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W.E. HALL AND C.R. JOLLY . STUDY TOUR

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~~PADDINGTON GROUP H.M.C.~~ AUGUST / SEPT. 1960. (Mr. C.R.Jolly, Group Secretary.)

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Wooster, Ohio.	WOOSTER COMMUNITY HOSPITAL.	44,beds.
	General Information.	

Draft

MR. HALL

Private circulation

Not for general publication in this form.

Hospital Study Tour - Canada and U.S.A.

31st August to 30th September, 1960.

Introduction.

The purpose of the tour was (a) to visit three hospitals in Montreal, Canada, (b) to join the I.H.F. Study Tour organized by the American Hospital Association, and (c) to accept an invitation to obtain a more detailed picture of American hospital practice by a slightly longer visit to a hospital in Canton, Ohio. The first and last parts of the tour were made in company with Mr. C.R. Jolly, Group Secretary of Paddington Group H.M.C., but during the I.H.F. Study Tour we had decided that we might find it more informative if we visited different hospitals on occasions. I had already indicated my intention to concentrate mainly on planning, construction, equipment, etc., and Mr. Jolly very kindly offered to give closer attention to administrative and medical aspects.

The following hospitals were visited:-

Canada

The Montreal General Hospital
St. Justine's Hospital, Montreal
Royal Victoria Hospital, Montreal

U.S.A.

Massachusetts General Hospital, Boston, Mass.
Grace-New Haven Community Hospital, New Haven, Conn.

(New York Hospital, New York (W.E.H.)
(Goldwater Memorial Hospital (C.R.J.)

(St. Vincent's Hospital, New York (W.E.H.)
(Montefiore Hospital, New York (C.R.J.)

(Hunterdon Medical Center, Flemington, N.J. (W.E.H.)
(Princeton Hospital, Princeton, N.J. (C.R.J.)

Lankenau Hospital, Philadelphia, Penn.
Johns Hopkins Hospital, Baltimore, Maryland

(Bethesda Clinical Center of the National Institutes of Health, Washington, D.C. (W.E.H.)
(St. Elizabeth Hospital, Washington, D.C. (C.R.J.)

Aultman Hospital, Canton, Ohio.
Wooster Community Hospital, Wooster, Ohio.

Brief descriptions of these hospitals are given in Appendix A.

On the 31st August we left London Airport by Trans-Canada Jet Airliner DC8 at 2.50 p.m. arriving in Montreal at 4.15 p.m. (local time), a most comfortable, smooth, uneventful non-stop flight of 3,350 miles in 6 hours 24 minutes actual flying time. At each of the three Montreal Hospitals we visited we received a most warm welcome, and the senior officers who escorted us made a special point of intorducing heads of departments so that we might see as much of the hospital as was possible in the time available and obtain full answers to our many questions. This allowed more time to note features of special interest. These visits were most rewarding.

On Sunday, 4th September, we flew from Montreal to Boston in readiness to join the I.H.F. Study Tour. The American Hospital Association is to be congratulated on the organization of this most successful tour, although it may be said that such a closely-planned itinerary left one with little time or energy to write notes in full. Despite the hurricane Donna, the arrival of Mr. Khruschev in Manhattan, the Pennsylvania Railroad strike and two threatened hotel staff strikes all went well. At all hospitals the participants were received with generous hospitality and great trouble was taken to prepare literature, provide guides, and meet special interests. The participants were also entertained at a number of receptions, luncheons and dinners under the patronage of various

associations and manufacturers. Throughout the tour those taking part were accommodated in very good hotels and were transported by motor coaches on 40 separate journeys covering Boston - New Haven - New York - Philadelphia - Baltimore - Washington - New York.

At the conclusion of the I.H.F. Study Tour Mr. Jolly and I took the night train from New York to Canton, Ohio, and on arrival proceeded at once to the Aultman Hospital. For three days we were private guests at the home of the Director of that hospital, Mr. George R. Wren, and he and the Hospital staff afforded us every opportunity to tour the hospital and study various aspects in detail. On Wednesday afternoon we were entertained to lunch and invited to attend a regular meeting of the senior lay administrative officers from hospitals in three counties of Ohio, and after listening to the open discussion on local problems we spent some time answering questions on our National Health Service. Subsequently we visited the Wooster Community Hospital.

On Wednesday, 21st September, we travelled by night train to New York, prior to boarding the s.s. Statendam for the return voyage to Southampton, arriving on Friday, 30th September.

Visits to Hospitals in United States

1. The hospitals visited are situated in a group of eight states in a comparatively small north-eastern area of the U.S.A. and most are located in large cities. With the exception of the longer and more detailed study of the Aultman Hospital, the visits were of necessity rather superficial in character. Old and new hospitals were included, also new extensions and schemes of modifications; the hospitals were of various sizes and types, e.g. city, federal, veteran, voluntary non-profit, church-related non-profit, intensive care, chronic, medical-school-affiliated, short-term and long-term.

2. This report is therefore concerned with only a small number of hospitals, and the facts and impressions recorded are those which appeared to the writer to be of general interest. It would be wrong to assume that what is written is complete or represents more than a glimpse of hospitals in U.S.A.

3. General planning.

The Grace-New Haven Community Hospital and the Rhode Island Hospital are examples of the double-Y design and show how the size of the utility rooms is reduced when Central Sterile Supply Services are incorporated in a new building. The new extension at Johns Hopkins Hospital is of the "race-track" design. New York Hospital is 28 storeys high and the considered opinion of the director was that 14 storeys is high enough, an opinion which is greatly influenced by the difficulties in handling lift traffic in very high buildings. Soil disposal and rain water also present special problems in very high buildings. St. Vincent's Hospital, New York, demonstrated the modernization of an "old building" in which the maximum use has been made of available space, but in America it seems that a building of 30 years or so is "old" and that it is then considered time to start building afresh, often on a new site.

