ASSOCIATION OF

PAEDIATRIC

CHARTERED PHYSIOTHERAPISTS

NEWSLETTER

Association of Paediatric Chartered Physiotherapists

Newsletter No. 44 August 1987

THE MANAGEMENT OF THE NEUROLOGICALLY HANDICAPPED CHILD.

Content :

YORK
1987

EDITORIAL

In glorious sunny weather York once again welcomed delegates to the 1987 APCP Conference with its interesting programme planned round the Management of the Neurologically Handicapped Child. The fact that the accommodation was fully booked well in advance illustrates the popularity of the subject, whilst the interesting group sessions and the opportunity to visit the widely acclaimed Jorvik Viking Museum were added attractions not to be missed. For those people not able to be present, the precis of papers presented at the Conference, where they have been made available, will give some idea of the high standards of the speakers. The North East Committee are to be congratulated on their hard work and successful effort.

The continuing publicity on child abuse can only be good, even though there does seem to be an occasionally over enthusiastic rush to take them into care, perhaps better to be safe than sorry. However, where no abuse has taken place will the trauma of examination and separation from the family not also constitute abuse? Dr. I. McKinlays article on the history of child abuse, which is carried over from the May edition, gives some idea of the centuries of ill treatment of children and realistically ways of attempting to repair the damage.

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YORK CONFERENCE 1987

Opening the 1987 Conference in York, the Chairman - Mrs. Maggie Diffey - welcomed over 250 delegates and said how lovely it was to come back to York once more, and recalled the last conference there in 1978 when the theme was Sensory Deficiencies. Then as now, she said, the great beauty of the Minster and the spring flowers, notably the daffodils round the city walls, were a sight to behold.

This years Conference entitled 'The Management of the Neurologically Handicapped Child' had obviously aroused much interest among members and non-members alike and had been fully booked for several weeks. Mrs. Diffey hoped that the people lucky enough to be present would have plenty of thoughts to take back to their regions and places of work, to stimulate discussions. She concluded by thanking the local committee in the North East for all their hard work in organising the Conference, and made a special mention of Lorraine Feeney aged 8 who drew the Viking picture on the front of the programme.

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The last date for submission of material for the NOVEMBER 1987 Newsletter will be October 5th. Regional representatives please note.

A REVISION OF THE NEUROLOGY AND AETIOLOGY OF CEREBRAL PALSY

Dr. Ian McKinley. Senior Lecturer in Community Child Health.

There have been dramatic changes in the medical contribution to understanding neurological handicap in the last thirty years or so. The chromosome lesion that is responsible for Down's syndrome was first identified in 1959 and prior to that the explanation of the condition was the subject of speculation. A distinguished professor of genetics published an article in 1959 on stress in pregnancy as a factor in the aetiology of Down's syndrome. The actual explanation was published three months later!

In the middle Seventies we saw the coming of computerised tomography scanning when for the first time the brain could be visualised safely and painlessly. We are now on the fourth generation of computerised tomography scanners with vastly improved pictures. That has taught us a great deal about the varied pathology in cerebral palsy, for instance that people with spastic hemiparesis may have a small hemisphere, a large ventricle, an area of porencephaly, infarcts in the anterior cerebral artery territory, middle cerebral artery territory, or combinations of these. So when we talk of children with typical hemis I ask which typical Hemi we're actually talking about. That's borne out in the examination of older people who have been typical hemis when they were younger. Quite a proportion develop contralateral signs, extra-pyramidal movements and show evidence of visual field defects, sensory defects and other associated features.

Around 1980 there was a dramatic development in the technique of ultrasound imaging of the brain of neonates, through the anterior fontanelle which gave access to the intracranial space. The technology of ultrasound scanning has continued to advance at a very rapid rate. We now know that most premature infants suffer some degree of intercranial haemorrhage, probably more than 60% and that most of these do not suffer any long term consequences. Ultrasound scanning has lead to distinction between haemorrhage and infarction of the surrounding brain tissue, the latter being of much more important significance, but even of people with this condition, many, if not most, grow up to have no detectable motor handicap.

Many years ago, scientists working with chromosomes claimed to have found an abnormality on the X chromosome, a "fragile site", under laboratory conditions and suggested that it might have something to do with mental retardation, dysarthric speech and poor coordination in a group of mentally retarded males. The finding was disregarded as an artefact of laboratory technique until the early 1980's but is has now come to be recognised that the fragile sight on the X chromosome is the commonest chromosome lesion after Down's syndrome and is responsible for a large number of men and boys showing mental retardation.

In 1956, Professor Andreas Rett in Vienna, described a condition which only affected girls. They developed normally during their first year of life and then towards the end of that year began to slow down in development and then regress. They show characteristic hand wringing movements or facetapping.

His explanation of the condition was that it was related to ammonia metabolism, an explanation that has not stood the test of time. Very little attention was paid to his findings until 1980 when a group of European Paediatric neurologists met in Manchester. A paper was presented at that meeting describing 16 similar cases and following the meeting, a paper was published describing Rett's Syndrome which has now come to be recognised as an important cause, although rare of mental and physical handicap.

The importance of identifying specific conditions is partly to further ways of understanding the conditions, to put families in touch with other families with the same condition and also to establish the genetic implications of the condition for future pregnancies and other family members.

The last ten years have seen a vast improvement in the survival rates of low birthweight and then very low birth weight infants. The perinatal mortality rate has declined and the main outcome has been the survival of a higher proportion of healthy infants. It has had an impact on the experience of cerebral palsy in childhood. In the early days of caring for very small babies, it was thought that trying to feed them too early was wrong because of their immature swallowing mechanisms so some of them were starved for days. It was not appreciated at that time that starving premature infants, causes them to break down their own body tissues and the practice led to an epidemic of spastic diplegia. The coming of naso-gastric feeding tubes made a very great difference.

A study in Sweden calculated that over a period of a few years 2,200 infants had survived who would not previously have been expected to survive and of these 55 suffered from cerebral palsy so the main impact of this care has been to help families have a better chance of having healthy children rather than contributing substantially to the population with cerebral palsy. In fact the proportion of people with cerebral palsy in the population has remained fairly constant over the last thirty years at about 2 - 2.5 per 1,000 but children who might previously have suffered cerebral palsy as a result of birth asphyxia or traumatic delivery are surviving unscathed and a new population are coming forward with other pathologies, particularly genetic conditions and a very small contribution from low birth weight infants.

The appreciation of genetic causes for cerebral palsy has come rather later than in the mental retardation field, but they are now coming to be among the more important causes in children with symmetrical cerebral palsy. That applies to those with spasticity, ataxia, or choreo athetosis.

Each Health Authority can expect to have about 6-10 infants with cerebral palsy each year and can expect to have between 9 and 15 infants with mental retardation. Of those with cerebral palsy, about a third are also mentally retarded, of those who are mentally retarded, about a fifth have cerebral palsy so there is a substancial overlap between these populations. Altogether each District can expect to have about 20 new children each year with major neurological handicap.

There have been substantial changes too in the patterns of care for people with neurological handicap. One of the most striking features in this country has been the greater involvement of parents. On the whole it has been of great benefit to families to allow greater involvement.

Around 1960, The Spastics Society began campaigning for Child Development Centres where coordinated health services for children with neurological problems could be carried out. It is curious to see in some circles, criticism arising of these centres and even the suggestion that they should all be closed.

From about 1974, legislation enabled all children to receive education. Prior to this many children were looked after to varying degrees in training centres run by the Health Authority. They included many children with severe cerebral palsy some of whom were of normal or superior intelligence. Not all children were found places at such centres. Now all children are entitled to go to school. Also in recent times, particularly in the 80's, further education schemes for children with neurological handicaps including retarded children have come about and only now are attempts being made to evaluate the effectiveness of these schemes. I think perhaps the main thrust of future development may be in adult services for people who have children with neurological impairments. The evidence is that such services are at present at best patchy and in some instances grossly inadequate.

To look at the neurology of cerebral palsy. There are of course many cerebral palsies and perhaps we ought to talk about cerebral palsies rather than cerebral palsy. There have been few thorough pathological studies of large populations of children with these conditions but where they have been carried out, most children have multiple lesions, cortex, basal ganglia, brain stem and cerebellum and the clinical outcome and the motor state of these children depends on the balance of importance of these individual lesions.

There has been a great expansion in understanding how the brain develops. We know how following fertilisation of the egg the cells divide quite slowly during the first few days following fertilisation and then in the centre of this ball of cells there forms a disc which is going to form the embryo and the surrounding sphere is going to become the placenta. In the middle of that disc there is a neural plate which folds over into a neural tube beginning about three weeks after conception and complete at about three and a half weeks after conception. It begins in the region which is going to become the cervial cord and proceeds rostally towards the brain and caudally towards the first lumbar segment of the spinal cord. The distal part of the spinal cord derives from the caudal mass, a curious area which is going to give rise to the kidneys, gonads, parts of the skeleton, muscle etc... If that area fails to differentiate then terratomas may form in the sacral area. These can be very bizarre, containing teeth, hair, cartilage and other surprising tissues.

It is not very long ago that we read pieces in the paper about potato blight or tea drinking habits in relation to spinal cord defects. These were studies which correlated outbreaks of potato blight with the time of birth, failing to realise that the neural tube is actually closed three and a half weeks after conception and any amount of potato blight is not going to cause it to reopen.

There has been better understanding of the way nerve cells develop. Neuroblasts mainly form around the central canal of the neural tube and they then migrate out in the nervous system to take up the positions they are going to assume for the rest of the individuals life. They also differentiate into

particular kinds of nerve cells at particular stages of foetal development. The anterior horn cells and the motor nerve cells of the brain stem make contact with the muscles at approximately seven to eight weeks after conception and active movements become possible thereafter.

It is curious that there is a considerable over production of nerve cells both in the brain and in the spinal cord and that three quarters of the motor nerve cells ultimately dissolve away. It is thought that the cells which make the best chemical contact with the muscle cells are those which survive.

By about 16 weeks after conception, in most parts of the brain the complement of nerve cells is fairly complete though there are some areas for which this is not true - the cerebellum, the prefrontal cortex and association areas of cortex which link together motor cortex and sensory cortex. These tend to develop later and over a shorter period and are therefore more vulnerable to insults. This means that lesions occuring prior to sixteen weeks are likely to have devastating effects on the development of the individual leading for instance to severe spastic quadraparesis or mental retardation whereas lesions occuring after that time are more likely to lead to patchy effects.

The brain grows very rapidly following sixteen weeks through a process known as the brain growth spurt. There are three main elements in that. The first is a development of interconnections between nerve cells which number per nerve cell anything from 800 to tens of thousands. Then there is the development of Glial cells which outnumber nerve cells in the brain by about nine to one. A great deal has been learned about the way these cells work, their inter relationship with nerve cells, their role in repair following damage to nerve cells, in facilitating interconnection between neurones and their role in the third main process of the brain growth spurt which is myelination or the laying down of fatty insulating material to allow rapid conduction of electrical impulses along neurones.

The brain growth spurt continues after birth for the first two or three years of life but by the age of 5 the brain has reached approximately 90% of its adult weight. What it has to do thereafter is to learn.

