Introduction of Car Service into a Practice

Though practice patients were not circularized about the car service before it started, for fear of abuse, it would have been wise to do so. Had they been told beforehand that, besides saving the doctor's time there were many benefits to them as patients in coming to the surgery by car, there would have been a more ready response to the use of the scheme. In our practice certain patients appear to have gained the impression that the doctors in the partnership will not visit at all. If the service had been publicized beforehand these rumours need not have gained a footing.

Comments

The three partners are convinced that use of the car service will become widespread in the next few years. It is essential to reduce time spent in practice doing inessential things if the medical care of our patients is to improve. Most patients who are seen at home could well be seen in the surgery if transport could be arranged to take them there; and, perhaps more important, it might become the generally accepted thing that home visits were for the *very* ill only.

I have been able to reduce my visiting list considerably since the service was introduced into the practice. Some of the reduction, however, arises from being more selective in repeat visits. In 1965 I made 2,633 visits. In 1967 the number was reduced to 1,106—a reduction of 58%.

Considerable emphasis is laid by some doctors on the importance of home visits, but the amount of information gained on these visits may well be exaggerated. One visit to the home should suffice for most purposes.

From experience in our practice we believe the organization of a car service to be a worth-while investment, and to be adaptable to the needs of any type of practice.

Summary

A report has been made of a car service organized over two years in a group practice.

One of the doctors' cars was used and a retired chauffeur was employed to carry patients who were too ill to go to the surgery on their own yet well enough when transport was provided.

Approximately 25% of patients requesting a new visit were prepared to come to the surgery by car, and this group accounted for about half the patients carried there in 1967. The other patients came for repeat consultations to see the doctor and/or nurse.

There was little evidence of abuse of the car service, and most patients readily accepted the provision of transport. They benefited from the service by earlier consultation and treatment, and the chronic sick and convalescent patients by more rapid recovery and an increase in their self-confidence. The doctor saved time and effort and was more readily available for consultation.

The cost was little more than £1 per hour saved.

I wish to acknowledge the help and encouragement given to me in writing this paper by my partners, Dr. A. G. I. Stockley and Dr. C. W. Coole, and to thank Dr. S. L. Wright, Medical Officer of Health for Croydon, for his kind permission to allow the district nurse to work with us in this way.

REFERENCE

Eimerl, T. S., and Pearson, R. J. C. (1966). *Brit. med. J.*, 2, 1549.

MEDICAL HISTORY

Hassall—Physician and Microscopist

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Arthur Hill Hassall (1817-94) is remembered by the unique thymic corpuscles which bear his name. He was born in Teddington, the son of a general practitioner. Hassall himself was, in turn, a student of medicine, botanist, general practitioner in Notting Hill, London, microanatomist, public analyst, consultant physician to the Royal Free Hospital, and finally designed, founded, and became physician to the Royal National Hospital for Consumption and Diseases of the Chest at Ventnor. He made numerous original observations with his favourite instrument, the microscope, and was a prolific writer, ending with an autobiography aptly entitled *The Narrative of a Busy Life*.

His adventurous spirit must have stemmed from his father, Thomas Hassall, a general practitioner in Sunderland, who temporarily held the double commission of Captain and Surgeon in the Durham Fencibles, a volunteer regiment raised to quell the Irish rebellion of 1798. While serving in this dual capacity his father met his future spouse. Hassall¹ gives this description: "It was a case of 'love at first sight.' He was standing on the steps of a hotel in Downpatrick when a ladies' school passed; he was struck with the appearance of one of the young ladies,

boldly made himself known to the mistress of the school and after due enquiry and the necessary preliminaries the lady, Miss Anne Sherrock, became Mrs. Thomas Hassall."

Through his mother's Irish family connexions Hassall gained entry to the famous Dublin medical school, and was taught by such notables as Colles, Stokes, Graves, and Corrigan.