4. In regard to many of the modern hospitals there were frank admissions of errors in estimating spacial requirements, as, for example, filing space at Flemington Center, but one felt that much had been gained by getting on with the job.

5. About half of the $60m. - available had been spent on the new building which consitutes the clinical centre of the National Institutes of Health, Bethesda, and from all points of view, particularly space allocation and finishes, this building is of luxury standards one would not expect to find in British hospitals.

6. Mechanical Mezzanine Floor. A feature of the new building of Grace-New Haven Hospital was the mezzanine floor introduced between the 2nd and 3rd storeys, and extending over the whole building. There were two reasons for this arrangement. First, it brought all air conditioning, heating, electricity, suction, piped gases and other services into immediate relationship with the departments making most use of them (viz. operating theatres at one end of building and X-Ray department at the other, with cystoscopy rooms in the centre for common use, all of which occupied one whole floor, entirely windowless); and, secondly, further storeys can be added to the building without disturbing the lower floors. This floor was clean and tidy, with coloured identification of pipe runs and controls, [redacted] Circuit charts on the walls, etc.; only one person was seen to be on duty.

7. Wall finishes. The most common wall finish was plaster, and more often than not decorated with a flat paint or emulsion in pastel shades, but many other surface finishes were noticed, including a pre-glazed brick, wall-paper and marble (entrance hall at Bethesda). Decorative motifs were used to bring relief, e.g. at ends of corridors, or to add interest. A brick wall was given a satisfactory finish by spraying it with 7 coats of "cement enamel" (St. Vincent's Hospital). Metal partitioning is used quite a lot, but the Engineer at Johns Hopkins Hospital expressed the view that it was not as flexible (in the sense that it can be taken down and re-erected) as made out to be and he much preferred masonite.

8. As protection for the lower half of walls, rubber or plastic (ribbed) sheeting was stuck on to the wall surface; the "Caladron" rubber at St. Vincent's Hospital was 10 years' old and in very good condition, and the ribbed plastic sheeting at Aultman Hospital had stood up to several

years' wear without showing any signs of damage. At another hospital it was noticed that the unprotected walls were badly damaged. The features mainly responsible for preventing damage to wall surfaces were (a) wide corridors of 8 ft. or more, seen in most hospitals, but not permitted in England, (b) a 45° triangular skirting, 4" wide and 4" high - or sometimes 7" high to make a sharper angle - which prevented trolley wheels from riding up the skirting and so damanging the walls, but because of the space it takes up such skirting is possible only in a wide corridor, and (c) stainless steel angle plates to the edges of wall corners, etc.

9. Floor finishes. The most common material was vinyl tiles, usually of marbled pattern and of medium shades. These tiles appeared to be, and were described as, of good quality and there was a reference to the incorporation of "chippings" in the material but it was not clear what this meantnor possible to obtain further information on this point. Conductive terrazo is also widely used, including the ward floors at one fairly new hospital (Wooster), the solarium at Aultman Hospital, and in corridors formed the protective skirting referred to above. As evidence of skilled workamnship, only one crack was noticed in the extensive terrazo floors surfaces at St. Vincent's Hospital. We were told by an architect of a new hospital that the incorporation of a grid in anti-static floors was no longer required (or permitted?) but it was not made clear why this was so; but we learned elsewhere that generally the explosion risks of static electricity were being avoided by the turning over to non-explosive anaesthetics. Conductive vinyl tiles are used at Massachusetts General Hospital.

10. Some wood floors had been treated with sealers, including the gymnasium at Bethesda, but no information could be obtained on the type of sealers used; other wood floors were wax polished. Washing by mops or mechanical scrubbers is the common cleaning procedure, and suction cleaners are widely used. As part of the modernization of old wards at Grace-New Haven Hospital, carpet has been laid on the ward corridor floors (and pictures added to the walls). Carpet at the main entrance of Massachusetts General Hospital helped to prevent dirt being carried into the Hospital; at other hospitals (e.g. Grace-New Haven Hospital) chain-link mats are installed for the same purpose.

11. Ceilings. Generally, ceilings are low by British standards, and acoustic finishes of different kinds (e.g. tiles of mineral fibre with an "open grain" finish instead of a regular pattern holes) are used in all kinds of departments e.g. recovery room at Aultman Hospital, and by all hospitals (except that none were noticed in one older building).

12. Doors and door furniture. It was noticed that doors are always of sound construction and the door furniture of good quality - for example three robust 5" to 7" stainless steel butts for a room door - and this reflected the general trend of expending capital so as to relieve subsequent maintenance costs. Where it is necessary for a room doorway to be wide enough for beds to go through, large single doors are used in preference to double doors. Not all ward doors are fitted with viewing panels, and sometimes it is only a peep-hole that is provided. Doors operated automatically by an interruped light beam or by foot pad were seen, and in one instance a sliding door was operated in this way (Aultman Hospital). The double-skin concertina flexible door ("Hufcor" by Hough Manufacturing Corporation, Janesville, Wis.) was found in a variety of places, but it was said that these are not sound-proof, and there was the problem of cleaning the inner surfaces of the double skin.

13. Lighting. Artificial lighting is provided in full measure, usually from recessed or surface fluorescent ceiling fittings, and in offices and common rooms diffused lighting is widely used. The low cost of electricity explained why lights were left switched on unnecessarily. Cafetarias are well lit, and it was admitted by one hospital that the purpose was to discourage the staff from occupying tables longer than need be (this may be compared with the use of dim lighting in bars).

14. Heating and Ventilation. Heating is usually by steam or hot water convectors (e.g. high pressure steam at St. Vincent's Hospital), and the convector system was generally considered to be the most efficient, even in operating theatres. Ceiling radiant heating was preferred to floor radiant heating, but experiments in the use of the same piping and panels for cooling had shown that condensation was a trouble.