I would like to dwell for a few moments further on the evidence concerning low and very low birth weights so far as cerebral palsy is concerned. There have been a few comprehensive epidemiological studies of cerebral palsy. One of these was in western Australia. Comparison was made between children born between 1968-71 and children born between 1979-81. In the former period, just over 5% of children with C.P. had birth weights less than 1500 grammes whereas in the latter period the figure rose to 11%. The figure for birth weights less than 2,500 grammes had only changed from 29% to 32%. Throughout the period of study 70% of all children with C.P. were of normal birthweight and the majority had not been either premature or small for dates. A recent very major study in the U.S.A. reached the conclusion that, overall, cerebral palsy syndromes are not generally related to perinatal asphyxia on the basis of a study of 55,000 infants born within a week. Altogether in their study, nearly 2% of all births were under 2,000 gms. and about a fifth of all the children with C.P. had been under 2,000 gms. but of all the babies under 2,000 gms. only 5% were

found to have C.P. at the age of 7. In that study, 78% of all children with C.P. were of normal birth weight. Many had no additional perinatal risk factors but the majority had features suggestive of prenatal lesions, unusual palmar creases, or dysmorphic features suggesting that the lesion had occurred earlier in the pregnancy. They suggest that altogether 9% of their whole cohort of children with C.P. had a perinatal cause. That compares with figures of ¾ given in the 1950s. Similar figures were found in a Canadian study published by Dunn and in later work from Australia by Blair and Stanley. This does not apply world wide and probably in some countries such as Hungary the proportion with perinatal factors is higher.

The conclusion of all these studies is that cerebral palsy has more in common with congenital malformation and the causes of mental handicap syndromes than with birth asphyxia and perinatal difficulty and that the direction for future research should be directed more at understanding genetic, terratogenic and early pregnancy environmental influences as opposed to perinatal care. Cerebral palsy rates may no longer be considered a valid measure of perinatal care.

The surface of the brain is thought to be organised in about 4 million modules. Each of these modules contains between 1,000 and 3,000 neurones and is linked to about 500 other modules on the same side of the brain and 50 on the opposite side. They are not identical throughout the brain and have different appearances in different parts. By injecting radio active material into the brains of experimental animals it can be shown that particular other parts of the brain will show the effects of inter-connection from the part originally connected.

By using a very difficult staining technique, it is possible to study the dendritic spines and their interconnections in great detail. Such studies as there have been show how the interconnections develop from being very sparse indeed in the developing foetus to very dense in the mature brain. The interconnections are generally very much fewer in cases of mental handicap and cerebral palsy than in the normal even though the brain may look grossly normal on examination. For example, it has been shown that the organisation of interconnections in the cerebellum in a case of Down's syndrome more closely resemble that of the foetus of 36 weeks than the older individual.

At 33 weeks gestation, the interconnections are already fairly well advanced in the motor cortex. Attempts to predict future cerebral palsy at this stage are being made. Ultrasound can be used to show gross structural problems. Recent work in Liverpool, looking at evoked response techniques has found that although visual and auditory evoked response testing is useful in predicting subsequent visual and hearing impairment, they are not particularly useful in predicting subsequent cerebral palsy. However the somatosensory evoked response does look quite promising presumably because it relates to a nearby area of the brain.

There have been relatively few brain metabolic studies in children and no significant studies in this country. Work in Copenhagen with adults looked at the brain in different states of activity. It was shown that the area of brain active during the planning of movement is anterior to the area of the brain active while

the movements are being carried out. This observation provides a physiological explanation for all those children who have such difficulty learning an activity yet once they have learned it perform it quite well and those others who seem to know exactly what is required of them but cannot organise themselves to carry out the task.

The development of clinical genetics is going on apace. A major area of development is in gene mapping, in identifying the particular place on the particular chromosome where genes are carried and also identifying carrier states of chromosome abnormality. This is done by finding biochemical or other specific lesions that are carried by individuals with a particular handicap and which are coded for or carry distinguishing markers nearby on the chromosome. While chromosomes are dividing, they swap genes with each other and in some chromosomes that happens much more readily than in others. For instance on the X chromosome, there is a 'hot spot' around the area of the gene for Duchenne dystrophy and a great deal of gene exchange, experimentation and mutation occurs at that particular place. I expect that over the next 20 or 30 years there is going to be a very great expansion of knowledge in this area to the point when true prevention of handicap can begin to occur as opposed to termination of pregnancy which in anybody's terms is not a very satisfactory way of dealing with problems.

There are great variations in normal development. Dr. Robson in 1970 pointed out various methods for learning to get about which are usually inherited within families. Children who shuffle rather than crawl are always slower to walk. It is therefore more helpful to relate to normal ranges rather than milestones.

Looking at the centile ages for sitting unsupported, the age for the "shuffling" group is 2½ months after the 'crawling' group. At 15 months there are still 3% of shufflers who are not sitting unsupported who will turn out to be normal. The ability to walk 10 paces is 5½ months ahead in the crawling group as compared with the shuffling group. 3% of shufflers are still not walking at 2 yrs. 3 months and will be normal. There is almost always a family history of shuffling or just getting up and walking and this knowledge can save these children a lot of unnecessary investigations. Work from the National Development study looking at the 4% of children not walking at 18 months found that 43 (per 1,000), 4 were severely mentally handicapped, 15 were moderately mentally handicapped 0.3 had Duchenne dystrophy and 2 were C.P. The rest were simply delayed in development.

The same study showed that walking is not social class related as might be expected. Indeed the classes at the extremes - social classes 1 and 5 were the slowest to walk. The age of uttering first words is not class related either although subsequent language development is.

Nelson and Ellenberg looked at children who had a definate diagnosis of cerebral palsy at one year and followed them up at the age of seven. Of 229 'definite' C.P.s, 118 had grown out of it when they were 7 years and showed no signs of C.P. 100 had definite C.P. and some were doubtful. Of 425 who had suspected C.P. at one year, 411 showed no evidence of it at seven and only 7 had definite cerebral palsy.

The title of the article was 'Children who outgrew cerebral palsy' and these children do make it very difficult for people trying to evaluate methods of intervention. They are probably the types of children that lead to premature claims of "cures" by some treatment methods.

Finally, studies looking at 16-30 year old adults with neurological handicap show several gaps in provision for these people. Many were unaware of several of the benefits they were entitled to. Many were unhappy with the health advice available and the education and training opportunities available. It may be thought that these people are the responsibility of Social Services but when asked about visits from social workers most were dissatisfied. Concerns voiced by parents included the lack of long term residential accommodation for their children when they became unable to cope. That is the area which presents the main challenge for people with cerebral palsy in future.

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THE BOBATH CONCEPT

Miss G. Stern. Senior Physiotherapist - The Bobath Centre

The Bobath centre specialises in the post graduate training of therapists in the treatment of cerebral palsied children. Mrs. Bobath began her work in the 1920s and Dr. and Mrs. Bobath set up the centre after many years of study and work as a charitable institution in 1951.

It is time to destroy some myths that have grown up about the Bobath concept. There is no magic about our treatment and some of the results we achieve. If we achieve so called miracles after one or two treatments it is purely because we have acurately identified the problem and through careful handling have been able to attain previously untapped potential. Secondly, there is no dogmatism about the concept, the only dogma being that one must adapt the treatment to the child and not try to make the child fit the treatment. Thirdly, we feel very strongly that the 'professional' is not the only person with the skills to help the child. We must use our skills to turn the parents from passive bystanders into active participants in the treatment of their child.

How is cerebral palsy characterised? The first factor is that the upper motor neurone lesion interferes with the maturation of the brain leading to retardation and arrest of motor development.

Secondly there is a release of abnormal postural reflex activity which shows itself by abnormal patterns of posture and movement.

These factors will lead to a multiplicity of problems affecting the whole child thus he must be seen and treated as a whole person and his problems closely related.

Our treatment is based on a concept which allows for a wide variability of techniques which have to be adjusted to the individual patient during each treatment. Our concept consists of a different way of assessing and interpreting the child's problems and not only his motor problems. It involves problems of

development, pathology, functional activities of daily living, behaviour, perception and parent training. Our assessment is a continuous process. We assess while we treat and we treat while we assess so after an initial assessment leading us to treatment planning during that treatment we will constantly reassess and adjust. In this way we can constantly modify and adjust to the child's needs. This is a two way process, the child learns from our handling and we learn from the child's response to our handling so assessment is treatment, treatment is assessment.

In our initial assessment we do not simply observe static postures and reflexes and note them down. This does not help us to plan treatment. Instead, we watch how a child moves. If he is doing it abnormally, we then ask why does he move like this? If he is not doing certain activities appropriate to his age we ask can he? If he cannot, we ask why not? Perhaps it is due to abnormal muscle tone and movement patterns or lack of experience of more normal movement. Often it is only a part of the movement that he cannot do or does abnormally. We must highlight those difficult parts and treat only those. By constantly asking the question why, we hope at the end of our assessment to highlight the child's main or primary problems and to have separated them from the secondary or compensatory patterns, eg, a child who is creeping around the floor may have stiffness around the shoulder while seeming to have a normally functioning arm. This may be stiffness arising from constantly pulling with the arms to compensate for diplegic legs. Treatment would therefore concentrate on the legs and not the arms.

The standard assessment form tends to be so long that by the time you have completed it, you cannot see the wood for the trees. In addition, because of the alloted spaces on forms one is forced to fib the assessment into the given space. We find it easier to start with an empty piece of paper and write down what we actually see. We do however use heading to help us in our assessment.

The first feature is the general impression. This just gives somebody else reading it an overall view of the child. How dependent are they? Are they big or small for their age? social interaction etc.

The second very important feature is Tone. It is vital to ascertain what the basic tone is like, both at rest and on activity. In addition we must note postural patterns that we see, note asymmetries abnormal postural patterns, whether the upper body is more affected than the lower etc. Note exactly how the child looks and adapts in different situations.

Having ascertained the basic level of tone and patterns of movement, we go on to look at how the child does things, how they sit, stand, crawl etc. and decide what we think is the problem by looking at how they are doing things.

Next we look at what they are not doing. This is particularly important for the child who is quite mildly affected. We need to look carefully at what they are not doing. For the more severe child, it is more important to find out what they can do in order to have a starting point.

Only if this is a first assessment would we actually add what their posture is like in supine, prone, sitting, etc. If they are not actually moving from these positions then it will not be particularly relevant for treatment planning but it is relevant in a first assessment with regard to danger of contractures etc.

We then come on to what should already have come to light. What are the child's main problems? We should pick out three or four only and make them very specific to what the child's problems are now.

Finally we come to the aims of treatment. These will be directly related to the problems.

I would like to mention some of the changes that have occurred. From Mrs. Bobath's original concept, many varied techniques have been devised. We are constantly changing our techniques. What does not change is the concept of looking at the child and establishing their particular problems.

One big change is from using reflex inhibiting postures as static positions. It is possible to place children in positions which will reduce spasticity but only as long as the child does not move. Now, instead of static postures we use key points of control to guide the child through normal movement, the child moving actively where he is not being held. From these key points we can both inhibit hypertonus and facilitate normal activity as required. We now talk about reflex inhibiting patterns not postures.

Our emphasis has also changed to a more functional base. We treat while the child dresses, undresses, eats etc. This gives a direct carry over of treatment into daily life activities which does not come from just exercises.

Quality of tone will dictate how a child moves. Abnormal patterns of posture and movement are closely related to abnormal tonus. Our treatment therefore is based on the normalisation of tone, high enough for stability, low enough for movement.

It is important to realise that the patterns we facilitate are the child's own response to being moved. We do not learn by being moved passively. We must bear in mind that the spastic child cannot respond normally to a normal stimulus but can only produce the abnormal patterns his brain puts at his disposal. We must therefore be very careful about the indiscriminate use of stimuli. We must carefully control the child's output in response to stimuli so that normal movement patterns occur and the brain has a chance to learn them by repetition. Gradually control is withdrawn and handed over to the child as and when we feel they are ready. The brain learns by constant repetition so giving the C.P. child the opportunity for repetition is vital for carry over and improvement.

It follows therefore that if we are going to produce normal movement patterns in C.P. children a thorough knowledge of normal development is essential.

Our aims of treatment must be relevant and realistic. They will be influenced by several factors, motivation, age of child, age of starting treatment, severity. Although cerebral palsy is not progressive, its effects often are - contractures and deformities develop etc. Aims of treatment may have to be maintenance not improvement.

