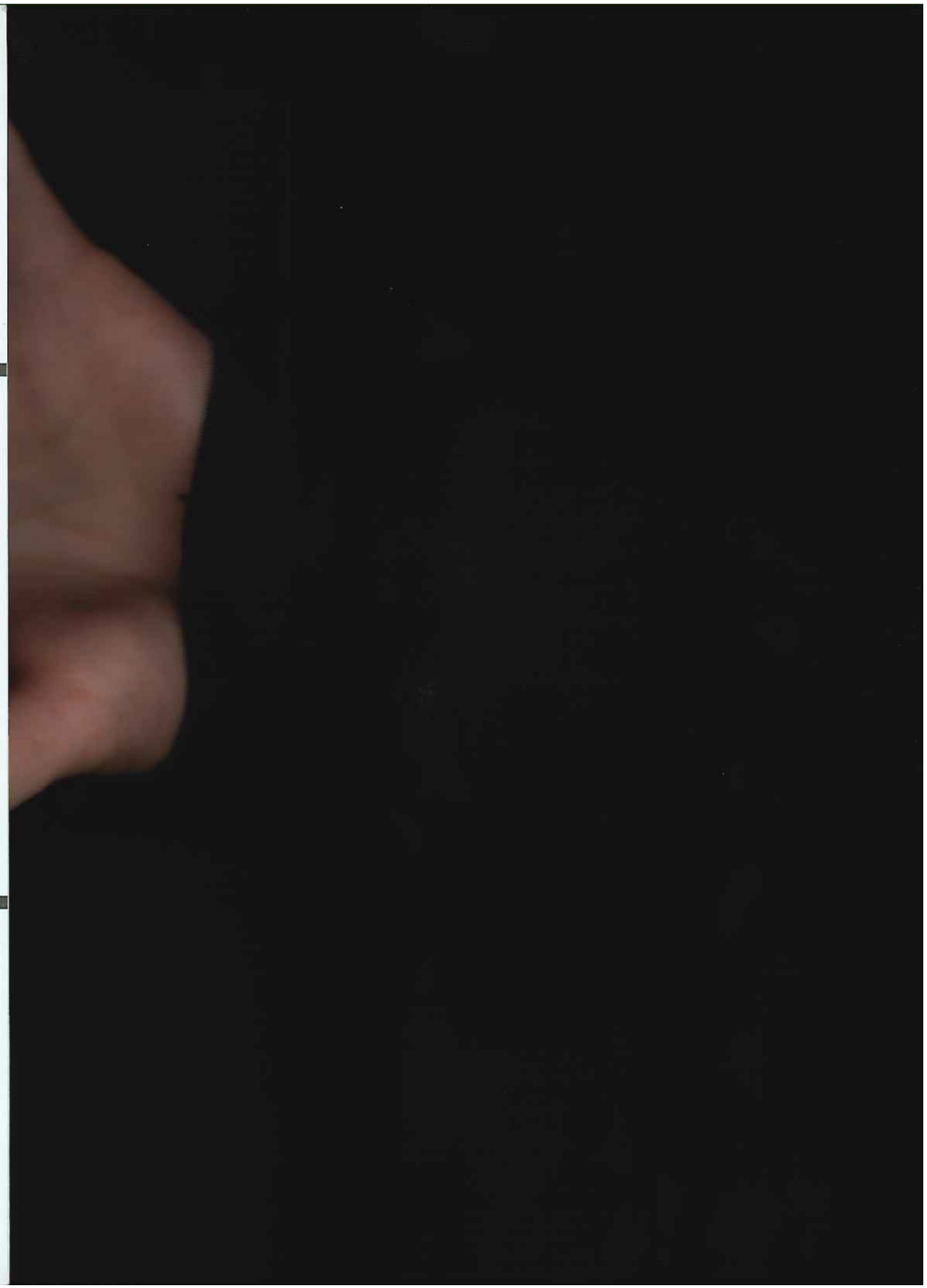
British Paediatric Association

Neurophysiological Services For Children In the United Kingdom

Report Of A BPA/BPNA/ABCN Working Party



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MEMBERSHIP OF THE WORKING PARTY:-