There are two primary approaches to research: a new idea or a novel technique. Hassall used the latter, and turned the magnifying lens of his microscope on to diverse problems: the fauna and flora of fresh and sea water, human histology, putrefaction of fruit and vegetables, adulteration of foods, and examination of urine, to mention a few examples. He began research when a medical student, collecting zoophytes and corallines from Dublin Bay, and even while waiting to take his final medical examinations in London he sought advice from Sir William Hooker, director of the Royal Botanic Gardens at Kew, on the flora of British waters. Many of his early communications were published in the *Annals of Natural History*, and a new species of off-shore animals was named *Lepralia Hassallii* after him. Hassall's *History of the British Fresh Water Algae*, published in two volumes by Longmans in 1845, remained an authoritative text for more than half a century. He was among the first plant pathologists, and experimentally inoculated fungus from decaying fruit into healthy

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growing apples, peaches, and pears as well as potatoes and lettuce, thereby causing their rapid decay.

Hassall's Corpuscles

In 1839 Hassall obtained the membership of the Royal College of Surgeons, and two years later the Diploma of the Apothecaries Society. However, he continued botanical research for a further two years. This left him dissatisfied, and he set up in medical practice in Addison Road North, Notting Hill, then a suburb of London. Though the district was rife with disease he found time to obtain tissues from the post-mortem room at St. George's Hospital, Hyde Park Corner. In 1849 he published *The Microscopic Anatomy of the Human Body, in Health and Disease*,² the first complete text, in English, devoted to histology, in which appeared accurate drawings of Hassall's corpuscles in the human thymus. However, they were described four years earlier by Mr. John Simon, F.R.S., assistant surgeon to King's College Hospital, in an essay for which he was awarded the Astley Cooper prize of the College of Surgeons.³

Simon, who was to become the father of the public health service, noted that the corpuscles varied in number, size, and shape. In his essay he wrote: "There may be only a single one, which is then found proportionally large, and attracts notice by its high power of refraction." He goes on to say: "During the period in which these cells are being developed, the application of acetic acid to the preparation, as it lies under the microscope, shews them to have a great affinity to embryonic cells; for the acid dissolves the cell membrane completely away and leaves the nucleus of the cell (the dotted corpuscle) unaffected by its action." From this early histochemical observation it was erroneously deduced that the corpuscles are vestigial embryonic remnants. Recent observations disprove this.

Hassall found general practice "somewhat harassing," and he attributed the poor health of the community to collections of foul and stagnant water from inadequately drained piggeries. His early interest in public health is displayed in a pamphlet on "Observations on the Sanitary Conditions of the Norland District, Shepherd's Bush and the Pottery." Chest infections were all too common, and he himself developed pleurisy, for which he blamed the local dampness. He relates how he had to bleed himself because his inexperienced assistant was too nervous. On recovering from this illness he decided to make a fresh start elsewhere.

Adulteration of Food

After some six years in suburban practice Hassall moved to Bennet Street, St. James's, where he "fitted up a commodious laboratory adapted alike to chemical and microscopic research." Looking for further problems he might tackle, he "found that roasting and partial charring and blackening by no means destroyed the beautiful minute structures and tissues entering into the composition of the coffee and chicory root." This was the key that enabled him to detect the adulteration of coffee with roasted wheat, rye, beans, peas, and burnt sugar prevalent at the time. He submitted a report to the Botanical Society of London, whose secretary published the findings and notified the press. He also discovered that brown sugar abounded with living and dead acari, accounting for the "grocer's itch," an occupational disease of grocers' assistants.

The Analytical Sanitary Commission was initiated by Thomas Wakley, surgeon to the Royal Free Hospital, M.P. for Finsbury, and founder and editor of the *Lancet*. Hassall was invited to become chief analyst of the Commission, whose findings were published at frequent intervals in the *Lancet* in 1851 to 1854. Some 2,500 analyses of food recorded the impurities in bread, coffee, chicory, cocoa, spices, vinegar, beer, and the quality of preserved meat and fish. Hassall and his assistant ventured to various parts of London, mostly in the evening, collecting samples with scrupulous care. The assistant bought

the sample, witnessed by Hassall, and on leaving the shop the name of the vendor, cost, and date of purchase were inscribed on the wrapper. No second purchase was made until these formalities were carried out. Hassall found this interesting and pleasant in the summer but "in winter most trying and wearisome."

Clayton,⁴ Hassall's biographer, records that the evils which Dr. Hassall exposed thoroughly aroused the public, and meeting followed meeting. Questions were asked in the House of Commons, which appointed a Committee of Inquiry in 1854, and the findings culminated six years later in the first Act for the Prevention of Adulteration of Food and Drink.