Team work is essential with good communication between different therapists involved. Children cannot be segmentalised. Ideally treatment sessions are individual, two or three times a week and should be parent training sessions. This is obviously not possible in a lot of Health Service situations but the answer is not to economise on time by treating children in groups. The lack

of control over each child will lead to a deterioration of movement quality. Neither is it the answer to cut down the time spent on each treatment session. Ten minutes is never going to be adequate for the child to get to know you or you the child and his parents. It is perhaps for this reason that a lot of parents go searching for alternative treatments. They want to be able to understand their child's handicap and what they can do to help. There are other parents who will not give up searching for alternatives because they are desperate for a cure and this is the one thing we can not offer them, and nor, I believe, can anyone. What we can do is maximalise potential. These parents will continue to be disappointed as they battle on in their search. We should not turn our backs on them for they will need our help again some day but in the meantime let us concentrate our efforts onto those who want and need our skills now.

Organisation of your patients and your time is the only real answer. Initially work out how many 2 or 3 time weekly 45 minute sessions you can offer. Then divide your patients into priority groups. Schedule the high priority group in for regular 2 or 3 time weekly treatments for 2 or 3 months, ensuring that a parent training programme is being adopted at the same time so that the parent is confident and good at repeating the treatment at home. During the period of intensive treatment,a home programme is drawn up which the parents follow at home until the next treatment session in another 2 or 3 months time. During the intervening period, the next group can be scheduled. This is one way of solving the problem of too many children and too little time.

Community therapists might do well to try to get a therapy room for periods of time and having treatment sessions there makes better use of their time makes a meeting place for mothers with mothers of similar children and gives parents more confidence following the intensive modules of treatment to carry on at home and frees home visits for practical problem solving.

If you are school based, it may be wise to concentrate on one school at a time if you have many, with an emphasis on instructing teachers and helpers. Many teachers are only too willing to help the child if only they know what to do. Teachers who are hostile to therapy in the classroom are usually so through fear - of the unknown, of admitting they don't know what to do, of hurting the child. A programme set up by therapists to help teachers and aides would pay dividends in terms of carry over and economical use of therapists time, not to mention helping the child improve on the quality of movement in the classroom situation.

Our keynote is and always has been quality of movement which in turn will affect function. It is relatively easy to get a proportion of our children to walk. The challenge is to keep them walking for years after they first got onto their feet. This can only be done by adequate preparation for standing and walking - normalisation of tone. We must resist the temptation of short term gain at the expense of long term independence.

So what now is the outlook for the future. We at the Bobath Centre remain committed to Dr. and Mrs. Bobath's ideals of striving to attain the highest possible standards of treatment and to continue to train 88 therapists a year in our 8 week full time training courses. Let us hope that with your help we will continue to influence the quality of tone, normalise the quality of movement to

get better function and thus improve the quality of life of our patients and their families.

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CONDUCTIVE EDUCATION

A Holistic approach to the Neurologically Impaired Patient.

Mrs. E. Cotton FCSP.

The Institute For The Motor Disable and Conductor's College was opened in Budapest, Hungary, in the early sixties. Professor Peto's system, conductive education, recognises the global development of the child. Peto suggested that what the children with cerebral palsy fail to learn in their first years of maturation must be taught them like a skill, and they must not only be taught, but given the opportunity to practise their skills in many different ways. In conductive education everything comes under the umbrella of learning. The cerebral palsied child like the normal child, will need one educator (the conductor) who will teach him everything "from sitting on the pot to the ABC", and Budapest is geared towards one major goal, to give children with cerebral palsy an intensive training to prepare them for normal school.

A new Institute, housing c. 400 children with CP as well as Spina Bifidas, Parkinsons, Adult Hemiplegias, Paraplegias and other neurological conditions was opened this year, beautifully placed in the Buda Hills.

Dysfunction

We can only make few accurate statements about the functioning of the injured brain; but we can see how we function ourselves. Function can be observed, analysed and taught. As function is learnable, turning dysfunction into function (orthofunction) opens the door to a learning programme which can be adapted to any level of dysfunction.

Professor Peto suggested that even profoundly handicapped children can learn to perform tasks that hitherto seemed unattainable. He made no absurd claims of cures, but maintained that all children (except imbeciles) can learn something, provided they are educated in the right environment, are set the right goals and are properly motivated. Many will achieve orthofunction.

By classifying cerebral palsy as a dysfunction and stating that the child can learn to turn dysfunction into orthofunction Professor Peto removed the separation between therapy and education and put everything under one umbrella - learning.

The child must first learn to learn, learn to react to his needs (intentions); and to adapt to the demands of his needs. This is the biological part of learning. Peto insisted that the learning situation, the pedagogical approach must be right and provide an environment suitable for learning. Such an environment must be stimulating, but above all motivating. Indiscriminate, irrelevant stimulations (TV, radio, wall decorations, mobiles, etc) will only confuse the child

while a motivating atmosphere is one where all equipment and furniture is relevant to the specific learning situation.

In Hungary all children suffering from cerebral palsy attend the "Institute for the Motor-disabled". At first they come with their mothers who learn how to live with their children. Later the children will attend toddlers and nursery groups. If day treatment does not seem sufficient, or if the children come from parts of Hungary outside Budapest, they may become residential pupils. Most of these children will be prepared to attend normal school and to satisfy the Hungarian educational system. Professor Peto did not judge children according to intelligence, an immeasurable factor in these children. He judged them according to their willingness and desire to co-operate with other children, and according to their response to the staff and their motivating efforts. Only if the child still showed no sign of participation after many attempts, would he give up.

Learning depends on motivation which is encouraged by the staff, by the children working in groups, by the right goals and expectations and by the child being given tasks which are learnable (possible) and which can be used in his daily life. Once the child is motivated he will learn, and when he learns, progress will take place.

How does Conductive Education work?

1. The children always work in groups. The groups may be selected according to age, handicap or intelligence, but above all the children must be happy in the group and influence one another positively. The groups function to promote social behaviour and to teach the children to live together. The one to one relationship so favoured in the West is only used to help a child to function better in the group.

   The large number of children in the Institute make it possible, with trial and error, to arrange perfect groups. (One of our difficulties here is the small number of children in schools and clinics from which selection can take place). A well selected group is a great asset to learning.

2. The environment must be conducive to learning. The room must be pleasing, stimulating but not distracting. Equipment must be sparse but relevant to the learning situation. The education material applicable to the subject taught. At first the physical and conceptual programmes, which always work hand in hand, will centre around the body-awareness of the child. Later the work will include spatial relations until the child fully understands himself and his surroundings.

The Institute is not only an educational centre but also a Conductor's college.

In conductive education the conductor is the educator dealing with groups of children who are well matched in age and ability. Entrants are accepted for training as conductors in the institute when they have finished their A levels. They study for four years, doing in the least six hours practical work a day and attend lectures and seminars. This gives them both the practical and theoretical background for their work.

The syllabus for the course consists of child care, nursery and infant teaching, educational theories, play theories, anatomy, physiology, pathology, movement theories, splint making. This training creates a new profession and

a new professional outlook to deal with all the problems of a neurologically impaired child. (The conductors also learn to deal with adult neurological conditions such as Hemiplegia, Parkinson's disease, Multiple Sclerosis, Dystrophies and Paraplegia).

The conductor principle eliminates the need for the team as the conductor embodies the team within her person. All conductors alternate their shifts (7 a.m. to 2 p.m., 1 p.m. to 7 p.m.) and are, therefore, able to see the children in all situations during the day, and as Peto said, "turn any part of the day into a learning situation".

Conductors are paid during their training and the course ends with a state registered examination. The institute and the examination both come under the ministry of education.

There is, of course, still a need for communication amongst the conductors. The overlap between morning and afternoon gives them the possibility daily to pass information about the children to the next shift.

The conductor principle leads to continuity and consistency. Walking, for instance, one of the most important achievements in cerebral palsy, can only be established if the child walks properly in all sorts of situations during the day, to lunch, in the classroom, to the toilet etc. etc. I remember saying to a little boy in an English school, "let us walk to dinner", he answered, "Why, you are not a physiotherapist", which clearly indicated that to him walking was not a means of getting from A to B but something one did with a physiotherapist. This is one of the reasons why so very few children, with more than a light handicap, are able to walk. It is also more convenient, quicker, but quite wrong, for the staff to bundle the children into wheelchairs.

Continuity means it is possible for the children to practise a skill in many different places, not only in a specific learning situation but in the many inter-connecting, in-between situations of which life consists.

Continuity is necessary to reinforce a new skill. An opportunity to use the same skill for many different tasks is also essential. Transfer of skill is promoted by the conductor principle. If, for instance, a conductor sees a child pushing down his trousers using his thumb, she will make a mental note and see that he uses his thumb when holding a crayon. If the child has learnt to sit freely on the pot she can use this ability to teach him sitting on the floor and on a chair.

Rhythmical Intention

Having set the scene for learning (the Conductor, the correct environment and a structured programme), Professor Peto was still faced with the major problem. How is it possible to teach a cerebral palsied child active movements in acceptable normal motor patterns? If asked to do something the child will react by using and reinforcing his own abnormal patterns which are all he knows.

To avoid these patterns and reactions to commands the child is generally treated with various techniques of handling to facilitate normal movements. (Rood, Voita, Bobath). But response to handling is not the same as self-initiated active movements and will not develop a motor memory which can only improve with action. To assist physical and functional learning Peto used a special facilition, Rhythmical Intention, a technique where movement,

function and language act together as a whole. The child or patient will be presented with a suitable task, and told what he is going to learn. The task will be analysed and broken into its many parts and the group will learn the task-parts in suitable sequences until they can be put together in a flowing motor pattern. When learning the tasks the children will express the intention "I push my hands forward" and perform the movement rhythmically, using counting or dynamic speech slowly or fast according to the dysfunction. If the children cannot speak, they may participate with sounds or even simple movements as it is important that they indicate their participation. A child writing to her father, a Director in Bell's telephone company, explained Rhythmical Intention succinctly. She came to England to learn to walk and to participate in Conductive Education. "Dear Daddy," she wrote, "I think it is worth your money that I am here. I, the telephone, tell my legs what to do and often they obey me."

The important factor is the "I", the child reacting to his own command and connecting the cortex with his limbs. Jernquist (1984) stresses the importance of accurate use of language, fitting developmental age and comprehension, and shows how this influences the children's performance, and their participation and their concentration and attention span.

Rhythmical Intention is a powerful weapon in the hand of the Conductor. It unites movement, function and language. It adds to the children's comprehension of movement and function, and it enables the Conductor to work with a group for much longer periods than ever envisaged (Jernquist 84), and is a powerful motivator within the system.

It should be remembered that Rhythmical Intention is not a method in itself. Peto described it as a tool, "Others give them wheelchairs, I give them language". It is as valueless to separate Rhythmical Intention from the whole as it is to take the group, the Conductor and the Programme out of the context of the system.

Professor Peto always stressed the whole. During one of my first visits to the Institute he asked me what I had been looking at. I told him that I had seen groups learning to read, write, walk, get up from the floor etc. etc. He said, "and what happened in between?" The in-between, the inter-connections that produce a whole is what separates Conductive Education from other methods, where as someone said, "the children lose what they have learnt in one place on their way to the next."

Instead of a fragmented multi-disciplinary approach, Conductive Education exposes the children to a learning programme which is understood by all the staff and consistently pursued by everyone.