15. The type of fuel depended upon local prices. Johns Hopkins Hospital burnt coal. At Aultman Hospital coal dust at £8-£9 a ton is used, but there was a standby unit which could burn either gas or oil in an emergency. The coal dust is delivered into bunkers and conveyed by endless belt to high level hoppers, from which it is fed by air pressure into the boilers. These storage containers are heated by steam coils in winter when the temperature may be down to minus 10°F (up to 90°F in summer). The lorries delivering the fuel take away the ashes on the return journey. It was noted that boilers were fully instrumented

16. Air-conditioning is used extensively, but it was not always clear that those using the term gave it the same meaning. The new double-corridor wards in Masschusetts General Hospital are described as "fully air-conditioned", i.e., the air being filtered, heated or cooled, humidified and delivered under positive pressure; and at Lankenau Hospital the whole of the floor occupied by operating theatres is air-conditioned, using Trion electronic filters, water washing, heating or cooling, etc., and maintaining 55% humidity with 8 changes per hour (3 changes in other parts of the hospital). In the new extension at Johns Hopkins Hospital it was planned to introduce positive pressure filtered air (using both mechanical and electrostatic filters) at 55°F at all points, and for each room or unit to increase temperature as required by local, independently controlled, steam heaters, but all rooms will also have supplementary heating by radiators. Occasionally one noticed in such places as offices, physiotherapy rooms, etc., an "air-conditioner" had been installed, fixed to the window frame; these looked rather like cabinet wireless sets, and sometimes were themselves in need of cleaning.

17. Pneumatic Tube Systems. These are found in most hospitals, certainly in all the new buildings, and regarded as an essential feature. Both the pre-coded dial system and the central station system (e.g. at Bethesda and at Massachusetts General Hospital) are used, but I did not see an acoustic system. The containers are fairly large. Normally they are used for the dispatch of paper and films, but at some hospitals (e.g. St. Vincent's Hospital) small drug items. I was told that the system was also being used for the dispatch of specimens, but there was no evidence of it being used for liquids. Central suction for cleaning is installed in part of the Grace-New Haven Hospital and they wished they had it everywhere.

18. Chutes. It seems that the designers of American hospitals have a great liking for chutes - chutes for dirty linen, for rubbish, and for dust (with suction) - sometimes all three together. The soiled linen is deposited in the chute, in some hospitals without a bag and in others with a plastic or a linen bag. Coloured bags for distinguishing between soiled and infected linen were noticed. One hospital was fitted with an incinerator chute; it was explained that there had been difficulties about fumes but the chute examined appeared to be working satisfactorily. We were told that chutes were washed from time to time, but generally the impression was that no great concern was felt about such things as noisy lids, transmission of noise and smells between floors, fire risks, protection of linen, cross-infection risks, etc.

19. Lifts. All the hospital lifts observed had end opening, sometimes at both ends (e.g. Aultman Hospital), and nobody commented on the advantages (if any) of side entrances. Not all lifts had double gates. The lifts are highly mechanized and move much faster by comparison with British lifts, but no discomfort was felt because of perfect automatic braking (although this could not be said of hotel lifts which are manually operated and levelled). In some designs an interrupted light beam prevents the lift doors from closing when a lift is being loaded, and the value of this was seen when one nurse on her own managed to call a lift and guide into it a bed containing a patient, but I was left wondering whether a pre-registered call from another floor would whisk the lift off in the wrong direction as soon as the lift gates closed. In several hospitals one noticed that the inside walls of the lift cages were protected from damage by trolleys by suspended ceiling-to-floor plastic covered pads which hung loose and were not unattractive in appearance.

20. There was general agreement that lifts should be grouped in banks and one heard frequent warnings of the consequences of providing too few. Special problems arose in very high buildings, both traffic and constructional. At Grace-New Haven Hospital some lifts are reserved for patients and staff only, and at another hospital notices explained that the lift operator could ignore lift call signals in the interests of patients. Also, at Huntcrdon Medical Center, lifts are reserved for (a) patients and staff, and (b) services. At Bethesda one lift was reserved for bulk food service. In the new 92-bed psychiatric unit at St. Vincent's Hospital (a separate building of six floors) the lifts are fitted with a fixed control to stop the lift and open the gates automatically at a "protected area" level so that patients attempting to leave the building would be observed before reaching a lower "unprotected" area.

21. Johns Hopkins Hospital recommended that consideration be given to installing escalators in lieu of some lifts; escalators take more space but carry more passengers and without waiting; but it would be essential to have some lifts as well. (N.B. The Palo Alto Hospital opened one year ago has found escalators a great success). Everybody has come to rely upon lifts, and in consequence the stairs are now regarded solely as a fire escape, to such an extent that in some instances no attempt is been made to make them look attractive and they are left without any special finish to the plain building materials. In contrast to an otherwise clean hospital, an empty pop bottle and cigarette ends were seen on the stairs (Bethesda),

22. It may be of interest to refer to lifts of the most advanced design seen in a new multi-storey hotel. In each bank of lifts two were reserved for the first five floors and four reserved for the remaining floors (these by-passed floors 2 to 5). The latter lifts are normally working under the push button "storage" control of the passengers, but when there is peak traffic a women operator worked all these lifts from a ground floor wall panel near the lift entrances. With the assistance of the tell-tale light panel she was able to control every movement of each lift, speak to passengers in the lifts, and advise ground floor waiting passengers which lift would arrive next, thus saving both passengers' time and lift journeys.

23. Call systems. No pocket-receiver type of call system was seen. Those used are either sound or light systems, or a combination of both. With the sound system, large numbers of loudspeakers are installed at fairly close intervals, and this made it possible to keep the volume output of each speaker quite low. Most hospitals had two-way patient-nurse communication, and on more than one occasion the point was made that a telephone receiver (instead of a loudspeaker) at the nursing station prevented the patient's request from being overheard.

24. Wards. Some 4-bed wardswere seen (e.g. Massachusetts General Hospital and Aultman Hospital) but single and double bed rooms are more common, probably because Blue Cross pays for accommodation in such wards. The new children's unit at Johns Hopkins Hospital is planned with two cots on each ward so that one cot could be replaced by a bed to allow a parent to room-in.

