Fitting systems
Catherine Statham and Hannah Cooper recount their experiences of introducing FM systems in the early years

In order to support the families of pre-school hearing-impaired children and review their progress we run joint clinics at the Royal Berkshire Hospital with input from health and education services. It became apparent that some of the young children we support might benefit from an FM system. Historically, in Berkshire, these were supplied by the local authority education service and children were given a body-worn system. The size of these systems compromised the benefits before nursery age, and rejection of body-worn FM systems has been well documented. For this reason, teachers of the hearing impaired often delayed giving these systems. Research in the USA has shown the benefits of children using FM systems outside formal educational settings from the age of one. With the advent of the Newborn Hearing Screening Programme in the UK hearing aid use has been established earlier for larger numbers of children. It is therefore more feasible to begin FM use in suitable environments soon after the habilitation programme has been established. Our objective was to investigate whether the management issues and outcomes would improve if we used ear level receivers for FM systems in this population.

The initial phase
The Royal Berkshire Hospital audiology budget supplied the equipment for the project. In the first phase we offered ear level FM receivers and a body-worn transmitter to the parents of five children aged one to three with moderate to profound bilateral sensorineural hearing loss. Information and training were provided for parents prior to receiving the system. Each family was given an FM system and information pack (designed to be self-explanatory) by their ToDs who were all experienced in fitting FM systems to older children. For the first six weeks parents were asked to fill in a daily log detailing their observations and any management issues encountered. The packs contained:

- Two Phonak MicroMLxS receivers
- Two audio shoes
- An NDCS booklet – an introductory guide to radio aids
- An FM listening evaluation for children questionnaire
- A radio aid diary.

Initial findings
Equipment management was expected to be the largest problem but was found to be less important than the emotional issues raised. Initial difficulties with functioning, compatibility and maintenance of the equipment compounded the emotional reaction from both parents and children and meant that fitting took significantly longer than expected. The strength and variety of emotional reactions to the new equipment had not been anticipated. Rejection of body-worn FM systems has been documented but because of the discreet nature of the equipment used this was not expected. In this small study it was found that the families’ initial reaction to diagnosis and hearing aid use was a predictor for success with the FM system. We found that there were many components impacting on the acceptance of the FM system as illustrated in the diagram. Three out of the five families felt the FM system was beneficial in certain situations, increasing the children’s involvement in activities. Nursery staff also reported that the children became more active participants. Two families eventually decided to defer
participating in the study as they were beginning the process of cochlear implant assessment and wished to focus on this.

The initial problems placed pressure on teacher time that would otherwise have been devoted to important play and language sessions, frustrating both teachers and families. The compatibility problems that teachers experienced when trying to set up the FM systems meant that they had to work hard to repair the first impressions of the new equipment by giving constant reassurance and support to the families.

Phase two
The positive responses from the families and nurseries of the three children who took part in this pilot study and research on the benefits of early introduction of an FM system justified expanding the project. We found that the emotional impact of introducing the system early has to be carefully managed. The challenges in setting up the equipment in the home negatively affected the initial experience for the parents and the children and therefore we now prepare all equipment in the clinic prior to fitting. This entails programming a spare set of hearing aids and balancing the system before the pack is given to the ToD to fit at home. This fosters confidence in all participants and alleviates frustration.

The project has now expanded to include 12 children. We have found that fitting FM systems has inspired parents and carers to redouble their efforts in the knowledge that they can be heard even when their child is in the pushchair or the back of the car. We have noted that the initial reaction to the equipment was indicative of how the system would be used.

The new Quality Standards recently published by the FM Working Party and the NDCS support the rationale and the initial findings of the project, highlighting the importance of joint working between health and education. Our joint goal is to give every hearing-impaired child the best possible access to language, communication, learning and social interaction.

In conclusion
Fitting FM systems to pre-school children has many potential benefits. It can improve the quality of family life and enhance access to speech for young children. Finding solutions to any problems experienced in providing FM to this age group is therefore paramount. We have learnt that minimising the emotional impact of introducing new equipment to parents who may still be adjusting to the consequences of the diagnosis and hearing aid fitting is important. We have found that setting up the equipment prior to visiting the families has been key to this and the significant improvement recognised in the families’ reactions justified the time taken. We therefore recommend the careful introduction of FM systems into the habilitation of young children where this is supported by the family and by the ToD.

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