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THE INFLUENCE OF "CONDUCTIVE EDUCATION" IDEAS ON SPECIAL SCHOOLS FOR CHILDREN WITH SEVERE LEARNING DIFFICULTIES IN OXFORDSHIRE

Schools consulted:

Bardwell, Bicester
Bennett House, Abingdon
Bishopswood and Sonning Common Primary (Nursery assessment)
Fitzwaryn, Wantage
Frank Wise, Banbury
John Watson, Wheatley
Mabel Prichard, Littlemore
Springfield, Witney

The above schools catering for children with special needs have all been exposed to ideas of "Conductive Education" to some degree. The way in which they have been introduced and the extent to which they have influenced the curriculum varies considerably. The areas most affected are the nursery assessment classes and the multiply handicapped, whether in special care classes or integrated throughout the school.

In many schools the close working relationship in the classroom between the physiotherapist and teacher encouraged the development of a "conductive education approach". Regular joint meetings of physiotherapists and teachers involved with the physically handicapped take place. Here some of the principles of "Conductive Education" are outlined and there is an opportunity to exchange ideas and experiences.

During the past two years "groups" have been formed in most of the schools. The number of children taking part, the degree of handicap and the frequency of group sessions differ but the strong links between education and physiotherapy are consistent.

There is a growing desire to obtain more knowledge about the nature of "Conductive Education", to share experiences and to examine the use of such programmes with the profoundly handicapped. There is perhaps a need for more speech therapy involvement.

Teachers are aware that this approach is not appropriate for all children. There is a need to decide which children are likely to benefit from a form of conductive education. They are also aware of practical constraints when attempting to introduce this method of teaching consistantly within a mixed-ability class. There may be implications for school organization, curriculum and staffing if it is to form a meaningful part of the total education of the children concerned, while still providing a balanced curriculum for those with other special needs. As media interest in "Conductive Education" increases, and pressure groups develop, there is a need for informed staff to answer parents' questions about this system of education.

SERIAL SPLINTING

Mrs. Margaret Jones MCSP. Burnley General Hospital.

Serial splinting can be used as an adjunct to treatment in a number of conditions where muscle inbalance leads to poor gait pattern. The body strives to perform movement as efficiently as possible and any abnormality causes an increase in the physiological effort required.

WHEN?

Early intervention can prevent the development of an abnormal pattern of walking.

Established patterns can be modified.

The effects of inhibiting an exaggerated stretch reflex and elongating soft tissues prevents adaptive shortening and promotes a normal pattern of movement.

WHERE?

Below knee casts up to and including the toes.

WHY?

To create a heel strike and avoid possible surgery for tendon lengthening.

HOW?

With care the cast is applied in a series of gradual stretches from plantarflexion to overcorrected dorsiflexion at approximately weekly intervals.

The number of casts required varies greatly depending on the condition, the severity of any spasticity, the degree of contracture etc.

MATERIALS

There are many casting materials now available and the choice may be determined by a number of factors such as cost, availability, ease of application and removal etc. *Delta-Cast is a useful material which is easily removed by Plaster shears and if necesssary can be removed at home by parents using strong scissors.

The children are encouraged to carry on with their normal activities and parents are given specific hip and knee extension exercises to supervise.

Decreased associated spasticity can be a bonus in some patients and good results can be obtained from serial casts of elbows and hands. Ankle Foot orthoses have been found to be helpful after a series of casts if the foot has not retained a good shape or could be used serially to gain a heel toe gait.

A detailed step by step guide to serial splinting can be found in "Serial Splinting in Hemiplegic Cerebral Palsy" published by the Association of Paediatric Chartered Physiotherapists" and can be obtained from: APCP Publications, Physiotherapy Dept. Newham Child Development Centre, 84 West Ham Lane, Stratford, London E15.

* Trademark 1985.

If you would like to try serial casting under supervision contact Margaret Jones by letter at the Physiotherapy Dept., Burnley General Hospital, Burnley, Lancs.

A fuller version of this talk will appear in the November Newsletter.

Letter to the Editor.

At the YORK APCP Conference there was a paper on the Dolman-Delacato system of treatment. I would draw your readers attention to the following literature and research which do not support this approach.

Sparrow and Zigler (1978) found no significant difference between Dolman-Delacato and a control group which was untreated but received individual attention from foster grandparents. This was researched at Yale University over a long term.

Zigler (1981) in "A Plea to End the Use of Patterning Treatment for Retarded children" writes about the emotional burden of failing to see results from a programme whose success was presented to parents as strongly dependent on their perseverence.

Cohen, Birch and Taft (1970) after objective evaluation of the theory of the patterning system, concluded that the data thus far advanced was insufficient to justify affirmative conclusions. The conclude that the theory is inconsistent with accepted views of neurological development. Robbins and Glass (1959) reviewing research on Dolman Delacato found the theory has internal inconsistencies, lack of supporting evidence and direct contraindications by existing knowledge.

Sincerely Sophie Levitt. M.C.S.P. Paediatric Physiotherapist.

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PAEDIATRICS 62.137

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PAEDIATRICS 45.302

Robbins M. P. & Glass G. V. (1959) The Dolam Delacato rationale; A Critical Analysis.
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COMPUTERS AND TECHNOLOGY

Mrs. J. Gordon. Computing Advisor, Newcastle Polytechnic

Terminology

The words "program" and "software" refer to a "set of instructions which a computer can follow.

Initial Involvement

A colleague who was an Adult Basic Education Organiser asked for my advice about the teaching of arithmetic to a student who had cerebral palsy. His

speech was slurred but could be understood; he was unable to write but could type, rather slowly and with many mistakes.

At this time I taught a basic arithmetic class for adults and decided that I would take up the challenge of including this student in my class and that I would teach him to use my newly acquired microcomputer to enable him to do the necessary classwork.

All went well, and the use of the computer spread to his English lessons, his increasing confidence lead to his planning to join the college full time. Here we met problems; those teaching on the full time course put up all sorts of barriers. The course was on the top floor of an annex, no lifts. The course included much project work; the student would not be able to write up project work as much of this work would need to be done at home.

The first obstacle was solved by the student; off to see the physiotherapist, back to a walking frame (out of practice but determined). He also practised hauling himself upstairs.

The second obstacle was solved with the help of money - we purchased a computer with a word processing program for use at home.

This boy came on in leaps and bounds. He started to take advice from physiotherapist and occupational therapist. In fact his growing confidence allowed him to mature. He is now living in his own flat with the minimum of support and spends three days a week helping, with the aid of a computer, with the administration of the day centre he once attended as a patient.

Lonsdale School - a plea for help.

Soon after the microcomputers began to appear in schools I received a plea for help from a teacher in a school for physically handicapped children. A master had moved schools and left her with a pair of switches, a computer and no knowledge of how to use them with her group of ten year olds.

After an initial visit I produced a game of CONNECT 4 which could be controlled via several pairs of switches or via the keyboard. I took this game up for the children to try out. Priority was given to two children who were unable to use the computer from the keyboard. Both had cerebral palsy and were severely handicapped.

We explained how to play the game and left them to it. As we watched Kara and David play, Kara suddenly discovered that she could cheat and started to pinch David's turns. Her eyes lit up and her enjoyment of this cheating was very obvious. I apologised to the teacher for my 'bad program' but she told me that it was the best thing that had happened, as for the first time Kara was fully in control and could behave just as other children.

Joint help - college students/school staff

Following this successful visit we decided to help each other. My students would be encouraged to visit the school, assess the children's needs, write 'useful programs' for their examination project work which meant being allowed to test them out with the children. The college would allow a couple of teachers to join the classes in computer programming that I ran for college staff.

One of the teachers early attempts was written for a three and a half year old who spent most of his day on the floor, had severe mobility problems, but showed an interest in music. We used a concept keyboard, ie. a flat grid of squares which acts as a second keyboard and could be placed on the floor. We planned two areas which, each time the child moved between the two areas would make the computer play a nursery rhyme. The Physiotherapist was consulted so that the movement required between the two areas was suitable for the child and so that as his muscle control improved the positioning of the areas could be altered.

The TURTLE

Over the next few months I worked closely with the teacher and her group of ten year olds. I suggested that we try out the LOGO concept using a floor turtle. The LOGO concept includes giving a child mathematical experience by relating the movement of a floor turtle, which is under the child's control, to body movements; FORWARD, BACKWARD, TURN LEFT TURN RIGHT. The teacher was a little uncertain but followed my suggestion and borrowed a floor turtle - I then gave an introductory session for both children and teacher.

The children were delighted to be able to control the turtle making it move and draw on the floor. The only problem was that the turtle was controlled via the keyboard, hence excluding a couple of children. Another student project was born and over the next few months a switch controlled program was written and with much fun, tested by Kara. Following this successful project the school approached the Hertfordshire County Computer Unit to write a version of DART, the program which controlled the turtle, which would accept switch input. A useful utility, called SWITCH, which allows switch control for a lot of the Hertfordshire programs was written by the Unit and dedicated to Kara.

Creative Play

We soon found that any program which allowed creative play was both popular and educationally helpful. I had previously written a simple program which displayed three shapes; the outline of a house, a small square and a small rectangle, and then allowed you to use the shapes to design a house. Originally I had written it for adult students who needed to have the fear of computers dispelled. I tried this out when my six year old cousin, another child with cerebral palsy, came to stay and he was absolutely enthralled. Although he could draw he did not have enough muscle control to allow him to draw straight lines and, being a very precise young man, he revelled in his new ability to design houses.

Attaching toys to the computer.

My next project was to demonstrate to the teacher that it was possible to attach LEGO models (and any other battery operated toys) to the computer, thus extending the play possibilities for many of the children. Here we could use an 'interface box' which allowed us to remove the standard switches from the toys, and attach the toys and models through the interface box to the computer and attach any suitable switches either directly to the computer or through the interface box. We could then write easy to operate software which could be used for play - and also - provide the children with a computer

language so that they could teach the computer how to control the toys and models. We started off with very simple LEGO models which included a single motor. One of the early models was a windmill and before long, much to the surprise of the teachers, the limited language set of some pupils was extended to include 'clockwise' and 'anticlockwise'.

As the project got underway, a government initiative, Micro-Electronics in Education Program (MEP), provided extra help in the form of a seconded teacher plus additional equipment. The class teacher took over and I was delighted to hear about the various class projects which included the building of a model village with a house that was to be on fire (a flashing red light), a fire siren, fire engine, a man that waved his arms to attract attention etc. and a story that everyone, even the most disabled, had helped to develop, and could be illustrated by activating the instructions taught to the computer by the children.

Major points when planning to use a computer

Do NOT allow the computer to isolate a child.

A program which can be operated by a single switch/pair of switches should allow - a second switch/pair of switches to be attached - and either keyboard keys to act as though they are switches or full use of the keyboard.

Encourage children to use the keyboard if at all possible

Most switch operated programs can also be operated from the keyboard. Even limited keyboard use is far quicker than switch operated keyboard simulations. Very important when a child gets to the writing stage. A keyboard cover can often solve keyboard operation problems.

Try to keep all features of a normal game

Remember a normal game can be finished in anger, allow the same facility in a computer version of the game. In games like CONNECT 4 the opposition may not notice that they have won. Don't spoil if for players by letting the computer tell them who has won.

Encourage programs which allow the children to be creative

Drawing packages

simple selections from a menu

to replace Felt shapes and BUTTERFLY SHAPES (sticky paper patterns) e.g. the HOUSE program.

full drawing packages:- some require full use of keyboard but others are available for switch operation.

Music creation - Word Processors

There are many available ranging from the full professional standard ones with spell checkers to simple ones with word lists.

The first switch operated word processor I saw was designed for infant school use, but was ideal for older children who had to use switches. One advantage being that it could be easily operated from either two switches or two keyboard keys.

Encourage programs which make the children think.

LOGO (Turtle graphics) - mathematical thinking ref PAPERTS "MINDSTORMS".

CONTROL-IT - the control of modelsvia an interface box.

Encourage GROUP work - especially amongst children with differing handicaps.

Don't forget that families (parents as well as brothers and sisters) can join in.