The single bed private rooms at Aultman Hospital are large enough to take 2 beds in an emergency; and every nursing unit has a class room used for discussion (and for mothers meetings in the obstetric ward), these rooms being equipped with overbed fittings so as to be converted into patients' rooms in the emergency. All rooms are of standard size. The 20 rooms set aside for the isolation of infectious cases are very plain and bare to facilitate subsequent disinfection.

25. Recovery ward. The recovery ward at Massachusetts General Hospital measured some 40' x 40' and took up to 20 patients. The staff on duty were all nurses, although until I made the enquiry I had the impression that some might be doctors. We wore gowns and over-shoes to enter this ward, but it seems inconsistent with such standards of hygiene that the ward should have flowers and curtains. The term "recovery ward" means what it says - a room where all immediate post-operative patients stay until recovered from the anaesthetic, which usually means up to 3 or 4 hours but could be longer. At St. Vincent's Hospital the average length of stay until "self-sustaining" was said to be 90 minutes, but here only six beds areavailable and the patients are all transferred to intensive-care beds in the wards. But at

Johns Hopkins Hospital there were recovery rooms for each theatre and patients could stay up to four days, if need be.

26. In the recovery room at Aultman Hospital there are 24 "carts" with side rails, but some patients, e.g. those with head injuries, are placed in beds. The carts or beds are in a row, backing on to a wall fitted with blood pressure apparatus and oxygen and suction outlets at short intervals. An emergency gas machine was kept available. The day staff was 1 senior nurse, 4 graduate nurses and 10 student nurses, and at nights, 1 senior nurse, 1 graduate nurse and 1 aide. At the time of our visit there were 7 patients and 12 staff to be seen in the recovery room.

27. Labour ward. Four labour wards are provided at Aultman Hospital, and each can take two patients if need be. If the Doctor agrees, the husband can stay in the labour room to give support to the mother. We were told that the mother remains in the delivery room for two hours after the birth of the baby, and that the average stay in hospital is 5 days. The hospital has 72 bassinets, i.e. 6 nurseries with 12 bassinets in each. There are some 3,600 to 4,000 deliveries a year, and a camera is permanently available to photograph new-born babies as a means of identification (and of profit). The supervisor in charge is assisted by 5 head nurses. Contagious cases are isolated on the 6th floor, and there are 3 cubicles for the isolation of patients who it is thought might be contagious; these babies are nursed by the floor staff (not the nursery staff) and the mother has the baby only for feeding. Nobody is allowed in the nursery, even though gowned. (N.B. The midwife is known as an obstetric nurse, and the term midwife describes a registered nurse who has had a course in delivering babies, there being a few such persons in outlying districts).

28. Premature baby unit. At Aultman Hospital the unit can take 16 premature babies, and the unit can be used also for babies needing intensive care. The unit is very expensive to run because the demand fluctuates and normally there are only a few babies in it, apart from which it requires very special nursing. There has been a noticeable increase in the number of premature births and it is thought that a contributing factor may be that mothers work longer into pregnancy.

29. Psychiatric Wards. It may be of interest to note that the 4-bedded wards at Grace-New Haven Hospital are occupied to "100% capacity", the average length of stay being 30 days. At Aultman Hospital there were 40 2-bed wards on the 6th floor (and for this reason the doors were locked) and one whole-time occupational therapist was stout-heartedly doing her best to provide the patients with some interest; here the average length of stay was two weeks and no patients stayed longer than 3 weeks. The ward doors had inspection panels. The new psychiatric department at St. Vincent's Hospiatl has 92 beds, 75% of which are single-bed wards, and the largest wards have 4 beds; this building is decorated and furnished most attractively, with red washable plastic on walls; a one-way mirror was fitted on the children's unit, and one way observation in the patients lounges; the slab floor had a "3" fill and finish" to reduce noise.

30. Behavior Room. This was seen at Massachusetts General Hospital, and contained a rather worn leather easy chair of domestic type to which was strapped, by adhesive tape, the leads of the electroencephalographic machine in the next room. The patient was left alone in this rather untidy room and observed through one-way vision screens. To the layman it seemed that it must be very frightening to a patient, and one wondered whether the conditions were likely to produce a settled frame of mind so essential to a proper assessment of the patient's condition.

31. Ward fittings. In the most recently built wards at Grace-New Haven Hospital the w.c., toilet basin and cupboards, fitted with sliding doors, were contained in one pre-formed metal unit with stainless steel surfaces, and this unit was built into the ward structure.

32. The ward fittings were always of high standard, notwithstanding variations in types and designs, but otherwise call for no special comments. The preference is for metal furniture. High-lowand mechanically operated beds were seen. The head and foot ends of metal beds were usually of square section, with a concealed opening at each corner of the bed to allow supporting bars (for apparatus) to be inserted into the bed frame. The common practice is to provide each newly admitted patient with his own stainless steel bed-pan, urinal and kidney dish, which are terminally sterilized before re-issue

to the next patient. At one hospital each ward was fitted with an autoclave although a C.S.S.D. Service was provided; New York Hospital is proposing to provide each ward with a high-speed autoclave. At Aultman Hospital no sterilizers are provided in the wards.

33. Curtains are mostly cotton, but some of plastic and other fabrics (such as heavy twill) were seen, but no glass fibre curtains. With ceiling recessed track, which was very common, the upper part of the curtain might be of net to allow the transmission of light. In one hospital the track had been screwed to the ceiling although the ward ceiling was very high; this not only meant that the curtains are very long and heavy but that steps were required in order to clean the track.

34. The babies ward in one hospital (New York Hospital) was divided by glass screens into sections each containing 4 cots, and on the discharge of the babies from that section the section was "sterilized" by ultra-violet lamps built-in as part of the structure. This method made it necessary to include curtains to each section so that the patients in other sections could be shielded from the ultra-violet light.