Medical Appointments

Hassall became a member of the Royal College of Physicians in 1848, and gained the M.D. London in 1851. Two years later he was elected to the consulting staff of the Royal Free

Hospital, which he served for 15 years. He also became physician to two large insurance companies, which, presumably, provided an important source of income.

A year after his appointment to the Royal Free staff a cholera epidemic broke out in London. Hassall examined the rice-water stools, and among the bacilli, vibrios as they were then called, he must have seen the causative organism long before the disease was ascribed to them by Koch. Good interhospital relationships existed, for he wrote "in order that no time should be lost before the examinations (of the stools) were made, my microscope was placed in readiness in Abernethy Ward of St. Bartholomew's Hospital." He performed the necropsies himself in Wandsworth Mortuary.

Hassall next focused his attention on the examination of urinary deposits, and crossed swords with his contemporary Bence Jones. A number of illustrated articles appeared in the *Lancet*, and in 1859 he wrote a beautifully illustrated little monograph, *The Urine in Health and Disease*.⁵

Overwork activated a tuberculous chest lesion, quiescent since Hassall's medical school days. In 1866 a severe haemoptysis seriously endangered his life, and after some months of being critically ill he was sent to recuperate in Ventnor, Isle of Wight. He made a surprisingly rapid recovery, and his practical mind applied Koch's laboratory findings. The disease now established on an infective basis, Hassall devised the novel concept of the "separate system," where each patient slept in a single bedroom

and six patients lived in semidetached houses, sharing a common sitting-room. The design of this new sanatorium attracted much interest, including prominent visitors from the capitals of Europe.

Hassall's recovery continued, and he became physician to the Royal National Hospital for Consumption and Diseases of the Chest, having raised most of the money needed for its construction. However, at the age of 60 he was forced to move to the more temperate climate of San Remo, on the Italian Riviera. There he continued to practise and write until a few weeks before his death at the age of 77.

In the latter half of the nineteenth century the eponymous title of Hassall's corpuscles was also attached to the cellular deposits in the urine of patients with cystitis. Today it is confined to the lamellated bodies unique to the medulla of the thymus. How would Hassall have reacted to recent knowledge gained on the behaviour of his corpuscles? He would surely have been interested in their waxing and waning in size with involution of the thymus, in their active uptake of antigens and antibody from the circulation, as well as their storage of gamma-

globulin in healthy human beings at all ages and in patients with myasthenia gravis and rheumatoid arthritis. However, why these bodies occur only in the thymus remains a mystery. It has been postulated that they play a part in long-term immunity, a function which no doubt would have appealed to Hassall's keen interest in preventive medicine.

It is a pleasure to thank Mr. W. H. G. Hill, librarian, Guy's Hospital Medical School, and Dr. M. N. Oster for help in the preparation of this manuscript.

The photograph of Dr. Hassall is reproduced by courtesy of the Wellcome Trustees.

REFERENCES

- ¹ Hassall, A. H. (1893). *The Narrative of a Busy Life: An Autobiography*. London.
- ² Hassall, A. H. (1849). *The Microscopic Anatomy of the Human Body, in Health and Disease*. London.
- ³ Simon, J. (1845). *A Physiological Essay on the Thymus Gland*. London.
- ⁴ Clayton, E. G. (1908). *Arthur Hill Hassall: Physician and Sanitary Reformer*. London.
- ⁵ Hassall, A. H. (1859). *The Urine in Health and Disease*. London.

NEW APPLIANCES

Plastic Laryngoscope

Dr. W. N. VELLACOTT, consultant anaesthetist, and Dr. A. J. SEAR, consultant in dental surgery, Royal Infirmary, Worcester, write: There still seems to be a place for a mass-produced, reliable, relatively cheap—that is about half the present price—laryngoscope for use both in operating-theatres and in wards. Most hospitals have resuscitation kits in many of their wards, and a laryngoscope is often thought to be an essential part of such kits. Gillett and Patkin (1964) designed a model with a Macintosh (1943) blade, home-made of wood and aluminium and costing only a few shillings; and the staff of the C.M.C. Hospital, Vellore (1965), have described one locally manufactured of iron with an aluminium blade.