British Paediatric Association	Professor Sir Peter Tizard Dr M. Peard Mr John Wilkins (Secretary)
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Background to the report

In 1983 a report on the provision of neurological services for children in the United Kingdom was prepared by a working party of the BPA/BPNA. In the course of their enquiries they included a brief mention of the provision of neurophysiological (EEG and EMG services) and their findings were as follows: 'Over 20 per cent of paediatricians found the services unsatisfactory. Many paediatricians are denied ready access to EEG departments for their child patients and even when there is ready access too often reports are made by specialists unfamiliar with the electroencephalogram of childhood. It should be noted that some paediatricians never receive a report done by a medically qualified person. A substantial minority also expressed dissatisfaction with services for electromyography, although some commented that referral for EMG should appropriately be made by a paediatric neurologist. In regions where one or more consultant paediatric neurologists are in post services for EMGs were recognised as generally being quite satisfactory.' In view of this the working party recommended a separate enquiry into facilities for electroencephalography and suggested that an enquiry into services for electromyography was not required.

Clinical neurophysiology, however, has expanded considerably. A decade or so ago clinical neurophysiology was principally concerned with the provision of EEG and EMG services. Among procedures now regarded as routine are 24-hour EEG recordings on ambulatory patients and in special care baby units, and the study of visual, auditory and somatosensory evoked potentials. In view of this in 1984 a working party was set up under the aegis of the BPA with membership from the BPA, BPNA and ABCN with the proposed terms of reference:

1. To survey the present services of paediatric neurophysiology in the United Kingdom (including EEG, EMG and evoked responses). This will probably need to be done by questionnaire to all paediatricians as the most important customers to such services. Such a survey would be expected to highlight deficiencies in the service.
2. To make proposals to improve services where these are found to be lacking or deficient.
3. To look at likely future developments in clinical neurophysiology and their effect on services for children.

Procedure

The working party, whose members are listed at the front of the report, met on three occasions at the BPA offices on 13.2.87, 30.3.87 and 24.8.87. The first meeting of the working party on 13.2.87 considered the results of the questionnaire circulated in June 1985 to the senior paediatrician in each of the 213 health districts in England, Scotland and Wales. The questionnaire, which is enclosed, was divided into three parts. The first part was devised to investigate the provision of neurophysiological departments and the availability of EEG, EMG, evoked reponses, 24-hour cassette EEG recording in neonatal units and on ambulatory paediatric patients and of EEG video recording within those departments. The second part of the questionnaire identified whether the paediatricians within each district considered these investigations as necessary, or unnecessary, and if they were considered necessary as to where the services were obtained. The third part of the questionnaire enquired into whether the services provided were considered, by the paediatricians, to be satisfactory or unsatisfactory and their comments were invited as to the ways in which these services could be improved within each district.

An initial response rate of 66 per cent to the questionnaire was obtained. At the first meeting of the working party it was decided to circulate those districts that had not replied

in the first instance, but on this occasion to direct the questionnaire to the paediatric neurologist or paediatrician with an interest in paediatric neurology in the region where the districts were sited as the working party felt that this method would probably get a better response than recirculating the districts in question. This brought a further set of replies back with an ultimate response rate of 85 per cent.

At the second meeting of the working party on 30.3.87 the committee drafted recommendations relating to neurophysiological services in the UK (excluding Northern Ireland). These recommendations were subsequently discussed independently by the ABCN and their comments were received and the necessary amendments were made.

At the final meeting of the working party on 24.8.87 consideration was given to the revised draft of the recommendations for improvement in neurophysiological services for children, together with the results of the final response to the questionnaire survey. The working party was conscious that the information received on the completed questionnaire was sometimes inadequate and, on other occasions, perhaps reflected more closely the opinions of the person completing the questionnaire, rather than reflecting the actual provision and needs of clinical neurophysiological services for children within the district. The working party was conscious that these shortcomings were unfortunately common to all investigations done by postal questionnaires.

