Increasing workload and changing referral patterns in paediatric cardiology outreach clinics: implications for consultant staffing

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Abstract

***Objective*—To assess the workload of, and referral patterns to, paediatric cardiology outreach clinics to provide data for future planning.**

***Design*—Descriptive study of outpatient attendance during 1991 and 1996.**

***Setting*—Five district general hospitals with unchanged local demographics and referral patterns during the study period.**

***Methods*—Postal, telephone, and on site survey of clinic records and case notes.**

***Results*—The number of outpatients increased by 61%, with a consequent increase in the number of clinics held and patients seen in each clinic. The number of patients aged between 10 and 15 years doubled.**

***Conclusion*—These data confirm the impression that demands for paediatric cardiology services are increasing. The increased need for attendance at outreach clinics has inevitable consequences for the clinical, teaching, and research activities of specialists in tertiary centres. An increase in the number of paediatric cardiologists, or development of local expertise (general paediatricians with an interest in cardiology), will be required. Furthermore, the increasingly large cohort of older teenagers and young adults with congenital heart disease underscores the need for the development of specialist facilities.**

(*Heart* 1998;**79**:223–224)

Keywords: paediatric clinics; workload; congenital heart disease

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Outreach clinics (specialist paediatric cardiology clinics conducted with paediatricians in local hospitals) are an important part of the workload of the paediatric cardiologist. Patients and families attending a local specialist clinic have less travelling and perhaps better continuity of care. These clinics provide the cardiologist with an opportunity to educate staff, improve local care, and, in the age of purchaser provider health care system, maintain loyalties and possibly increase patient referrals. There are some disadvantages however: local facilities are not always ideal, and as the clinic is usually consultant led, availability for teaching, training, and service commitments is reduced at the tertiary centre. An increase in outreach clinic workload will therefore have wide reaching implications for paediatric cardiology services.

The general impression is that workload in paediatric cardiology is increasing. Our recent review of an open access echocardiography clinic held in a special centre showed a large increase in workload over a five year period; the number of patients increased by 51%.

This study aimed at measuring the changes in numbers and demographics of patients attending outreach clinics during a similar five year period.

Materials and methods

The three consultants at the Royal Brompton Hospital attend clinics in over 30 different referring hospitals, on average four times per year. Patient attendance at each clinic during 1991 and 1996 in five referring hospitals was analysed. These clinics were chosen because each had well established clinics serving large regional populations, each was conducted by the same local consultant(s), each had unchanged tertiary referral commitments, and data were available for the two study years. This enabled a five year comparison, and allowed analysis of the most recently available data. As in our previous study,[1] five years was thought sufficient to show conspicuous differences while reducing the possibility of bias because of changing local demographics.

Patient lists from outpatient clinics in each hospital were used to calculate the average number of patients in each clinic as well as the yearly total. Data for the number of "new" and "review" patients and their age when seen were available from four of the five centres. The patient's sex was recorded whenever possible. Results were displayed using "patient episodes" as some were seen more than once a year.

STATISTICS

A paired *t* test was performed to compare the grouped data—that is, 1991 and 1996. The null hypothesis was rejected when $p < 0.05$.

Results

The total number of clinics and the average number of patients in each clinic increased from 1991 to 1996 (table 1); the number of patient episodes increased by 61% ($p = 0.03$) in that time. The number of patients increased in all age groups but, most significantly, the number of patients aged more than 10 doubled ($p < 0.02$) (table 2). The oldest group (older

Table 1 Total clinic workload

	1991	*1996*	*p value*
Number of clinics	29	39	< 0.05
Patients per clinic	18.5	22.1	< 0.09
Total number of patient episodes*	536	862	< 0.05
Total number of new patients†	128	353	< 0.01

*Five centres; †four centres.

Table 2 Patient age profile

	Number of patients	
Age (years)	*1991*	*1996*
< 1	90	137
1–4	198	309
5–9	132	218
10–15	91	180
⩾ 16	24	28

than 16 years) changed little, reflecting our policy to refer these patients to local adult cardiology clinics or specialist adult congenital clinics.

The number of new patients also increased ($p < 0.01$), reflecting an additional demand, rather than increasingly frequent review of old patients.

Discussion

This audit has shown a significant increase in outreach clinic workload, with more patients of all ages being seen. This reflects more new patients presenting and more "old" patients to review. It cannot be argued that improved facilities for local monitoring (for example, all the clinics in this study have facilities for echocardiography) have led to a shift of patient referrals away from the tertiary centre, as simultaneously we have reported increased demand within the specialist centre.[1] The increasingly large number of new patients is seen at the request of local paediatricians and will inevitably include some with normal hearts, but equally many will have cardiac disease. Follow up of patients with disease is arranged by the specialist; as this was the same person for each study period bias was minimised, but again the number of patients has increased.

Thus the paediatric cardiologist is seeing more patients in all age groups, of particular interest is the growth in size of the cohort of older patients. This finding may be the result of several factors—for example, more patients are being diagnosed, more interventions are being carried out, and there is an increased survival of children with congenital heart disease.

Our data underscore the need for increased provision of paediatric cardiology services if teaching, research, and service commitments within the tertiary centre are to be maintained. This could be achieved by increasing the number of highly specialised paediatric cardiologists with their primary base within the tertiary centre, perhaps subspecialising in ambulatory cardiology (to maintain exposure to other subspecialty areas such as interventional cardiology). Alternatively, as in other areas of paediatrics and general adult medicine, the development of a service provided by properly trained local general paediatricians with an interest in cardiology and skills in cross sectional echocardiography could be envisaged.

Another burgeoning issue is the increasing number of teenage patients who will require specialist care as they become adults. Paediatric cardiology services may not have the capacity to cope, and adult cardiologists are perhaps less familiar with complex congenital heart disease than is desirable. The development of specialised regional facilities for adults with congenital heart disease must be part of any planning strategy.

In conclusion, there is increasing demand for paediatric cardiology services, as well as an increasingly large population of older patients requiring specialised care as they enter adult life. An increase in consultant numbers is likely to be required if this service commitment, as well as research and teaching activities, is to be maintained

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1 Tybulewicz A, Rigby ML, Redington AN. Open-access paediatric echocardiography; changing role and referral patterns to a consultant-led service in a tertiary referral centre. *Heart* 1996;**75**:632–4.