35. In the rehabilitation department at Massachusetts General Hospital it was noticed that particular attention had been given to toilets and showers to enable patients to help themselves.

36. Out-Patient and Casualty Department. Only a few out-patient departments were visited and those seen were not large. At New York Hospital a patient would be seen in 20 to 30 minutes first visit; subsequent visits would be by appointment and might occupy 2 or 3 hours.

37. Special mention was made of the distributing or screening clinic for "walk-in" patients at St. Vincent's Hospital. This was staffed by interns who provided minor treatments or directed patients to suitable clinics or for admission. These patients were accepted by the hospital regardless of their ability to pay - it was said that 99% wanted to pay.

38. At Aultman Hospital the O.P. Department was not very active. Certain clinics are arranged by charity welfare organizations and these give help to charity patients; there is also a nurses' clinic; and private clinics for G.P. doctors on the staff to bring in patients. The emergency room has some 60 cases a day, and these patients were seen first by an Intern. At all times there is an Intern on duty, and a Resident always available. A supply of candy lollipops is kept for children, also coloured plaster. The admitting staff do not question the General Practitioners' application.

39. Ambulance Services. In Canton, Ohio, all ambulances (about 20 to 25 of them) are privately owned and can be called on hire by anybody. The owners have arranged a 24-hour call system. Extremes of climate make it necessary to provide protection to ambulance reception areas (as well as to stores unloading bays).

40. Operating theatres. Because of the strict rule that only those suitably dressed could enter operating theatres few could be seen, although occasional glimpses could be obtained from doorways. The impression was that they were a shade smaller than the usual 20' x 20' (for example Johns Hopkins Hospital and Aultman Hospital), and rather surprisingly the American comment was that future theatres would be much larger because of the need to accommodate more staff and more surgical apparatus.

41. Wall finishes were of various materials - tiles, plaster, laminated plastic sheet, - and usually grey or green in colour.

42. We we e admitted into the external viewing gallery of an operating theatre at Johns Hopkins Hospital during the progress of an open-heart operation. There were 12 people in the theatre and much space was taken up by apparatus. Around the inside wall of the ceiling viewing gallery window is a continuous horizontal rail which was found most convenient for hooking-up apparatus - a simple but effective idea. At this hospital the theatre floor has a service floor immediately above it, and drugs and dressings are held here in a special store and supplied to the theatres by dumb waiter.

43. The new operating theatres under construction at Bethesda are contained in a circular-shaped building. This has a corridor against the external wall and an internal corridor, and between these corridors on each floor level the space is divided into segments, with two operating theatres (opposite each other), two anaesthetic rooms (opposite each other), and other rooms. The central core of this building houses all the service pipes, ducts, etc., and, in particular, all the multiplicity of circuit connections for the vast array of intricate research and recording apparatus that will be required in future.

44. The 8 operating theatre suites and 2 cystoscopy room at Aultman Hospital are in the charge of a Nurse Supervisor. For T and A cases there is an admission room where the pre-operation procedures and tests are carried out; and patients, after passing through the theatre and recovery room, are returned to this admission room into the care of the mother to await discharge. Tonsillectomy cases are admitted and discharged the same day (12 hours), and only about one patient a month stays longer.

45. X-Ray. In New York Hospital, the X-Ray Department has some 40 machines dealing with 23,000 films a month, the Kodak automatic processing unit finishing some 1000 films a day. A 24-hour service is provided. The films are kept for five years. The pneumatic tube system is used for the dispatch of films.

46. At Lankenau Hospital the modern Kodak X-omat processes a film in 70 seconds; this unit requires cleaning once a week (one hour) and special cleaning once a month (two hours). An older type of unit at Bethesda Hospital took 7 mins. to process a film. All hospitals are now using automatic processing equipment.
The practice at Bethesda Hospital is keep all films - no microfilming.

47. At St. Vincent's Hospital we were shown a special apparatus developed by the hospital to reproduce on the X-ray film a series of dots automatically originated by the istope radiations; thus relating the istope count to the actual X-ray film. The procedure was similar to the line-by-line printing of a typewriter.

48. Laboratories. Whenever the question was raised it was stated that the demand for laboratory tests was increasing and in consequence the space allocated to laboratories, although sometimes generous by comparison with some British hospitals, was regarded as inadequate. The equipment is of high standard and automation is used extensively. For example, in New York Hospital, a group of 4 or 5 automatic analysis machines were seen, each being confined to a particular test.

49. In the new laboratories at Grace-New Haven Hospital the benching is faced with laminated plastic and the working tops are of Eternit ("Colourlith"). The Laboratories are well lit by continuous fluorescent tube lighting in rows of double "eggcrates" each with two tubes, making the lighting surface 4 tubes wide.

50. Because of the research activities at Bethesda, for every square foot of hospital space there are two square feet of laboratory space. These laboratories are all of standard size, 12 ft. by 20 ft., and are planned on a 12 ft. module with central supply of piped sterile solutions, etc. Some 18,000/20,000 chemical analyses are made each month by auto-analysis with special instrumentation for counting red cells (at the rate of 50,000 in 15 seconds). In the corridors between the laboratories, chain-pull overhead showers are fitted every 12 yards for emergency first aid to persons splashed with acids, etc. In this same hospital was a special department for washing laboratory apparatus, including a very large continuous procedure equipment (Metalwash Machinery Corporation, Elizabeth 4, N.J.) and other special machines justified by the volume of work.

51. The laboratories at Aultman Hospital are based on $12\frac{1}{2}$ sq.ft. per bed, but more space was being provided, and yet more required. The staff consists of 5 specialists with Master's degree, 17 technicologists (passed examinations) and 5 technicians (not yet passed examinations). Here, as in other hospitals, dictating machines were available.

52. Central Sterile Service Department. All the hospital visited had C.S.S. Departments and there is no doubt that the trend is towards increased centralization in this respect. The departments seen differed considerably in standards, size, equipment, procedures and the items dealt with, and were not generally speaking, good examples of layout. Here again one felt that they had got on with the job and were prepared to learn by experience.