Survey of present paediatric neurophysiology services in the UK (excluding Northern Ireland)

The questionnaire circulated to senior paediatricians in the district is enclosed and the results obtained are as follows:

Total number of districts circulated – 213

Replies to questionnaire – 179 (85 per cent response rate).

The response rate varied from a reply rate of a low 54 per cent in the South West and North East Thames to 100 per cent response rate in six regions. The analysis of the replies received from the individual regions is enclosed in the appendix and the summary of the findings for all 16 regions was as follows. (Table 1)

Of the 179 districts that replied, 71 had a local neurophysiology department.

EEG Services

One hundred and twenty-four (70 per cent) districts claimed to be satisfied with the provision of EEG services for the children in their district. Forty-three (24 per cent) reported that they were dissatisfied with these services. In 24 instances this dissatisfaction was related to the department being too remote, so that parents had a long way to travel with their children, or that the EEG staff appeared to be inexperienced as far as the needs of children were concerned.

Of those who do not have EEG services, eight districts felt that the provision within the district was desirable. In many districts EEG departments are still sited within the local psychiatric hospital. A number of paediatricians also reported difficulties with communication with their local neurophysiological service, particularly in relation to urgent cases.

EMG Services

Provision of EMG services was considered satisfactory by 110 (62 per cent) districts, whilst 46 (26 per cent) districts were of the opinion that provision was unsatisfactory. Thirty of the districts enlarged on this and related their dissatisfaction to either the remoteness, or inaccessibility of the department concerned or that the operators were inexperienced in their handling of children. Of those without local services only seven districts felt that children's EMG services should be provided locally within the district. A number of districts commented that they would prefer to refer the child to the paediatric neurologists initially for consideration rather than referring the child directly for EMG services. Members of the working party drew attention to the unsuitability of much of the EMG equipment when used for children.

Evoked Responses

Satisfaction for evoked services was expressed by 93 districts (52 per cent) whilst 54 districts (31 per cent) were dissatisfied with the service provided, and 31 districts (18 per cent) made no comment. Thirty-five districts expressed the opinion concerning the unsuitability of the services as related to remoteness of the department, or inexperience of the operators with children.

Ambulatory 24-hour cassette EEG recordings

The comments on this are confined to ambulatory EEG recordings and not to provision of EEG monitoring in special care baby units. Seventy-two districts (40 per cent) expressed satisfaction with the service provided. Forty-two districts (24 per cent) were dissatisfied with the services and 65 districts (36 per cent) made no comment.

Comment

The results of this survey would suggest that the dissatisfaction with provision of neurophysiological services, whether it is EEG, EMG evoked responses or cassette EEG recordings, was voiced with a fairly consistent percentage of districts and this varied between 24 per cent and 31 per cent. (Table 2)

This finding is not dissimilar to the results found by the BPA/BPNA working party on neurological services for children in the United Kingdom, who found that dissatisfaction with neurophysiological services among paediatricians was over 20 per cent. However, the percentage who were satisfied with the individual services varied considerably and this may partly reflect the differing needs and experience of the individual paediatrician concerned.

There is also considerable variation in the satisfaction region by region, eg East Anglia, where dissatisfaction for all of the services supplied was high, whilst in South Western Region most districts that replied seemed satisfied with all the services provided. Criticisms voiced by individual districts are summarised in Appendix 1.

Ideal Requirements for the Provision of Neurophysiological Services for Children in Britain

It is estimated that patients below the age of 12 years still represent between one quarter and one half of the total referrals in many neurophysiological centres. This requires greater elasticity in time as the investigations on children usually take longer than those on adults, and usually two technicians are needed with one child (report of the Association of British Clinical Neurophysiologists – "recommended minimum standards for departments of clinical neurophysiology in the National Health Service – 1986"). Neurophysiological services should be provided by a trained clinical neurophysiologist. It is appreciated that this ideal may not be achieved immediately but it is one towards which we should work.

