its mother, may respond by withdrawal, and add shyness, hesitancy and timidity, to exaggerate the existing limitations of its ability. The very labelling of the child as "defective" may produce this effect, a situation very often complicated still further by marital discord, resulting from mutual recriminations between the parents as to the origin of the patient's deficiency. The father may point to the maternal relatives as exactly what might be expected in the predecessors of an idiot, whilst the mother may hold up the father to ridicule as endowed by nature with something less than his proper share of wit. Such a situation is naturally further complicated by the intervention of both maternal and paternal clans in the dispute. It need hardly be said that such a development is much more likely if the first, rather than subsequent children, proves defective. Constant bickering, open violence, separation and disruption of the home may result. Whatever the outcome, the effect on the child is not good.

Admission to hospital, especially on a permanent basis, is a major psychological trauma to the young child, and one which must be taken into account when considering the attainment of deprived children who may have spent all their lives in the impersonal, unstimulating environment of an institution. In most hospitals, certainly in mental deficiency institutions, the staff is limited. Their time is fully occupied in feeding, changing and washing. Time for talking to baby, playing with baby, dandling baby on their lap or otherwise devoting to him that attention which can normally be expected from a mother is not available. It was interesting to note that in a residential nursery for children (not regarded as defective) under 3 where the majority of children did not speak, new arrivals, who could speak on admission, soon ceased to do so. Institution life tends to follow a set routine which is indifferent to the demands of the individual. The baby learns to speak because by doing so he can alter his environment. Before speaking he uses facial expression and sign language to make his wants known. In an institution, however, he will impersonally be given his food, have his napkin changed, be put in his cot, or in the playpen, whether he wills it or not, so that emotional expression of any kind has for him a very limited value.

PHYSICAL DISORDERS.

I have mentioned the role played by such defects as meningocele and cleft palate in occasionally leading to the application of the label "mental defective." More frequently is this the case in blindness, deafness and cerebral palsy. A baby with cerebral palsy, for example spastic diplegia, will, naturally, be unable to do most of the things listed on any developmental scale. Even at 2 he will not have begun to talk, he may not sit up and will not stand or walk, neither, probably, will he crawl; he cannot throw a ball and may not be able to hold it. He lacks the necessary motor control to complete a form board or build with bricks. Despite all this it may be obvious, even from an early age, by the baby's expression, interest, attention and apparent *rapport* that he is keenly aware of what is going on around him and in fact has quite a reasonable level of intelligence. In spite of this a mechanical application of test procedure naturally results in a low score. Medical certificates of mental defectiveness are often written in such cases in terms which simply describe the motor disability. More allowance is often made for blind children and, indeed, the opposite is sometimes the case, and one might be tempted to diagnose a degree of myopia in some of our ophthalmological colleagues in that there are instances when, whilst concentrating on a gross eye abnormality, they do not seem to have noticed an equally gross brain defect. However, this is clearly better than the opposite position, where the eye defect is neglected on account of supposed mental defect. Partial deafness may much more easily lead to a child being held to be stupid. Complete deafness is usually noticed, but partial deafness is much more difficult to detect, but may be sufficiently severe to render all spoken instructions meaningless to the child. In all these special physical defects which, clearly, may be associated with any mental level, early training where the child is capable of being trained is of the utmost importance. Few mental deficiency institutions have facilities for education in special clinics of cases of cerebral palsy, the blind or the deaf. It is essential that they should be separated into special groups if they are to receive proper instruction. There are not enough places in special schools for this purpose to cope with the need.

Epilepsy is a problem which often complicates backwardness. The lower the intelligence, the more commonly do fits occur. Fits in young children are seldom typical. They are often a sign of gross brain damage, and are often precipitated by intercurrent infections. In general they become less frequent as the child grows older. Progressive disorders such as Tay-Sachs' and Schilder's diseases are uncommon in mental deficiency practice, but it is diseases such as these which have given rise to the widely held view that epilepsy itself, if often repeated, is a malignant factor, producing progressive dementia. In my opinion epilepsy is in most cases merely a symptom. Frequent fits are more commonly associated with severe brain damage, but some cases with frequent fits do well, none the less, and show no sign of deterioration. The value of treatment must be offset against the loss in intelligence which may result from the use of, at least, the older established

drugs. Occasional fits should certainly not be allowed to precipitate us into advising hemispherectomy or other "psycho-surgery" in a young child.

PROGNOSIS AND ADVICE TO PARENTS.