53. The large department at St. Vincent's Hospital provided a 24-hour service and maintained the ward stocks at predetermined levels; the same at Johns Hopkins Hospital, where the department covered some 6,000 sq.ft. and had 80 employees working a 40-hour week (approximately 27 to 30 staff are on day duty, 8 to 12 on evening duty, and 5 at night). The Department at Aultman Hospital covered 2,250 sq.ft.

54. In the most developed departments (e.g. at St. Vincent's Hospital) a great variety of standard packages are prepared with the assistance of pictorial diagrams, the package being identified by description pencilled on to the wrapper (a marking which will wash out in the laundering process), or, in one instance, by attaching to the package a stencilled list of contents on a piece of paper which would withstand autoclaving (Bethesda). The pictorial diagrams at Johns Hopkins Hospital numbered over 50 different packages and more were being added. The contents of packages differed in types of materials, i.e. different kinds of dressings materials, metal instruments and bowls, foil containers, glass syringes, etc. and therefore called for a great understanding of sterilizing procedures, air displacement, steam penetration, etc. The most common wrapping was a double layer of balloon cloth or similar material, but sometimes only a single layer. Paper was not widely used in the departments visited and appeared to be confined to particular packs (e.g. Johns Hopkins Hospital). Different hospitals regarded the packages as remaining sterile for different periods - from 2 days to 2 weeks (e.g. 2 weeks at Johns Hopkins Hospital, where the outer wrapping was intended to form the sterile field). At one hospital a few metal drums were still in use. At Bethesda Center the packages were distributed by dumb waiter.

55. Not all the sterilizers seen were of the high-speed high-vacuum type, but generally speaking the equipment was very good, and, as at the Hunterdon Medical Centre (Wilmot Castle Co. recording sterilizers) well positioned and installed. At Bethesda Center an ethylene oxide "Cry-o-therm" sterilizer (American Sterilizer Co.) was noticed and I was told that it had been found satisfactory and more were being obtained; and at Johns Hopkins Hospital the problems of gas sterilization are being closely studied, with particular attention to the recovery of the gas.

56. Ultra-sonic cleaners were noticed, but, for reasons not explained, their effectiveness was questioned by more than one hospital.

57. At Aultman Hospital the ward thermometers are returned to the C.S.S.D. to be "shaken down" by machine and then sterilized before re-issue; and at this hospital the Delivery Room is excluded from the C.S.S.D. because its demand and work fluctuate and the preparation of dressings is a "time filler" for the staff of the Delivery Room. On the other hand, the C.S.S.D. is responsible for bedrails, oxygen tents, etc. But rubber gloves are washed in the laundry (as one would deal with linen) and the testing and powdering are also done in the laundry. The C.S.S.D. is in the charge of a Head Nurse responsible to a Nursing Department which is under the control of a member (male) of the administrative staff.

58. Disposable items. Contrary to what I had expected, as far as could be seen disposable items are used only in a small way (e.g. St. Vincent's Hospital), and this seemed to be owing to questions of cost rather than any other factors. One was not sure whether the use of disposable items as a means of reducing the risks of cross-infection was receiving sufficient attention. Among the items observed were (a) disposable needles (Grace-New Haven Hospital), (b) disposable syringes, e.g. 2 cc. and 5 cc. at Grace-New Haven Hospital and 2 cc. at New York Hospital, (c) paper lining for bins (St. Vincent's Hospital and Hunterdon Medical Center), (d) plastic bags for soiled linen (Bethesda), (e) a roll of paper sheeting held in a drawer under the head rest of the special examination couches at

Johns Hopkins Hospital, (f) paper slippers (only in one hospital), (g) paper face masks (Aultman Hospital), (h) medicine cups (Massachusetts General Hospital), (i) disposable drug-loaded syringes - ampins? (Aultman Hospital). Paper towels and bags were seen more generally. Paper sheets were available t Aultman Hospital for use in special circumstances, e.g. a disaster. In the basement of Johns Hopkins Hospital a large specially-designed cleaner's trolley was seen, from which was suspended a large disposable plastic sack loaded with rubbish such as waste paper and cartons.

59. Pharmacy. There is little more to be said than that the departments appeared to be smaller then one expected and were well equipped. It is understood that in some hospitals all the drugs supplied to any in-patient are charged to his account whereas other hospitals regard certain drugs as "floor items" included in the basic hospital charge; and St. Vincent's Hospital rather emphasized the fact that they provided some 150 drugs as "floor items" without charge. At Aultman Hospital the basic room charge included elementary drugs and dressings; the charges for other items were costed but were "levelled off" to some extent because some costs would be too high, and as far as possible the drugs bills were organized on a non-profit basis.

60. In more than one hospital there was a typewriter reserved and loaded with a continuous perforated roll of gummed strips for the typing of labels for the less commonly used drugs (printed labels were, of course, used for other items).

61. Catering. In some hospitals the meals were "plated" in the wards (e.g. New York Hospital) and in other the meals on trays were dispatched to the wards by dumb waiter or by loaded trolley. Therewas a choice of menu, but the patient could sometimes order something different (Aultman Hospital). From what we were told, no food is handled by nurses - always by the staff of the catering or dietary department.

62. Johns Hopkins Hospital isabout to change over from a ward tray service to a central tray service with selective menus. Special diets, representing about half of the patients' meals, would be included (N.B. special diets represented only 1/3rd of the diets at St. Vincent's Hospital). The new kitchens will be on basement level with storage, vegetable preparation and cold service below. There will be 3 identical loading belts, but the children's wards will be served from carts delivered by automatic dumb waiters and plates would be kept in a "Lowerator" at 75°F. With the help of blind patients, tests (with exactly similar menus, ingredients, cooking and portions) had shown that 90% or more preferred food kept hot by the dri-heat system although they did not know various systems were under trial. The dri-heat system has been found to be more economical. The new scheme would reduce space and equipment, but not necessarily staff, and further savings would be achieved because hot water and other services in the wards would not be so elaborate or require the same maintenance attention. One lift would handle the requirements of 15 storeys. Whether or not the pellet would be removed at the time of service would depend upon experiments.