The working party, having considered all this information, has suggested the following statements identify the ideal requirements for the provision of neurophysiological services for children in Britain.

1. EEG

(a) Routine scalp recordings with activation procedures including sleep where relevant.

(b) Portable and ICU recordings

(c) Ambulatory 24-hour EEG recordings.

(d) EEG and 24-hour EEG recordings should be available for neonatal intensive care units and this service should be linked to a neurophysiology department with a neurophysiological technician, who has special responsibility for this service.

(e) EEG/video recordings probably in a few specialised units with a special interest in epilepsy.

2. Evoked Responses

(a) Visual – flash pattern reversal
ERG

(b) Brain stem auditory – routine
–criteria for brain death
–evaluation of hearing problems other than those which are purely audiological.

(c) Somatosenory
Scoliosis surgery – routine in special centres

3. Peripheral Neurophysiology

(a) – Routine investigation of paediatric neurological problems
– ~~EEG~~ EMG
– Nerve conduction studies

These tests should be done by a medically qualified person

4. It is hoped that in due course all reporting on various tests should be done by clinical neurophysiologists with experience of paediatric problems. In order to fulfil this, all senior registrars in clinical neurophysiology should have adequate training in paediatric neurophysiology as well as some training in paediatric neurology.

5. The range of neurophysiological services as outlined above should be available in every region as part of an integrated paediatric neurology service (this should not be taken to mean such facilities being available exclusively to paediatric neurology).

6. Emergency neurophysiology services for children must be available wherever there is a neurosciences centre.

7. Neurophysiology equipment should be designed for use in children as they have different needs from adults.

Proposals for improvement in the provision of neurophysiological services for children

1. There is need for improved communications between paediatricians and clinical neurophysiologists. Neurophysiologists should be prepared to give advice on the optimal nature and timing of tests. In addition clinical neurophysiologists might improve the understanding of the usefullness of the investigation by organising teaching seminars for junior staff in paediatrics and by encouraging them to visit departments of clinical neurophysiology.

2. Urgent paediatric cases should be given due priority. This may be most appropriately done after consultation with their paediatric neurological colleagues, but greater awareness of paediatric emergencies on the part of clinical neurophysiologists is also to be encouraged.

3. The accommodation and siting of EEG departments should be suitable for parents and children. Some adjacent districts may need to be serviced by one centre of clinical neurophysiology, which should have adequate facilities to receive children and members of their families. The working party viewed with concern the siting of some EEG departments, which take children, in psychiatric hospitals and feel that this would most appropriately be achieved by the transfer of the department to the local district general hospital, which undertakes the investigation of children.

4. In order that reporting on various neurophysiological tests should be done by clinical neurophysiologists with experience of paediatric problems, it is recommended that all senior registrars in clinical neurophysiology should have adequate training in paediatric neurology.

5. It might be helpful if pressure could be applied to manufacturers to make them aware of the generally unsatisfactory nature of current neurophysiological equipment available for the investigation of children.

Appendix 1
No. of Districts Replying to Questionnaire

SE Thames	15
SW Thames	7
NW Thames	13
NE Thames	9
Wessex	9
South-Western	8
Oxford	8
West Midlands	22
East Anglian	7
Yorkshire	11
Mersey	6
Trent	10
Northern	17
North-Western	19
Welsh	9
Scotland	9

SOUTH EAST THAMES REGION

Considerable dissatisfaction with present services was voiced by a number of districts. EASTBOURNE would want a local neurophysiology department as patients have a long way to travel and services are too scarce.

CANTERBURY has on-site EEG services that were under threat of closure whilst EMG and evoked response services were too remote.

MEDWAY AND TUNBRIDGE WELLS would prefer an easily accessible central neurosciences department which was preferably paediatrically orientated.