We have turned to plastic to provide what we think is required, and have used acetal copolymer, a very strong hard plastic with a low coefficient of friction which allows the blade to slide easily over mucous membrane. It is also thought to be less traumatic than metal to teeth and soft tissues.

With the aim of increasing electrical reliability a screw switch has been adopted which transmits pressure to all electrical contact points in the circuit simultaneously. The contact points have been reduced from eight, nine, and twelve (the numbers found on the latest models of three currently used laryngoscopes) to five. Side-loading of the battery into the handle of the instrument, with a detachable cover, has been used in the design (see illustration). This allows ready access for inspection and cleaning.

All laryngoscopes fail occasionally, and this sometimes happens when the cords are visualized and intubation is imminent. This must usually be due to slight movement at the jointed angle of the instrument as the tongue is lifted. As laryngoscopes are now less frequently carried about in pockets and cases, the joint allowing the instrument to fold can reasonably be discarded, and this has been done on the model described. On trial it has been switched on and off 20,000 times without electrical failure, apart from the very occasional need to replace a bulb. The blade is of the Macintosh type, and we find it suit-

able for almost all patients from the age of 3 years upwards.

The adequate cleansing of laryngoscopes has always been a problem. Many of us are probably satisfied with scrubbing the blade under running water, the brush being kept in a suitable disinfectant when not in use. Others prefer to boil the instrument after such a procedure, or treat it in a modified Swan Maid (or other) domestic dish-washing machine as recommended by Barrow and Meynell (1966). Surface disinfection presents so wide a field that useful comment is difficult. Phenolic and acidic disinfectants are said to be better avoided (Plester, 1967). A number of recently introduced disinfectants we have tried appear to do no harm to the plastics we have used. Attention, however, has lately been drawn (Leigh and Whittaker, 1967; Steingold *et al.*, 1967) to the tendency for some disinfectants to be absorbed to a greater or less degree by some plastics, reducing the strength of the solution. Much careful work seems necessary to clarify the situation.

Though not often available, ethylene oxide sterilization is efficient and harmless to these plastics. It suffers from the disadvantage of being rather slow (five to eight hours), but seems ideal for prepacked storage in wards or anaesthetic-rooms. Emanations of this gas from a plastic are said to continue for some time, and an "airing" period may in some circumstances be desirable after treatment (Cunliffe and Wesley, 1967); this seems unnecessary in the case of laryngoscopes, which are in contact with body tissues for such a short period. In all of these methods the bulb can be left in place—a considerable advantage.

Acetal copolymer, of which this instrument is made, may be boiled or dish-washed indefinitely, and has a high degree of resistance to all chemicals likely to be met with in anaesthetic-rooms or operating-theatres. Autoclaving, however, cannot be recommended owing to minor distortions and shrinkage. The insulation used is made of polytetrafluoroethylene, a fluorocarbon polymer which is unharmed by repeated boiling

or autoclaving, and has a very wide resistance to chemicals.

We believe this instrument a great deal more reliable electrically than any metal one we have used, and it has shown no deterioration during a year of continual daily use in the theatre.

The laryngoscope may be obtained from Longworth Scientific Instrument Co. Ltd., of Abingdon, Berkshire.

We should like to thank Messrs. L. G. G. Charlesworth Ltd., Plastic Moulders, and White Electrical Instrument Co. Ltd., of Malvern, and a number of anaesthetists and others who have helped with the development of this instrument.

REFERENCES

- Barrow, M. E. H., and Meynell, M. J. (1966). *Brit. J. Anaesth.*, **38**, 907.
- Cunliffe, A. C., and Wesley, F. (1967). *Brit. med. J.*, **2**, 575.
- Gillett, G. B., and Patkin, M. (1964). *Anaesthesia*, **19**, 595.
- Leigh, D. A., and Whittaker, C. (1967). *Brit. med. J.*, **3**, 435.
- Macintosh, R. R. (1943). *Lancet*, **1**, 205.
- Plester, D. W. (1967). *Plast. Inst. Trans. J.*, **35**, 579.
- Staff of C.M.C. Hospital Vellore (1965). *J. Christ. med. Ass. India*, **40**, 459.
- Steingold, L., Dunn, L. J., and Henman, S. (1967). *Brit. med. J.*, **3**, 620.