63. Johns Hopkins Hospital had no food contracts and preferred negotiated buying, but it may be mentioned that the kitchen organization is unusal in that there is a Food Production Manager parallel with the Head Dietitian.

64. It is recalled that at one hospital only electricity is used, but others made use of two sources of heat, usually gas and electricity. The kitchens varied in size, but equipment was good in quality, quantity and variety. At St. Vincent's Hospital a two-level counter of stainless steel was a simple way of facilitating the loading of trolleys. Another feature of main kitchens was the double-ended cold rooms in which to store loaded trolleys containing either prepared cold items ready for tray service, or prepared vegetables, meat, etc., ready for cooking later or the next day. All kitchens were kept scrupulously clean and tidy, and were well lit. As an example of finishes (Bethesda Center): 6" square buff quarry tiles for flooring, 6" square high-glazed yellow wall tiles from floor to ceiling, and white acoustic tiles to the ceiling.

65. Staff leaving the cafeteria at Aultman Hospital are expected to deposit disposable paper waste into a receptacle, and to place the tray on to a moving belt which carries it along until it meets a vertical conveyor (a sort of continuously moving dumb waiter) to take it to central wash-up, the whole procedure being automatically controlled to avoid overloading.

66. Laundry. Because they are independent units nearly all hospitals have their own laundries, although it may be supposed that many are too small to be economical by comparison with group laundries. All that were seen were well equipped. At Grace-New Haven Hospital, which deals with some 10 to 11 tons of work a day, the sorted work is fed into hoppers immediately above the washers on the floor below, each hopper taking 350 lb., the exact loading for its washer. The side of the washer (American Laundry Machine Corporation) opens outwards (mechanically) to receive its load direct from the hopper above, and the whole operation of the washing procedure, including piped soap solutions, is automatically controlled. The washing procedure can be varied by changing the control plate, which takes but a few seconds. The high speed calender dealt with 720 sheets per hour, the partially folding sheets (the foldsall in one direction) being completed by hand (twice folded in a different direction) and placed on a moving belt which conveyed them to the packing department. The linen is distributed to the wards by laundry carts each containing an assortment of articles; these carts are exchanged daily (a similar system was seen at Bethesda and other hospitals). This hospital has found that by using coloured sheets these were changed less frequently by the ward sisters.

67. The laundry at Aultman Hospital is another example of two-storey planning, and of excellent equipment. The American Laundry Machine Corporation calender, with "Trumatic" automatic folding device, was moving at very fast speed, with 2 operators feeding and 1 receiving, and the Smith Grantham gas-heated tumbler, which was larger than any previously seen, was said to be very efficient. Working tops were covered in laminated plastic. The laundry was using a heat-sealed marking system, and small repairs were made by heat-fixed patches. The laundry staff included three seamstresses, but there was now less "making-up" than previously. A daily-exchange clean-linen trolley service was instituted, but it became necessary to revert to a requisitioning system because there was no room to store the trolleys in the wards. The estimated linen losses are $15,000 per annum.

68. All uniform at Aultman Hospital is all-white with buttoned front, except for coloured collars and cuffs to indicate different categories of employment. The uniform for 600 non-professional staff is supplied and laundered free of charge. For nurses, 11 different sizes are stocked and hems varied as required; this uniform is then marked to individuals.

69. Some hospitals were changing to cotton blankets of the cellular type but most were still using wool. At Aultman Hospital the clean blankets are wrapped in cellophane. Most of the ward soiled-linen trolleys are in the form of a wheeled frame supporting a cotton or canvas container, but paper and plastic bags are also used.

70. Nurses' Homes. In the nurses' home at Massachusetts General Hospital, the bedrooms were divided into groups of four (approximately 12' x 10') bedrooms, each group leading off its own internal corridor which carried a toilet and washbasin at one end and a bathroom and w.b. at the other, with a central bank of lockers backing onto the main corridor. It was said that the purpose of the internal corridor was to act as a noise barrier, but it seemed very wasteful of space. In at least two nurses' homes one noticed a bank of small personal mail boxes, each secured by a combination locked. Generally speaking the nurses' rooms were comfortably furnished, and the sharing of rooms was quite common.

71. The lounges in the nurses' home at Aultman Hospital incorporate a small well equipped open kitchen for the staff to make hot drinks and snacks. A portable stand hair-drier was noticed. Two "beau rooms" were not in great demand; having captured a boy friend it was felt that there might be some risk of losing him if he was "dated" in the "beau room" where he might meet other nurses.

72. Auditoriums. At Lankenau Hospital and Bethesda Center are examples of auditoriums or lecture theatres so well appointed that it becomes difficult to accept them as a functional part of an acute hospital. At the latter hospital one goes through a magnificient and spacious entrance hall with marble floors and walls, and passes a comfortable furnished lounge and a bank of lifts (faced in satin finish stainless steel?) to reach the large auditorium with its sloping floor, tip-up seats, cork flooring, large stage, cinema screen, mechanically operated curtains, dimming lights, etc., and this auditorium is quite separate from that provided for patients' entertainment (films, plays, etc.). It was in this theatre that we were shown on projected T.V. an impulse recording of our arrival at this hospital some fifteen minutes or so earlier, and, later, a colour-T.V. recording of features of the hospital work.