BEXLEY was unhappy about threat of closure of the services at Brook Hospital with the transfer of services to Guy's Hospital as it would entail longer distances for children to travel. They would also like the services of a neurophysiologist with paediatric training and this view was also voiced by WEST LAMBETH who felt services at their referral centre were adult-orientated.

BROMLEY was dissatisfied with present services and wanted a District based neurophysiology service.

GREENWICH was unhappy about provision of present EMG services and would want their own 24-hour EEG cassette recording service.

Only CAMBERWELL was very satisfied with the present delivery of services and commented on a "very interested neurophysiologist."

SOUTH WEST THAMES REGION

Most districts refer patients to central neurophysiology units in London though NW SURREY gets its investigations at Guildford or at Queen Mary's Carshalton and WORTHING gets EEGs done at Hurstwood Park neurological centre.
SOUTH WEST SURREY were hoping to purchase further equipment to enable 24-hour EEG cassette recordings to be done locally and expressed a wish for more staff and equipment.

KINGSTON AND ESHER DISTRICTS would like 24-hour EEG monitoring equipment but suggest that the interpretation of the cassette should be done at a central unit.

WANDSWORTH commented that EEG services were on the Tooting site and suggested more consultant neurophysiology sessions so that a faster service and more 24-hour EEG cassette recordings could be done. The present sites to which children are referred are also extremely busy and adult orientated and not the best environment for children.
No comments were made by MID-DOWNS, NW SURREY, CHICHESTER AND WORTHING districts.

NORTH WEST THAMES REGION

EAST HERTFORDSHIRE were unhappy about the EMG and evoked response services as being too remote or too scarce. They would like 24-hour EEG cassette monitoring for the SCBU and also regular paediatric neurology clinics.
NORTH WEST HERTFORDSHIRE found all services too scarce and too remote and waiting lists for EEGs were over one month.
NORTH HERTFORDSHIRE whilst considering present services satisfactory, however voiced a desire for provision of neurophysiological services and paediatric neurology in the north of the region.
HILLINGDON was generally dissatisfied with present arrangements with parents having to travel into units in London and would wish for the development of local neurophysiology services.
SOUTH BEDFORDSHIRE requested local EEG services as present arrangements with children travelling to London or Oxford was unsatisfactory.

NORTH EAST THAMES REGION

WALTHAM FOREST considered all facilities as unsatisfactory due to being too remote and they had difficulties in making contact with the clinical neurophysiologist.
MID-ESSEX found facilities for EEG and evoked responses too remote and would wish for a district-based portable EEG service as well as a local 24-hour EEG cassette recording service.
REDBRIDGE had difficulty with getting emergency or weekend services at Oldchurch Hospital and felt a locally based EEG portable machine would be helpful.
BARKING, HAVERING AND BRENTWOOD considered all services satisfactory but would wish for a portable EEG machine for use on SCBU.

WESSEX REGION

WEST DORSET was satisfied with EEG services but found that other services were too remote. They would like a sub-unit of the central neurophysiology department based in their district.
PORTSMOUTH was satisfied with day time services but had difficulty with night and weekend emergency EEG services.
BASINGSTOKE would wish for local 24-hour EEG cassette recordings and a portable EEG machine.
SALISBURY was of the opinion that all services were too remote and requested a locally based service and an appointment of a paediatric neurologist for the region.
SWINDON. The EEG services are based at the local mental hospital but it was hoped to transfer them to the local District General Hospital when, hopefully, services would be expanded.