In the majority of cases where a baby is considered backward by the parents and brought for advice it will be possible to reassure them ; occasionally a guarded prognosis must be given. On the other hand it may be noted by the obstetrician, the paediatrician or the general practitioner that the baby is abnormal, whereas the mother, especially if this is her first baby, may be unaware of the fact. It is extremely important in all such cases to avoid a build-up of emotional tension and to treat the situation on a matter of fact basis. Occasionally one finds that the child has been taken away from the mother and that she has not even seen it. This is never desirable. Even if the baby is grossly deformed, as in hydrocephalus or microcephaly, it is never so ugly as the monster which the mother visualizes in her imagination. Nor will her regret at parting be so sharp if she has faced up to reality. It may be decided that the baby is in need of permanent institutional care, but even so, unless there is an immediate nursing problem, such as the care of a thin-walled meningocele, it is better that the mother should have her child, if only for a time. It is true that in this way she will grow attached to it and be reluctant to part with it. This is better, however, than that, for the rest of her life, she should be filled with regret that she has not made the proper provision for and contribution towards the care of her child. Each case will, naturally, be viewed on its merits. It is impossible to lay down any definite rules on, say, mongolism. If the child is the last one in a large family it becomes to some extent a family pet and the older children will assist in bringing it up. It is well known that the mental development of mongolian imbeciles in particular, and of defectives in general, is greater as a rule if they are at home than if they are in hospital. This is understandable since, at home, the child receives so much more individual attention. On the other hand, there are cases where the child cannot reasonably be cared for at home and admission to hospital is desirable. If the child has a home, however, removal to hospital is seldom necessary before the age of two years. For this period the defective baby presents similar problems to those of an ordinary baby. On all counts it is better for the mother to make the necessary psychological adjustment to parting with her child gradually, and this she will do if she is allowed to keep it herself for a time. Even in the case of illegitimate children it is often possible to find the mother work where she can have her baby with her or to make arrangements with the grandparents.

As to telling the mother, this should not be done in too precipitate a manner, immediately after the birth of the child. Nor should she be informed in an over-dramatic manner. The doctor should content himself at first with conveying to the mother that he is not too satisfied with the progress of the child or that it may be slow in developing. Dogmatic statements as to limitation of ability are never justified. Decisions as to the future of the baby should be left to the parents. They should never be over-persuaded to part

with a child. The decision to place a child in an institution on account of mental defect is *almost never* in the child's interest, but it may be in that of another child or in that of the parents themselves. This should be duly explained. I have known instances where a mother has been persuaded to meet for the first time her child of 14 years or so, and has expressed her surprise at his high level of development and regret that she had not seen him for so long. In such cases the mother had been told to "put the child away and never to see him as he would never be good for anything." A number of such family reunions have been possible, and illustrate the unwisdom of dogmatic prophecies and the desirability of leaving a child in its home as long as possible.

Inevitably when such a subject is discussed, euthanasia is mentioned. Idiots for whom its use has been suggested constitute only some 5 per cent. of certified mental defectives. The economic burden of their care is relatively small. As illustrated above, mistakes in diagnosis are certain to occur. Moreover, the existence of such children provides a golden opportunity for studying the psychology, neurology and physiology of the abnormal brain, and if full advantage were taken of this a flood of light would be thrown on normal cerebral function. Finally, this is an ethical consideration, basic to the whole structure of society, which cannot be discussed in isolation.

Advice will be often sought from the doctor as to the desirability of further children, especially if the first child is defective. Here again the decision must be left with the parents. The psychological value to them of producing a normal child is so great that it is worth their taking a certain risk. Where, as so often happens, the defect in the child is unclassifiable, such a risk is certainly justifiable. Only rarely, as in gargoylism, phenyl-ketonuria, epiloia, or Tay-Sachs' disease is the risk so great that advice should be negative. Sterilization is rarely justifiable, if only because of the consideration that in the event of the death of the father the mother may make a second marriage the offspring of which would not necessarily be affected. Advice as to measures short of this is indicated if the parents decide to have no more children.

At the present a child for whom it is desired to find a place in hospital on account of mental defect must be 'ascertained' under the Mental Deficiency Acts and action taken under those acts. These Acts are long overdue for revision. There should be no need for legal procedure if the case is simply one of mental deficiency in a baby, or, indeed, any child under 16. Parents are usually quite willing to place their children in hospital voluntarily if they are unable to carry the burden themselves. Cases of neglect can be dealt with under the Children's Act as with children of normal mentality. Similarly the law should be altered so that a child cannot be certified as ineducable under the age of 5.

INCIDENCE AND PREVENTION.

The recent Scottish survey gives ground for optimism as to the trend of national intelligence. Some factors which produce still-birth or neonatal mortality also operate at times to produce mental deficiency. Of these,

rhesus incompatibility, syphilis, birth injury and meningitis may be mentioned. More subtle but also more important is the positive value of such general factors as good maternal and neo-natal nutrition, improved hygiene, better housing and the like. With a decline in the infant mortality rate there should also be a reduction in backwardness among babies.

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