Recent software.

A program for the BBC microcomputer from Newcastle University which allows use of full computer facilities from a single switch and keeps the keyboard fully operational. It also supplies wordlists for both wordprocessing and the writing of computer programs.

Switching device connections from Liverpool University which act as an alternative keyboard with normal keyboard still active. Any number of switches can be attached to a wide range of computers.

Local SELF HELP groups.

Make full use of existing groups or even start a new one.

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MINDSTORMS Children, Computers and Powerful Ideas by Seymour Papert. ISBN 0-71080-472-5.

CONTROL-IT (Interface Box only)
DELTRONICS, 91 Heal-y-Parc, Cefneithin, Llenlli, Dyfed SA 14 7DL.

CONTROL-IT (A complete kit - interface box and software)
RESOURCE Exeter Rd. off Coventry Grove, Doncaster DN2 4PY. Notes: Special educational prices available for software. I would advise the purchase of the interface box which includes a power supply.

Hertfordshire Country Computer Unit, for DART, SWITCH plus many other programs:
Advisory Unit for Computer Based Education.
Endymion Road, Hatfield, Hertfordshire AL10 8AU.

Newcastle University's Handiron package:
Gordon Flannigan, Dept. of Medical Physics, University of Newcastle-on-Tyne, The Medical School, Framlington Place, Newcastle-on-Tyne NE2 4HH.

Liverpool University's switching system - The UNIVERSAL Emulator.
Dr. J. R. Gibson, Ashton Brown Consultants Ltd., PO Box 147, Liverpool L69 3BX.

Local groups - suggested first points of contact.
A Communication Aid Centre.
Educational help from the local SEMERC. (Special Education Micro Electronics Resource Centre.)

CHILD ABUSE - A Historic Perspective

Ian McKinley - Senior Lecturer in Community Child Health, University of Manchester.

There may be less abuse of children in our present culture than an any time in history. Our society is more alert to the problem than ever before, however, and increasing numbers of children are being called to public attention. There is greater willingness to see the child's interests as primary and increasing powers are being made available to local authorities and health services to protect children.

For as long as written records have existed there is evidence that children have been killed sacrificially as evidence of religious obedience. Abraham was willing to kill Isaac to demonstrate his faith and reported Jehovah's approval. Druids and others in these islands practiced human sacrifice, especially of girls, to ensure the return of Spring and good harvests. Through the Middle Ages till the 17th century many children and adults died of starvation. Europe and North America condoned gross abuse of children involved in the slave trade until 150 years ago. In Victorian towns, childen were employed in mill, mines and as chimney sweeps (c.f. Charles Kingsley's "The Water Babies" and Charles Dickens novels, e.g. Oliver Twist and Great Expectations"). They could be kept in harsh Institutions such as orphanages and workhouses, or as homeless vagrants.

Medical interest in the issue was scanty until the publications of Caffey (1946 and 1957). He was a radiologist and reported bony injuries, previously thought to be mysterious bone diseases. However, Toulemouche (1853) reported the fatal whipping of a 4 year old girl in Rennes, Brittany, and Tardieu, Professor of legal medicine in Paris, published an article)37 pages and very detailed) in 1860 on "Medico-legal studies on brutality and ill treatment upon infants". Among his 32 cases were instances of brutality, torture, including burns, starvation, deprivation, incarceration and hypothermia. The majority were victims of parental abuse, but some were abused by employers or schoolteachers. He described the ferocity of mothers and the feebleness of fathers, encouraged doctors to inform the police, and drew attention to the pale sad faces of the children ("frozen watchfulness" as we now call it). He described diverse injuries of varying ages - all too familiar today. Attribution of injuries to accidents was common in his experience but parents also invoked their rights to punish. he also refers to illness and nutritional deficiences (e.g. rickets) brought on by neglect.

Samuel West (1888) described the bony lesions (later reported by Caffey, with the benefit of X-rays) but excluded trauma from his differential diagnosis, preferring to consider rickets, scurvy and syphilia. In one of the families he describes, four out of the five children had shown such lesions. When he presented his paper to a scientific meeting the diagnosis of rickets and scurvy was criticised though prenatal rickets was suggested as well as trauma. It is likely that many of his cases were abused.

Ingraham (1939) suggested that infant subdural haemorrages were traumatic

in origin whereas previously they had been regarded as idiopathic mysteries. However, it was not until the publications of Silverman (1953) Kempe (1978) and others, that paediatricians began to recognise child abuse.

Corporal punishment in schools has been acceptable until very recent years. It is only recently that such punishment by parents (e.g. using a leather strap) has come to be seen as unacceptable. In rejecting such practices we must acknowledge that children can be very exasperating and disobedient, and that humane methods of discipline are necessary at times. Parents who, as children experienced physical punishment or prolonged harsh chastisement may lack models of effective control, and need help in the management of their children.

There are many parents, lacking in the experience of warm upbringing living in cramped or impoverished conditions, confronted by difficult children or subject to alcohol/drug abuse, debt, marital discord or extreme religious or disciplinary persuasion who find it very difficult to maintain self control and to see the childs needs in perspective. Our services need to act in the interests of children first but to be sensitive enough to anticipate when families are at risk and to help them find ways of coping before abuse or neglect require alternative patterns of care which are not always satisfactory.

Sexual abuse is not a new phenomenon though perception of the abuse is recent. It occurs in disorganised families and also in closed families, sometimes highly religious. Though girls are more commonly abused than boys, the latter should not be ignored. 40% of rapists have been sexually abused as children. As well as responding to obvious physical signs of abuse, there is need to consider sexual abuse as a factor in self-poisoning, running away from home, hysteria and physical symptoms such as abdominal pain and headaches. The child victim can be in an invidious predicament - first absued then rejected and virtually orphaned after exposure to the problem. As with all forms of child abuse we need to be sensitive to the possibility that our identification of the problem, does not make life more difficult for the child.

Medical care for children has been transformed since the early 19th century when there were no children's hospitals, and relatively few children were admitted to adult wards. Those admitted were subject to cross infection and emotional deprivation. However, many families could not afford medical care at home. The major improvements in infant and child mortality came from improved public water supply and sewage disposal, knowledge of the methods of transmitting infection, and in this century, immunisation and free access to medical and dental care for children since 1948. Penicillin was discovered in 1928, the year the British Paediatric Association was founded. Certainly antibiotics, safer anaesthesia, plastics and intravenous fluid and nasogastric feeds, prevention of rhesus iso-immunisation and other advances have played their part. Nutritional improvements have made children much less susceptible to calamitious effects of infection (early this century 10% of children with measles died). Death in childhood was accepted as commonplace. Now it is exceptional. This has highlighted child abuse and accidents as major areas for future prevention.

In Iceland 30% of total infant deaths were from tetanus between 1827 and 1937. The Hebridean islands suffered devastating losses of neonates from this

condition, contributing to depopulation. Of 161 infants born on St. Kilda from 1830-1889 for whom records can be traced, tetanus accounted for most of the 88 neonatal deaths. Males were especially susceptible, but the overall neonatal mortality rate was 546.6/1000 (now 5/3). Though all the children in the decade 1920-1929 survived they only numbered seven, and the island was abandoned in 1930 with too few able bodied men to see the community through hard times. The condition was ascribed to smoky conditions in the cottages, dampness, cow dung on the floor, obstetric trauma, inter breeding, lack of hygiene, mental disturbance of the mother and inappropriate medication for the infant. In fact the disease came from clostridial spores in the communal rag with which the umbilical stump was dressed after birth. This was annointed ceremonially with fulmar oil stored in the dried stomach of a gannet by the untrained midwife. In 1890 the minister, Rev. Angus Fiddes, began to seek specialist advise from a nurse, then the professor of obstetrics and gynaecology, Professor Turner. He began to supervise births personally applying clean gauze and iodoform antiseptic to the umbilical stump. Tetanus was abolished and the neonatal death rate fell by 75%. Abuse can occur through ignorance and lack of expertise.

The effect of social policy is more complex. In 1930 in Salford 1 in 5 live born illegitimate children failed to reach their first birthday. Though 1122 of 3379 births in 1985 (one in three) was illegitimate, total deaths in the first year of life numbered 40 (11.8/1000). However, social factors account for this figure being higher than the national rate 9.4/1000. The last report of the Health Education Council (1987) was entitled "The Health Divide. Inequalities in Health in the 1980's, and follows "Inequalities in Health" (the Black Report 1980). Both demonstrate that poverty is linked to ill health in children. Is this child abuse by the state?

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Further Reading :

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Based on an address to the A.P.C.P. Annual Conference, Canterbury 1986

VISION - ITS EFFECT ON MOTOR DEVELOPMENT

Mrs. W. Harrison

Part of my work within the Child Development Centre is to screen children's vision for paediatricians and therapists, to assess how their clarity of vision is developing, their use of two eyes together which develops after clarity of vision develops, their visual fields and the actual use the child makes of their vision - functional vision.

How do these things come into motor development? At a recent opthalmic meeting, an opthalmologist stated that 80% of a child's learning and development is through vision or visual input. If that is so then deprivation of visual input or in fact hearing input has a very big effect on the child's development.

Sensory deprivation gets more attentions these days than was the case when we started in the C.D.C. fourteen years ago. We have not only learned from our own clinical experience but have been grateful for the work of people like Sophie Levitt and Ann Skiander in the physio field and others in education and psychiatry. These latter have dealt mainly with school age children but we find ourselves dealing with the pre-school child.

I will briefly go through the "norms" of visual development so we can then see how that relates to a child with other handicaps and look at the difficulties they encounter.

Clarity of vision develops from birth to eight years of age. The main area of development is from 0-5 years. Recent research has shown that if cells in the occipital cortex are not stimulated by light within the first five years of life, they will atrophy and not function properly so we must be sure that these children are given the opportunity to achieve clarity of vision.

There are various tests used for clarity of vision in the clinic situation, both distance vision and near vision. The test result most commonly seen in notes, that of two numbers one on top of the other, refers to distance vision. The top figure represents the distance the test was carried out at and the bottom one represents the line on the test chart that the child could see. There are developments coming in trying to assess vision in a better way but this is still the national standard for registration purposes. People able to see the top line at a distance of one metre are still registerable as blind.

The development of good vision requires a clear image to form on the forvia, which is the small point at the back of the eye that we see best with, and the visual pathway from the occipital cortex to the retina to be intact. The pathways involved are complex so where a child has brain damage, there is great potential for visual problems.

For an object to be seen and located in space, there is a very complicated procedure. First there must be a clear retinal image. Each cell in the retina of the eye corresponds to a cell in the other eye and that helps us to locate objects in space. The ability to join these two images also gives us depth perception. The occular muscles must be working. The centres controlling smooth pursuit type eye movements and those controlling sarccadic movements, the quick type of eye movement, must be intact. These are located in different areas of the brain. There is also then a perceptual element, the ability to interpret the images received, and a motor element in order to respond appropriately to it.

Eye movements. There are nine positions of gaze  . The ninth is straight ahead with the eyes level. Each muscle has one that it works with and one that it works against during eye movements.

If a baby's vision is developing clearly, by the age of about six months there are various reflexes developing which help to control the use of the two eyes together. The most important ones are convergence and the ability to move the eyes out again without getting them stuck in the middle, following - smooth pursuit or tracking, and sarccadic movement the ability to move the eyes quickly from one object to another without moving the head. Many brain damaged children cannot do this nor can they manage smooth pursuit. If the head is held still, the eye movements when following an object become very jerky.

A lot of cerebral palsied children have problems with voluntary eye movements in particular directions. This can mask full visual fields when testing. What may seem to be a visual field problem is in fact a voluntary movement problem. The child will turn their head because they cannot move their eyes.