SOUTH WESTERN REGION

GLOUCESTER was satisfied with services except 24-hour EEG cassette recordings which were not available and needed to be developed.
BARNSTAPLE AND NORTH DEVON were unhappy about EMG and evoked responses services which were regarded as too remote and would wish for a proper paediatric neurology/neurophysiology service developed for the region.
FRENCHAY AND CORNWALL AND ISLE OF SCILLY reported problems with staffing

OXFORD REGION

OXFORD DISTRICT was hoping that the appointment of a clinical neurophysiologist, which was shortly pending, would overcome the problems being experienced with getting neurophysiological investigations on children. It was also suggested that EEG services for children should be provided at the Radcliffe Hospital rather than at The Park Hospital because the acute services are based at the former site.
WYCOMBE AND KETTERING districts would value a district based neurophysiological service but doubt that it would be cost-effective.
KETTERING also commented that the EMG services were done by a person inexperienced with children's problems.
AYLESBURY AND MILTON KEYNES would like a 'visiting' EEG service locally, serviced from the centre in Oxford. Shorter waiting times for 'non-urgent' cases would also be desirable.
MILTON KEYNES, KETTERING AND EAST BERKSHIRE found EEG and evoked response services too remote.

WEST MIDLANDS REGION

DUDLEY reported that present services are too remote and that district services are too remote and that a district service should be instituted.
SHROPSHIRE would welcome the establishment of a 'satellite' neurophysiology department within the district.
NORTH BIRMINGHAM AND COVENTRY reported difficulties with getting emergency EEG services.
WORCESTER were unhappy with the remoteness of evoked responses and 24-hour EEG cassette recording services.
NORTH WARWICK requested more facilities for doing 24 hour EEG cassette recordings.

YORKSHIRE REGION

SCARBOROUGH AND NORTHALLERTON districts feel too remote from the central neurophysiology department and suggest that the provision of satellite neurophysiological departments locally would overcome problems of long distances, etc.
GRIMSBY also commented in similar manner and suggested a 'shared' clinical neurophysiology department to improve local facilities as the patients now have to travel to Sheffield. The appointment of a paediatric neurologist in Leeds would also help with this problem.
CALDERDALE is dissatisfied with the provision of reporting on children's EEGs which is done by an adult physician with an interest in neurology and would welcome the appointment of someone conversant with paediatric neurophysiology.

MERSEY REGION

Only six of the ten districts replied.
CREWE was satisfied with EEG services though would like a once weekly EEG service in the district, the paediatricians would also wish to have access to EMG and evoked responses services without referral to the clinical departments centrally. Reporting on neonatal and infant EEGs was a problem.
ST HELENS AND KNOWSLEY would like an extended local neurophysiology department, which currently only has EEG facilities as EMG and evoked response services are considered too remote.
HALTON commented on EEG services being unsatisfactory as they were based in the mental hospital and the reporting was unreliable. Facilities in neighbouring districts were inadequate or unsuitable.
CHESTER reported satisfaction with EEG services but others were too remote. However, it was hoped to establish a local neurophysiology department and it was hoped that these difficulties would be overcome.

EAST ANGLIA REGION

NORWICH was hoping that services would improve with the appointment of a third adult neurologist and a third paediatrician with a special interest in paediatric neurology. Twenty-four-hour EEG cassette recordings were not available and EMGs were too scarce.
HUNTINGDON reported all services except EMG done at Addenbrookes Hospital were unsatisfactory because of the distance involved (20 miles) though the service itself was excellent. Whilst other districts were satisfied with the service given at Addenbrookes Hospital, the paediatricians in CAMBRIDGE were of the opinion that the service was not ideal as the operators were inexperienced with children.

TRENT REGION

NORTH DERBYSHIRE was of the opinion that services were adequate but the waiting time for EEGs was too long (six to eight weeks). They would also like 24-hour EEG cassette recordings in SCBU and this was also desired by SOUTH DERBYSHIRE.
SOUTH LINCOLNSHIRE would like a weekly or monthly local EEG service as the referral centre was Nottingham (60 miles away).
BARNSLEY, DONCASTER AND SHEFFIELD wanted an improved 24-hour EEG cassette recording service for SCBU and neonates.

NORTHERN REGION

Districts voicing the complaint that EEG services were too remote were HARTLEPOOL, SOUTH AND WEST CUMBRIA, SW DURHAM AND DARLINGTON. Some of the districts also voiced these difficulties for provision of EMG and evoked responses.

DARLINGTON reported that the EEG department was short-staffed, hence a long waiting time.

DURHAM requested a quicker EEG service and facilities for carrying out 24-hour EEG cassette recordings in SCBU.

WEST CUMBRIA would like local provision of neurophysiological services as services centrally at Newcastle are probably overstretched and also regarded as too remote and too scarce.

NORTH WESTERN REGION

STOCKPORT reported dissatisfaction with on-site EEG services as being inadequate and reporting poor in quality.

TAMESIDE also were unhappy on reporting of paediatric EEGs.

OLDHAM would like a fully equipped neurophysiology department but accepted that it might not be cost-effective.

BLACKBURN was unhappy with EEG services because of the long waiting time and would like a district based EEG service.

PRESTON AND CHORLEY were dissatisfied with evoked response services as there was too little paediatric expertise with the reporting but hoped that the appointment of a paediatric neurologist, which was due shortly, would largely overcome this problem.

CENTRAL MANCHESTER reported all services as "too scarce" and would wish for the appointment of a clinical neurophysiologist to the district.

WELSH REGION

SOUTH GLAMORGAN, MID-GLAMORGAN AND DYFED would like the appointment of a clinical neurophysiologist at Cardiff to improve the quality of EEG reporting.

PEMBROKESHIRE requested better access to regional neurophysiological services and feels that EMG and evoked response services are too remote.

POWYS wants a fully equipped neurophysiology department based at East Dyfed Health Authority because present services entail long travelling distances.

GWYNEDD requested 24-hour EEG cassette recording facilities for the SCBU but the tapes would have to be processed at a central point.

CLWYD finds present EEG services too remote and would welcome a more paediatric-orientated EEG service based at the main District General Hospital.

GWENT AND WEST GLAMORGAN were hoping shortly to be self-sufficient in the provision of neurophysiological services.

SCOTLAND

HIGHLANDS reported difficulties as EEG services were in the mental hospital and other services were scattered in other hospitals. VER could not be done and there were no facilities for 24-hour EEG cassette recordings.

BORDERS AND LANARKSHIRE reported too long waiting times for EEGs.

DUMFRIES AND GALLOWAY requested an improved EEG service and shorter waiting time.

FORTH VALLEY would like more facilities developing locally as children have to travel to Glasgow for evoked responses and EMG services.

REGION		S.E. THAMES	S.W. THAMES	N.W. THAMES	N.E. THAMES	WESSEX	SOUTH-WESTERN	OXFORD	WEST MIDLANDS	EAST ANGLIAN	YORKSHIRE	MERSEY	TRENT	NORTHERN	NORTH-WESTERN	WELSH	SCOTLAND	TOTAL
REPLIED	YES	15	7	12	9	10	8	7	22	7	11	6	10	17	19	9	10	179
	NO	0	6	2	7	0	2	1	0	1	7	4	2	0	0	0	2	34
NEUROPHYSIOLOGY:	YES	5	5	4	5	7	5	1	11	3	6	0	3	2	6	5	3	71
DEPT:	NO	10	2	8	4	3	3	6	11	4	5	6	7	15	13	4	7	108
EEG	A	11	6	8	7	10	8	5	16	2	7	3	8	12	11	5	5	124
	B	4	1	4	2	0	0	2	3	4	3	2	1	5	5	3	4	43
	C	3	0	4	2	0	0	1	2	0	3	1	1	0	3	2	2	24
	D	1	0	0	1	0	0	1	2	0	2	1	0	0	0	0	0	8
	E	0	0	0	0	0	0	0	3	1	1	1	1	0	3	1	1	12
EMG	A	8	6	9	6	7	6	3	11	4	7	2	8	7	14	5	7	110
	B	6	0	3	1	3	2	3	7	2	2	3	1	7	2	3	2	47
	C	4	0	2	1	2	2	2	4	1	1	3	0	5	0	3	1	31
	D	1	0	0	0	0	0	0	2	0	2	1	0	0	0	0	1	7
	E	1	1	0	2	0	0	1	4	1	2	1	1	3	3	1	1	22
EVOKED RESPONSES	A	10	4	6	4	7	7	2	11	2	6	0	7	6	13	2	6	93
	B	3	0	5	3	3	1	2	8	3	2	4	2	8	2	5	3	54
	C	2	0	4	3	2	1	1	5	2	1	3	1	6	0	3	1	35
	D	1	0	1	0	0	0	1	2	0	2	1	0	1	0	0	1	10
	E	2	3	1	2	0	0	3	3	2	3	2	1	3	4	2	1	32
AMBULATORY CASSETTE EEG	A	7	1	3	3	6	5	5	7	1	6	0	4	6	11	2	5	72
	B	1	4	4	1	2	1	0	7	1	2	3	1	7	1	5	2	42
	C	0	0	2	1	1	0	0	4	1	1	3	0	5	0	2	0	20
	D	2	0	1	1	0	1	1	2	0	1	0	2	1	0	2	1	15
	E	7	2	5	5	2	2	2	8	5	3	3	5	4	7	2	3	65