There are a number of reasons for trying to maintain head postures. The main one is to keep the two eyes working together. A particular head posture sometimes has to be adopted to maintain single vision. If there is a visual field defect, you turn your head into the area you can see.

Nystagmus is an involuntary flickering movement of the eyes, usually horizontally. Occasionally there is a rare vertical nystagmus which is often associated with a head nodding movement. In some cases where nystagmus occurs, the effect is more noticeable when looking to one side while when looking to the other side there is hardly any movement. The child is therefore likely to turn their head to keep their eyes in the position of least movement.

When the eyelids droop, ptosis, the child will lift their chin to be able to see. So there are several occular reasons for adopting particular head postures and these are just a few of them.

The aetiology of visual problems falls into several categories. There are those conditions which prevent a clear image forming on the retina. Among these is cataract. Babies born with cataracts can be operated on within the first week of

life - on the first day in America, and the child can then be given contact lenses. This ensures that a clear retinal image is able to form and that vision can develop, almost up to adult standard in some cases.

Cloudy media within the eye, caused by haemorrhage etc., retinal disease and optic atrophy will all interfere with the formation of a clear retinal image.

Refractive errors can cause quite severe visual problems if not dealt with within the first few years of life.

Problems with motor control of the eyes will affect the development of vision.

There can also be damage to the visual pathways within the brain.

If a child is severely visually impaired, several things then start to go wrong with that child's development.

One of the most important is bonding with parents. The child that cannot see its mothers face does not learn to smile in response to it.

Gross motor problems. Poor body image and awareness is a problem. One little girl was referred at 5 months with vision problems. She was only able to achieve some vision in a quarter of her field with a red light held very close to one eye. The whole of the other side of her body was neglected and she had a claw hand although the physiotherapist did not feel that there was anything basically wrong. Once she was helped to bring her eyes to the middle, to bring two hands together and to cross midline, she started to develop and now seems to be physically all right.

Stiffness of movement is very noticeable in blind children. Many visually handicapped children develop a very wide based gait and maintain it for much longer than usual. They tend to have no trunk rotation and do not develop linking movements between positions. They can be put into positions, sitting on the floor, standing at something and will maintain them quite happily but they are unable to move out of that position into another one. One little boy with retinal problems was able to start standing at the furniture but could not get from standing to sitting. He got down by making sure his mother was around to catch him and then simply falling backwards completely straight like a board.

A physiotherapist's involvement is required from very early on.

Fine motor development is also delayed and that is well documented by a number of people working with visually impaired children.

Language development is affected. If you cannot see your parents and what they are doing, you are not going to develop an understanding of language concepts. Blind children are often silent children.

All these effects are seen in children with no other handicaps apart from their visual problems. If all that is overlayed onto the child with other problems, then the problems are enormous.

There are several things which will affect the use of vision in a child with other handicaps. The first and most important is comfort and position of the child so they can concentrate on what they are looking at. The position and size of what they are being shown is important. Is the sensory level apropriate? A lot of these children need a very high intensity of input ie. disco light brightness

in order to see. Make sure things are at the child's visual level. They often need motivating to use their vision with things that attract their attention. Colourful refractive paper is useful for this.

Other things to consider are the child's visual fields, the functional age of the child and things like medication which can often affect the ability to use vision, particularly anti convulsant drugs.

Finally, what do we provide as a pattern of care for these children with multiple handicaps?

We try to get together to give the parents and the child the best counselling and support from the earliest possible days. Sometimes, the news that a child cannot see is very brutally broken in eye clinics. Some care and counselling must be provided for upset parents for we have found that when parents are told that their child is blind, it can be even more devastating than being told their child has a physical or mental handicap. They need a great deal of support over a number of years just as the parents of children with other disablements do.

The paediatric social workers have proved very helpful in their councelling of parents.

We try to provide physiotherapy from the earliest days whether or not the child has additional handicaps. The gross and fine motor problems have already been mentioned. Other things which we might imagine develop automatically do not develop. These children cannot see where they are in space and do not develop such basic things as righting reactions, protective extension, parachute reactions. 50% of children with visual problems do have other problems and will be coming to physiotherapy departments anyway.

Speech therapy is provided from an early age to help the child develop an understanding of language concepts.

The pre school teacher and the advisory teacher for visually handicapped give advice on play and toys and we welcome advice from anybody who has a contribution to make.

In order to avoid confusion and conflicting advice, all this is brought together in a vision group. We are all there to work together for the benefit of the child and the parents are the most important members of the team.

We are all learning together and are still learning but our main aim is to help each child achieve the best of its potential as soon as possible.

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Fourteenth Annual Conference APCP 1987

Chairmans Annual Report

As we approach the finish of our fourteenth Annual Conference, we can look back on the last twelve months since the Conference in Canterbury and take stock.

We seem to have had another busy and action packed year. There have been four committee meetings - the agenda seems to grow longer - there is so much to discuss and organise as our association grows, not only in this country but

spreads overseas as well. We currently have 842 paid-up members and 151 new members. Those who have not yet paid, please do so!

During 1972, the first year of the newly formed Association of Paediatric Physiotherapists, 800 copies of the Newsletter were printed. In the year since Canterbury 4,500 Newsletters were printed and distributed to physiotherapists and organisations across the world, who seem to feel it is their link not only with this country but to what is good practice in paediatrics. This year the number looks to be even higher and we hope to continue to reflect good practice and up to date topics.

A meeting of editors of specific interest groups was held in the Autumn at Bedford Row and there was a useful exchange of information, plus constructive criticism and suggestions from invited speakers. It was gratifying to discover that our Newsletter was probably one of the cheapest produced considering its circulation and content. However, this can only continue to be so with help of members to give us ideas and suggestions of what they would like to read. February 1988 the content will be wholly made up from your contributions and ideas on any aspects of paediatrics - at the moment it looks as though that will be the thinnest edition ever printed, but before long we hope everyone will be inspired to make it a BUMPER edition. Please start to think about putting pen to paper and send your ideas, criticisms or pearls of wisdom to the editor. Finally Jeanne Lamond has found great value and help in the word processor and printer, which have cut down some of the work involved in putting the Newsletter together, and it has helped with the regular flow or correspondence dropping daily through her letterbox. My thanks to Jeanne for all the hours of work and her support to the committee as Editor.

Elma Bells work as PRO, she tells me, is not really work at all, since her relations with members of APCP are so pleasant. It is so important to present ourselves and our work in a positive and courageous way, without being bombastic. There is a strong tendency for physiotherapists to undersell themselves, but on the other hand, it is equally important to be self critical and to advance our knowledge in order to improve our care of the children who we treat, and their parents. Many times we feel that there is nothing new under the sun, but all over the free world we are thinking along the same lines, our aim is to pierce the Iron Curtain, and to make contact with our colleagues in, for example the Soviet Union.

Paediatric physiotherapists are we think, a special breed. We must move forward in spite of being mis-represented or mis-judged to uphold what we believe is important in the care of our children. We all need to participate, and therefore we welcome suggestions and responses from all of you. It is not a question of the committee and the rest — this structure only provides a mechanism of communications and guidance. Our thanks to Elma for her valuable contribution to the committee and particularly for her splendid notice board which she takes around the country, to represent our association.

During the last year, there was a further 'Introduction to Paediatric Physiotherapy' course held at the Wolverhampton School of Physiotherapy. Hopefully there will be more of these courses held in other areas of the country, so keep watching the Journals if you are keen to join the courses.

Mary Clegg and Pam Eckersley have put in long hours of work on the courses, and had to overcome the difficulties of the January blizzards on top of everything else which they do. They have been responsible for a new edition of the booklet about the 1981 Education act which is now produced by our parent body — the CSP. Some copies have been available for purchase at this conference but members who may still wish to purchase a copy should contact CSP. Our grateful thanks to Pam and Mary for all their effort. It is a tribute to them as co-authors that CSP have shown such interest in the publication.

Gill Riley, a committee member, has completed her survey on aids and equipment — the questionnaires were sent out last Spring, and the answers have now been collated. We hope to publish the findings in the Autumn when the report should be available to members. It makes interesting reading which it is hoped will be both helpful and instructive.

Finally, I would like to extend my thanks to Jill Brownson our treasurer, for keeping her steady hand on our finances, and Sandra Holt for her support and guidance in my first year of office.

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Treasurers Report

Mrs Brownson referred the members to the balance sheet which had been distributed to all present. The balance sheet describes a consolidated account derived from the regional accounts, publications account and the national account.

Income

Total income was £6013 more than in 1985, represented partly by the receipt of 1987 subscriptions, and substantiallyby the increase in course revenue.

Expenditure

Expenses involved in organising courses were similarly increased. Committee expenses, which includes regional and national committees, were reduced. The surplus for the year was £2,948. When the figure is added to the balance brought forward from the previous year it makes a total asset of £21,803.

In 1986 four regional accounts made a contribution to the National Account. They were Trent, Scotland, London, Birmingham. The 1986 Conference hosted by the S.E. Region made a profit of £1,297.

Mrs Brownson said that our Association should look towards a constitutional aim of Post Registration Education, and suggested that our assets should be directed towards this. Consideration is to be given towards Bursaries being made available for continuing education.

It is considered that our membership fee should remain at £7 for the present, but it will probably need to be increased in the future.

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SUMMARY POST REGISTRATION EDUCATION REPORT

Association of Paediatric Chartered Physiotherapists 1986-1987
Mrs. P. M. Eckersley. Advisor Post Registration Education.

The past twelve months have been eventful ones. With developments in the past consolidated and those for the future becoming clearer. It has also been a year when physiotherapists from many specialisms have come together to discuss those aspects of post-registration education which are common to us all.

In June, 1986 a Clinical Interest Groups Conference was organised by the Chartered Society of Physiotherapy to discuss the role of the various groups and the role of the C.S.P. as co-ordinator and facilitator. Joint aims and objectives were discussed and it was helpful to realise that many problems we encounter are shared across the clinical interest groups.

In November, 1986 Mary Clegg and Pamela Eckersley attended the three day Chartered Society of Physiotherapy workshop on Course Evaluation. This provided an opportunity to discover ways of analysing course aims and objectives, course outcomes and course effectiveness. This is important - as well as exciting and challenging - as only by evaluating courses can we hope to establish a system where the managers question - "Is this a course we should spend money on - what will be gained for patient care?" - can be answered. This Specific Interest Group has taken up the challenge with enthusiasm.

Students on the "Introduction to Paediatric Physiotherapy" course held in the West Midlands took their final exams in March 17th and eleven physiotherapists successfully completed the course. Congratulations to all of them, the tutors and to Mary Clegg who was Course Tutor/Organiser, (N.B. Names of students read out at National A.G.M. in York).

Planning for the development of future courses continues. The basic format for the Introductory course is established and we are now moving on to develop a joint Occupational Therapy/Physiotherapy Introductory Course. We are also considering the development of Intermediate and Advanced paediatric modules which would be appropriate for physiotherapists experienced in paediatrics.

The 1981 Education Act remains at the forefront of discussion and the revised A.P.C.P./C.S.P. booklet is now available. Members attention is drawn to the comments on the Act by the N.C.S.E. In November, 1986 Pamela Eckersley attended a joint education, social service, health seminar on the Education Act to discuss the D.E.S. funded projects on implementation. Two aspects of the many discussed were - available provision and staffing; and a common professional perspective.

The Post Registration Education Committee continues to receive letters about clinical experience in paediatrics, assistance with research projects, and requests for a revised book list. Letters have been received from physiotherapists working abroad.

Perhaps the most important and exciting aspect of the last year has been the fact that it has been a year of coming together and working together. All clinical groups of physiotherapists have come together to discuss post registration education; colleagues in education and health are meeting to discuss the 1981

Education Act; and we all come together annually to discuss paediatric physiotherapy. The progress of our association depends on this coming together to continue our education.