A = Satisfied with service
B = Dissatisfied with service
C = Service too remote/operator inexperienced with children
D = Like local service
E = No comment/other

(Table 1)

NEUROPHYSIOLOGICAL SERVICES FOR CHILDREN IN BRITAIN

(Excluding Northern Ireland)

REPLIES TO QUESTIONNAIRE: NO = 34 (15%)
YES = 179 (85%)

	EEG %	EMG %	EP %	CASSETTE EEG RECORDINGS %
1. Satisfied with service	70	61	51	40
2. Dissatisfied with service	24	26	31	24
3. No comment/other	6	13	18	36
	100	100	100	100

(Table 2)

BPA/BPNA QUESTIONNAIRE ENQUIRY INTO PAEDIATRIC CLINICAL NEUROPHYSIOLOGICAL SERVICES

NAME: HOSPITAL (S):

NHS DISTRICT/REGION

1. Is there a department of clinical neurophysiology in your district?

   NO / YES *

   * **If YES:** at which hospital(s) or department is it based?

2. Are there facilities for carrying out:

   a) EEGs — YES / NO

   b) Evoked Potentials — YES / NO

   c) EMG & Nerve Conduction Studies — YES / NO

   d) 24 hour EMG recordings:
      i) Special Care Baby Unit — YES / NO
      ii) Paediatric Units — YES / NO

   e) EEG/Video Recordings — YES / NO

3. Who usually reports on the investigations in 2(a–e)?

	EEG	NCV/ EMG	Evoked Responses
a) Consultant Clinical Neurophysiologist:			
b) Neurologist:			
c) Paediatric Neurologist:			
d) Paediatrician:			
e) Psychiatrist:			
f) Other (please state):			

4. If there are no facilities for one or more of the investigations in 2(a–e) in your District, do you feel they are unnecessary in your work or do you arrange for them to be done elsewhere?

	Unnecessary	If no, done elsewhere	If yes, name of hospital
a) EEGs	YES / NO	YES / NO	.....
b) Evoked Potentials	YES / NO	YES / NO	.....
c) EMG & Nerve Conduction	YES / NO	YES / NO	.....
d) 24 hour EEG recordings			
i) Special Care Baby Unit	YES / NO	YES / NO	.....
ii) Paediatric Units	YES / NO	YES / NO	.....
iii) On out-patients	YES / NO	YES / NO	.....
e) EEG / Video Recordings	YES / NO	YES / NO	.....

Any comments:

5 a) Do the available facilities provide you with the services you need?

EEG	YES/NO	TOO REMOTE/TOO SCARCE/OTHER (please specify):
EMG	YES/NO	TOO REMOTE/TOO SCARCE/OTHER (please specify):
Evoked Responses	YES/NO	TOO REMOTE/TOO SCARCE/OTHER (please specify):
Others	YES/NO	TOO REMOTE/TOO SCARCE/OTHER (please specify):

b) How could the service be improved? (please state)