Thanks are due to many people - the committee of the A.P.C.P.; staff at the C.S.P., particularly Penelope Robinson, Chris Bithell and Angie Titchen. Also Keith Denham at the Wolverhampton School of Physiotherapy.

Thanks in particular to Ann Burkitt who leaves her post as Director of Education (C.S.P.) at the end of April. She has brought a constant sense of motivation and committment to the physiotherapy profession; and an enthusiasm for the speciality of paediatrics which will be very difficult to replace.

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Letter to the Editor

Physiotherapists may be interested to know about the following:-

The Massage Pillow - marketed by Orbit Enterprises Ltd., PO BA 28 Northwood, Middlesex HA6 3RY. Price £17.95

Bought originally for use as a stimulator for visually handicapped babies, it was found to give them a very pleasant sensation. Then it was tried on a chesty child suffering from physical child abuse, and found to be very effective as an aid to loosen secretions, whereas with normal percussion the child had cried continuously, with the cushion under his chest, he actually laughed. The sputum results were comparable.

The cushion has since been used twice on other at risk children and it has been found beneficial and enjoyable in each instance.

The cushion measures about 12" x 12" so is useful for most childrens sized chests.

Mrs. C. Burnett MCSP SRP.

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Belated congratulations to Paediatric Physiotherapists in Dublin on a well run and stimulating 10th Conference. We hear that a good time was had by all!

We welcome a letter from the Associacio Portuguesa de Fisioterpeutas who wish to make contact with APCP and hope to exchange Newsletters.

Congratulations to Mrs. Pam Eckersley our Post Reg Education representative who has just been appointed to the post of Director of Special Education Resource Information Service for Manchester.

FORTHCOMING COURSES

August 5-6 **Are You Sitting Comfortably?**
(An exhibition on chairs for those with special needs).
Details : Mrs Sue Bellamy, Manager, Disabled Living Centre, Unit 6, Silver Court Trading Estate, Silver St., Huddersfield. Tel. 0484 518809 Price on application.

August 22-29 **First National United Kingdom Convention for the Deaf Blind**
"Hand in Hand to Happiness"
Froebel Institute College, London SW15
Details : Ann Barnett, Secretary, National Deaf-Blind Helpers League, 18 Rainbow Court, Paston Ridings, Peterborough PE4 6UP Tel. 0773 - 73511 Price £150.

September 9 **Duchenne Muscular Dystrophy**
Details : The Admin. Secretary, Rehabilitation Demonstration Centre, Mary Marlborough Lodge, Nuffield Orthopaedic Centre, Headington, Oxford OX3 7LD. Tel. 0865 - 64811 ext. 353. Price £15

September 15 **The Pre-School Child with a Handicap**
Details : Mrs Vanessa Manby, Sr. Physiotherapist, William Merritt Disabled Living Centre, St. Mary's Hospital, Leeds 12 Tel. Leeds 793140 Closing date September 7. Price £12

September 30 **Implications of Visual Handicap in an Educational Situation**
Exhall Grange School, Coventry.
Details : Centre Administrator, RNIB Education Courses 13 Warwick New Road, Leamingston Spa, CV32 5JB. Tel. 0926 25921.

October 15 **The Development of Mobility and Language in Young Children**
Putteridge Bury, Luton. Details : Centre Administator, RNIB Education Courses, 13 Warwick New Road, Leamington Spa. Tel. 0926 25921

October 17 **The Handicapped Child in Mainstream Education**
Doncaster Royal Infirmary
Applications with fee to : Mrs S. K. Tallents, Paediatric Physiotherapist, Physiotherapy Dept. Doncaster Royal Infirmary, Armthorpe Road, Doncaster.
Fee £6 members £8 non-members. Cheques payable to : APCP Trent Region. Closing Date September 25th 1987
(On this one day course we shall be asking the question - Has Integration worked? Is it working from the childs point of view? Participating speakers include : An advisor for special education, a specialist in child health, a teacher and therapist. Ample time allowed for discussion and debate).

November 30 Dec. 1—2 **Kings Fund Forum to consider pre-natal screening for foetal Abnormality**
Regents College, Inner Circle, Regents Park, London NW1
Details : Dr Jackie Spilby, Kings Fund Centre, 126 Albert St., London NW1 7NF. Tel. 01 267 6111.

SNIPPETS

From Disability Now, April, 1987

An important breakthrough in research into serious congenital birth defects such as spina bifida has paved the way for reducing the number of affected births in future.

Women who are genetically at risk of having spina bifida chidren could be identified and environmental factors, such as diet, altered to reduce that risk.

Scientists at St. Mary's medical hospital in London, led by Professor Robert Williamson, discovered the location of a gene that causes one mid-line defect, a rare form of cleft palate.

Once the defective genes are located, the environmental factors that interact with them to produce the conditions can be traced. Pregnant women known to be at risk can be advised to avoid certain foods, chemicals or drugs.

However, 95 per cent of children with spina bifida are born to women who do not know they are genetically at risk. By developing the technique used by Professor Williamson to pin-point defective genes, all pregnant women could be screened to identify those predisposed to bear children with spina bifida.

A New Reading System

A new reading system which brings together visually impaired children with their sighted friends or brothers and sisters has been developed by staff at Linden Lodge, a residential school for visually disabled children in Wandsworth,London. Clear plastic sheets carrying the braille are inserted into the children's story books so that sighted and non-sighted children can read them together. Many popular children's books will now be sent from the publishers to the RNIB for braille transcription and the plastic leaves will be bound in.

Down's Syndrome breakthrough

Scientists have made an important step forward in finding the causes of Alzheimer's disease and premature ageing in people with Down's Synodrome.

A group of West German and Australian scientists have for the first time identified a protein which they believe breaks down to form abnormal deposits in the brain. These deposits are found in the brain's of people with Alzheimer's disease, which causes senile dementia, and in the brains of people with Down's Syndrome over the age of 40, who tend to age prematurely and die young.

Dr Brian Stratford an expert on Down's Syndrome at Nottingham University, said: 'If the research stands up this is a tremendously important break through'.

'It would be a big step towards stopping what appears to be a deterioration in the social functioning of Down's Syndrome people as they get older'.

Professor Benno Moller-Hill of Cologne University said that one of his team made the breakthrough when she identified the gene responsible for the protein. This will enable scientists to track down cells that make that protein and find out what makes it disintegrate. The discovery may also eventually enable scientists to screen for people at risk of developing Alzheimer's disease.

DO YOU KNOW THAT . . .?

In a report on Child Health services, the National Children's Bureau says that professional development in speech, occupational and physiotherapy services has been hampered by lack of resources and lack of evidence on the effectiveness of some of the treatments. It recommends that child development teams should be set up in all health districts by 1990.

Medical Aid for Palestinians says thousands of children have been maimed and injured during the last twelve years of war in the Lebanon and is trying to raise funds to provide material for artificial limbs and other aids.

Parent to Parent Information on Adoption Services (PPIAS) produced a leaflet on adopting aboard and can put prospective intercountry adopters in touch with families who have done so successfully. PPIAS is based at Lower Boddington, Daventry, Northamptonshire. NN11 6YB. Tel. 0327 60295

A report by the Inner London Education authority claims that children in the Capital suffer greater deprivation that in any other part of Britain, almost half of its 290,000 pupils receive free school meals, and in Tower Hamlets 42% have unemployed parents.

Throughout the world more than 150 children are born every minute, with 9 out of 10 being born in countries least able to support them. It is thought that by the millenium the population of Africa will be nearly three times that of Europe and with ever increasing food shortage.

According to a report in Science there may be a rational basis to the fears that electric blankets can cause deformities in unburn children. A paper shows how cells are affected by tiny electric fields, which may regulate growth and development, and given the massive fields generated by an electric blanket, it is possible that the health of a nearby foetus may be affected if the mother is sleeping on the blanket.

It has been discovered that chromosomes are arranging inpatterns rather that at random, which is an important step forward for genetice engineering.

The new Chief Executive of Childline is Valerie Howarth, former Social Services Director of Brent.

There is now an organisation concerned with the rights of grandparents in cases of divorce :- Families need Fathers, 39 Clonmore Ave., Orpington, Kent.

The National Children's Bureau has opened a new training and resource Unit to help combat sexual abuse.

There is a call from the DHSS asking authorities to ensure that no child under 18 should have the responsibilities of acting as carers, and carrying out duties normally expected of adults.

EQUIPMENT

Soft Loo Seats

In use at most spinal injury units. Unconditionally guaranteed hinges. 1" cushioning and extra broad seat, robust and hygienic, easy to install. 10 beautiful styles and colours and complete with lid and fittings. Free colour brochure from : Throne Designs Limited, Unit 4TW, The Avenue, Cirencester, GL7 1EE. Tel: (0793) 771321.

The 'Handisocket'

Designed to raise a wall socket to an accessible height without using an electrician. 13 amp capacity. Available from Homecraft of London, SW17 7SF.

Weatherproofs for Wheelchair Users

In Waterproof nylon, blue, brown or navy. Capes £20.55 - Cover Bags £15.75. In warm quilting green, navy or ash. Capes £22.00. Cover Bags £18.40. p & p £1.50 per order. Available from Three Jay & Co. (DN), 9 The Precinct, Broxbourne, Herts. Tel : (0992) 442974.

Maclaren Transit Chair

This product is made in two versions :

The Maclaren Adult pushchair, which will be available through the DHSS from the early part of this year.

The Maclaren Transit Chair, which will be available from early Summer, 1987 from Andrews Maclaren. This is made to the same rigorous specification but with some chassis and seat differences and will retail at under £200.

The Maclaren Adult pushchair weighs in at only 32 lbs. A great deal of research and development has gone into the Maclaren Adult Pushchair to make it very convenient and completely safe in the widest variety of everyday situations.

- Wheels with hard-wearing yet non-marking cushion tyres and smooth-running nylon bearings for easy pushing.
- Removable solid footrest quickly adjusts to five positions.
- Front wheels swivel for exceptional manoeuverability.
- Shock absorbing independent suspension all round.
- Padded, fixed position seating.
- Braking system locks on securely yet releasing easily on all 4 rear wheels.
- Heavy duty pvc seat covers for easy cleaning.

Available from : Andrew Maclaren Limited, Station Works, Long Buckby, Northampton, NN6 7PF. Tel: (0327) 842662.

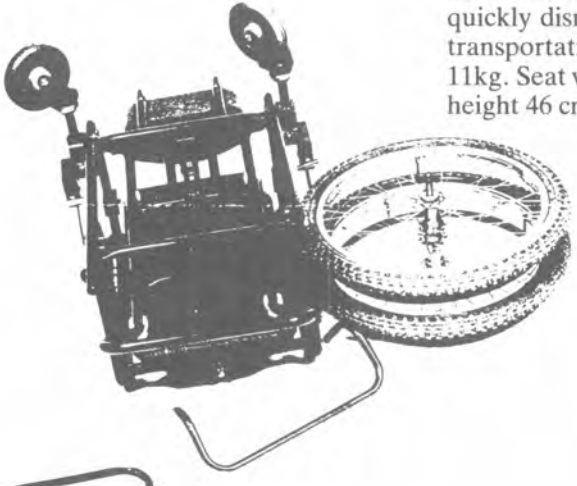
BMX Wheelchair for Children

The BMX Wheelchair is available in three standard sizes in an exciting range of colours.

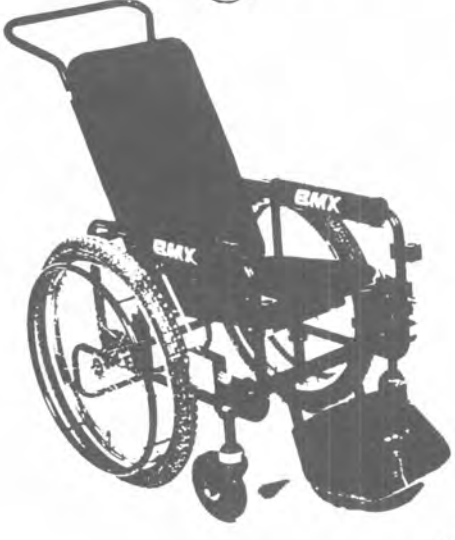
Equipment includes adjustable brakes. Leg rests are adjustable in height and length and the seat and back rest are also adjustable for angle.

The BMX Wheelchair has a very low centre of gravity giving it exceptional stability, there is also a rear safety bar fitted to prevent it from tipping backwards. The drive wheels are mounted with a 'quick-release' system enabling the chair to be simply stowed for transportation.

Price £495.00 (ex. VAT), for further information contact Samson Products, 239 Alder Road, Parkstone, Pool, Dorset, BH12 4AP. Tel: Parkstone (0202) 734171.



The Wheelchair can be easily and quickly dismantled for storage and for transportation. Total weight is approx. 11kg. Seat width 22-26-28 cm. Backrest height 46 cm.



PUBLICATIONS

Introducing counselling skills and techniques (with particular application for the paramedical professions)

Brearley G. Birchley P.
London : Faber & Faber 1986. £2.95.

The Carolina curriculum for handicapped infants and infants at risk.
Johnson-Martin N. et al
Baltimore : Paul H. Brookes 1986. $29.95

Helping children cope with separation and loss.
Claudia Jewett.
Batsford Academic BAAF 1984. £7.95

Pyschotherapy and severely deprived children.
Edited by Mary Boston and Rolene Szur
Routledge & Kegan Paul. £5.95

Directory of Opportunities for School Leavers with disabilities.
—The directory with amendment sheets — available from : Queen Elizabeth's Foundation for the Disabled, Leatherhead, Surrey. KT22 0BN.
£4 inc. p & p. Payment with order.

Floor Boardbook
Floella Benjamin. Beehive Books. £12.95

Crumble the Christmas Day Cat
Catherine Stock. MacDonald. £2.95

Miracles of Courage
Monica Dickens
David & Charles. £9.95 Hardback. £5.95 Paperback.

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"ART OF THE HANDICAPPED CHILD"

The 1987/88 competition - Art of the Handicapped Child - has been launched by Invalid Childrens Aid Nationwide - ICAN - and sponsored for the first time by National Westminster Bank. It is open to all disable children throughout the country both in mainstream and special schools. Entries are invited from individuals and groups - under 12, and 12 and over - under the following general headings :-

landscape, figures/animals/still life, abstract and design.

There will be 1st, 2nd and 3rd prizes for each age group and subject category.

Paintings shortlisted at the preliminary judging in the Autumn will form an exhibition to tour the country, starting in London, in April 1988 and visiting ten major cities. All prizewinners will be invited to attend the London opening, and receive their prizes.

Application forms are available from :
Art of the Handicapped Child, ICAN, Allen Graham House, 198 City Road, London, EC1V 2PH. Tel. 01 608 2462.

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ARTICLES OF INTEREST

Copies of the following articles can be ordered from : Mr M. Saunders, Asst. Librarian, National Demonstration Centre, Pinderfields General Hospital, Wakefield, North Yorks, WF1 4 DG.

Please quote the bulletin, number of the article, and full details of the citation. You will be invoiced at 9p per sheet. Send no money with order, an invoice will be sent with the photocopies.

April 1987

8
Hulme JB et al
Effects of adaptive seating devices on the eating and drinking of children with multiple handicaps.
AM J Occup Ther 1987 Feb; 41(2) : 81-9

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REGIONAL REPORTS

North West **Reg. Rep. Miss Lyn Wakley, 2 Ash Bank, Pipers Ash, Chester CH3 7EH**

The North West Regional Committee are arranging two study days this autumn.

The first on 'Juvenile Chronic Arthritis' is on Saturday 19th September at Alder Hey Hospital, Liverpool. The speakers will be :

Dr J. A. Sills MRCP DCH Consultant Paediatrician, Liverpool.
Mrs R. Jarvis, Physiotherapist, Wexham Park Hospital, Slough.
Mrs S. Lawton, Occ. Therapist, Wexham Park Hospital, Slough.

There will be practical demonstrations after lunch.

Cost inc. lunch - £12 for members, £15 non-members.

Programmes and application forms - Miss Ann Raffle, c/o Physiotherapy Dept. Royal Liverpool Childrens Hospital, Alder Hey, Liverpool 12.

Closing date for applications - September 12 1987

The second course is to be held in Chester on November 21 and will be a 'Sophie Levitt Day'. Details from :
Mrs Pam Dowell, c/o Physiotherapy Dept. Dorin Park School, Wealstone Lane, Upton, Chester CH2 1HP

Places on this course will be limited.

Wales

Reg. Rep. Mrs V. S. Williams, 5 Larch Grove, Lisvane, Cardiff

A very successful joint meeting was held between the APCP and the Welsh Branch of the Association of Chartered Phsysiotherapists in Respiratory Care on Saturday June 6th

The topic was 'Cystic Fibrosis' and the full audience included nurses, students a pharmacist and physiotherapists working with these children.

The speakers were : Dr. Mary Goodchild, Associate Specialist U.H.W. Cardiff, who lectured on 'Current Developments in Genetics and Screening', and Diane Rogers Senior Physiotherapist U.H.W. Cardiff, who gave the "Domiciliary Approach for Cystic Fibrosis patients". Following the success of this joint meeting, a study day on Asthma and Sport will be arranged for the autumn. It is hoped that future meetings can be arranged on topics of mutual interest.

London

Reg. Rep. Miss Viv Read, 62 Madeley Road, Ealing, London, W5.

On Tuesday June 22nd Hilary Sellars an Australian physiotherapist spoke on 'Conductive Education' to a packed audience of about 120 in the lecture theatre, Gt. Ormond St. Hospital. Hilary had spent 6 weeks in the Institute at Budapest, Hungary and she spoke about her impressions of this approach being used for Cerebal Palsied children and some spina bifida. It was very informative and thought provoking, causing the audience to raise many questions.

Future Events : Saturday 26 September A Study Day of 'Sport for the Disabled'.

Tuesday 17 November. An update on the implications of the 1981 Education Act. The speaker will be Mrs P. Eckersley, APCP Post Registration Education Officer.

North East

Reg. Rep. Mrs E. Baron, 5 Sandy Lane, Ripon, North Yorks. HG4 5PD

As you will know the Annual Conference was held in York this year and proved very successful. We apologise to anyone who was unable to obtain a ticket.

On June 23 we held an evening discussion on Child Abuse which was chaired by Dr Jane Wynne, and attended by 35 people. We shall be having a day course in October "The Way I See It" -

when it is hoped to have lectures by an Orthoptist and an Occupational Therapist, on Perception and Vision.

In mid November, Grace Woods an honorary APCP member, has agreed to speak at an evening meeting. She will tell us with the aid of videos what has happened to some of the children she treated 25 years ago.

East Anglia **Reg. Rep. Mrs. Lyn Weekes, 37 The Cedars, Milton Rd., Harpenden Herts. AL5 5LQ.**

More than 60 people attended a Study Day held at Watford General Hospital Postgraduate Medical Centre on June 19th Ros Verity and Maureen Lilley spoke on 'The hand in Cerebral Palsy' and we were pleased to welcome our National Chairman, Mrs. Maggie Diffey. Our next meeting will be held on Friday October 30th, when Sophie Levitt will speak on 'The Management of the Multiply Handicapped Blind Child'. Full details on the application is advised-numbers strictly limited.

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1988 CONGRESS

TO AVOID ANY DISAPPOINTMENT READ YOUR 'NOVEMBER NEWSLETTER' FOR DETAILS of HOW AND WHEN to APPLY FOR A PLACE.

Members should also note that they do have 4 WEEKS PRIOR NOTICE to the public, of the Conference.

Remember if you don't read your Newsletter, you may not get there!

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PRESS RELEASE

Outcome from research on 1981 Education Act:
DES/DHSS jointly fund research dissemination project.

The importance of ensuring that the results of research projects reach a wide audience has been underlined by the funding by the DES and the DHSS of a project to disseminate the findings of a DES-funded programme of research into special education following the 1981 Education Act.

The 1981 Act: Research Dissemination and Management Development Project has, as its title suggests, 2 main objectives:

(1) To disseminate the findings of the research;

(2) To develop training approaches and materials to enhance decision-making and planning within and between the education, health and social services for children with special needs. A key aspect of such training is that it will be, for the most part, multi-disciplinary.

The research programme, upon which the present project is based, was set up following the passage of the 1981 Education Act, and was concerned with key aspects of meeting the special educational needs of children.

3 projects were involved:

* In-service training for special educational needs - based at Manchester University and Huddersfield Polytechnic;
* Support for the Ordinary School - based at the National Foundation for Educational Research;
* Policy and Provision for Special Educational Needs - based at London University's Institute of Education.

The projects' findings highlighted the importance of communication and collaboration between education, health and social services for the effective planning and provision of services to children with special educational needs, and the crucial role which in-service training could play in preparing professionals and managers for the new demands of the Act.

It was for this reason that the DHSS as well as the DES were concerned for the research findings to reach a wide audience from each of the 3 services.

The team's approach will be to work with existing training bodies to develop materials and a network of delivery agents. They will hope to work in close collaboration with those in health authorities and local authorities to develop training materials relevant to those authorities' needs in the field of planning services for children with special needs.

The project is based at the University of London, Institute of Education, 18, Woburn Square, London, WC1H 0NS.

The project is run in collaboration with the National Children's Bureau, 8, Wakley Street, Islington, London, EC1V 7QE.

The research team consists of:

Dr. John Welton Dr. Brahm Norwich	)Project Leaders)
Ms. Jennifer Evans Dr. Ron Davie	)Senior Development Officer)
Dr. Bertie Everard Prof. Klaus Wedell	)Project Consultants)
Mrs. Andrea Glaser	)Project Assistant

For further information contact:

Jennifer Evans	Direct Line 01 580 2581
Andrea Glaser	Switchboard 01 636 1500 x 297,298

COURSES — STOP PRESS

Title: Eating Difficulties in Babies and Children with Neurological Dysfunctions.

Organised by: APCP South East Region.

Date: October 10th 1987.

Venue: East Kent Post Graduate Centre, Canterbury.
9.30 am registration - 4.15 p.m.

This course is led by Kay Coombes, senior lecturer in speech therapy, and aims to enable paediatric physiotherapists and speech therapists to learn the development of normal and abnormal eating patterns. It will also include a video and feeding demonstration. The afternoon session will be a practical workshop.

Fee: £14 members, £15 non-members includes coffee, tea and lunch. Not to be sent with application. Places limited to 40.

Applications: Mrs. J. McKinley, 3 Stanley Gardens, Sanderstead, South Croydon, Surrey CR2 9AH. Please send SAE. Closing date September 11th.

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Title: Five Day Halliwick Course in the Practice and Theory of the Halliwick Method of Teaching Swimming to the Disabled.

Organiser: Therapy Services Unit, Scottish Council for Spastics.

Date: Monday 12th October - Friday 16th October 1987 inclusive.

Venue: Astley Ainslie Hospital, Edinburgh.

Applications: Miss E. J. Bell, Co-ordinator of Therapy Services,
Scottish Council for Spastics, 5 Rillbank Terrace, Edinburgh.

'TOGETHER FOR CHILDREN'

A multidisciplinary conference on health, sickness and disability in childhood will take place in London 3 - 7 May 1988.
For information apply to:
Caroline Roney Medical Conference Organisers
Congress House, 65 West Drive, Sutton, Surrey SM2 7NB.
Tel: 01 661 0877.