73. Medical records and reports.

In New York Hospital the medical records department is open 24 hours a day every day of the week, and for the dictation of notes a bank of 19 dictation-recording machines is installed. But in many hospitals hand written notes were to be seen. It seems a common practice to use terminal digit filing (e.g.St. Vincent's Hospital), and at New York Hospital a telephone request for medical records is directed to the sectional clerk by dialing the terminal digit. At one hospital there is at the moment no intention to destroy any notes, but another discards records not brought forward for 20 years, Some hospitals use microfilming, perhaps not for 3 years (New York Hospital) or until after 7 or 8 years (St. Vincent's Hospital). At this latter hospital, as well as in some other hospitals, the micro-film reader incorporates a Thermofax photographic reproduction unit so that readable copies can be obtained very quickly. Here, also, it was stated that 14% saving in filing space had been obtained by filing records vertically, resting on the bound edge and with the bottom edges facing to the front. Several hospitals had installed a "Simplafind" power-operated multiple wheel card index for the patients index, and most, if not all, of them prepared a metal plate or stencil for reproducing the essential data on forms. Once the stencil had been used to prepare admission records and initial forms it (or perhaps a duplicate) was sent to the ward, and each ward would then use its own hand-operated machine to print the data on ward forms as required.

74. So far as laboratory and other report forms were concerned, it was noted that there was a general preference for using carbon processes for reproducing multiple copies, and that photography was not used for this purpose.

75. At Aultman Hospital four or five typists are employed on a night shift (11 p.m. to 7 a.m.) every day of the week, typing medical records and letters from dictation received by telephone and recorded on a bank of 6 dictation-recording machines, so that each day's work was completed before the next day.

76. Nursing care. At Grace-New Haven Hospital the nursing care was expressed as 3.5 hours of bedside nursing care per patient, and at Hunterdon Medical Center as 4.2 hours. The average length of stay is short when compared with British experience, e.g. 7.3 days at Hunterdon Medical Center, 10.3 days at Johns Hopkins Hospital. The number of beds per floor unit differed between hospitals, but was always large, for example 64 beds (Lankenau Hospital), 2 x 33 (Johns Hopkins Hospital) and 2 x 26 (Bethesda - all double rooms), 2 x 32 (Grace-New Haven Hospital), 48 (Grace-New Haven Hospital - 11 x 4 bedrooms + 4 single). At Bethesda Hospital the patients come from all parts of U.S.A. and are selected for their suitability in relation to current research, and it was strongly emphazized that every attention is given to the care and comfort of the patients.

77. It would require a long stay in U.S.A. and close study of many figures similar to the above before one could attempt to form a reasonable assessment of nursing care in U.S.A. hospitals. However, as a result of this brief tour one is left with the impression that the number of staff, especially fully trained staff, is less then one would expect, having regard to the large proportion of single and double rooms; also, that the bedside services tend to be sectionalized and provided by a range of persons, with the trained nursing staff dealing with clinical matters in

a rather scientific manner, so that the American patient may not have the same link of understanding and sympathy between himself and the hospital which is provided by the continuity of the bed-side nursing in Britain.

78. Nursing staff. At Aultman Hospital 250 students are in training on a three year course. Students are expected to pay for the training, but can be assisted, and in suitable circumstances, e.g. if certain qualifications were held, the fees might be waived altogether. The payment of fees was not a bar to training, and sometimes brilliant students were fostered by clubs and other organizations. About one out of every three applicants was accepted as a student. Students worked a 44 hour week. Trained nurses worked a 40 hour week and started at $300 a month, but increases were not automatic. An inter-service instructor was responsible for the two-month courses for nurse assistants, nurse aides and orderlies.

79. In all hospitals one noticed the large number of volunteers who undertook a variety of duties and one wondered how the hospitals would manage without such help; at Aultman Hospital there were 700 volunteers, of which 200 were teenagers.

80. One hospital explained that it was necessary to provide the nursing station with a screen to hide nurses while writing their notes, etc., because if too many were seen together at a time the patients would not believe there was a shortage of staff.

81. Medical staffing. At Hunterdon Medical Center all patients are admitted into hospital in charge of general practitioners, but nineteen full-time specialists are employed by the hospital and are available to advise the general practitioners. All these specialists spend one day a week teaching at local universities. General practitioners take care of their own indigent patients.

82. At Aultman Hospital the Medical Staff have a Document of Organization and Byelaws. The clinical departments of surgery, medicine, obstetrics and general practice each have a committee with its own chairman. The medical staff are classified as (a) active staff (about 100) consisting of Junior or Associate staff of 2 years' standing, Attending staff of 6 years' standing and Senior Attending staff, (b) Courtesy staff (about 200) being doctors on other hospital staff lists who may wish to admit patients into Aultman Hospital, (c) Consulting staff, who may be called in occasionally, say once or twice a year, and (d) Honorary staff (over 65 years of age). The Medical Policy Committee meets once a month. The Chief Administrative Officer (called Executive Director) is secretary to all Committees except clinical committees. In the event of unprofessional behavior, etc., a member of the staff is not reappointed, or is dismissed, by the Credentials Committee, and if such a person seeks re-instatement by legal process the Court would merely wish to be satisfied that the procedures were correct and would not substitute its own judgment.

83. Pathologists and Radiologists are on the hospital's payroll. Medical fees are a question between doctor and patient, and are set largely by competition between doctor and doctor. Maternity fee is usually $75. The fee for first consultation may be of the order of $10. To guide the patient as to the likely hospital bill for his stay in hospital, including extras, the doctor takes the daily room charge of about $30 and multiplies it by two and by the expected number of in-patient days. About 70% of patients have hospital assurance.

84. Health Education. An outstanding feature of the services of Lankenau Hospital is the attention given to the education of the general public in health matters. A section of the hospital building has been set aside to form a Health Museum containing diagrams, three-dimensional large scale models, etc., so that those visiting it (so far, 60,000 people) may come to know more about the human body, its care and functions. Special booklets and leaflets are prepared for young and old, and on subjects such as road accidents, alcoholism, etc. Within the auditorium is a rotating platform carrying a life size model of a woman made of clear plastic, with organs, major nerves, arteries, etc. incorporated in coloured material; the platform is made to rotate, and parts of the model are illuminated, in co-ordination with a recorded lecture on the subject of the human body, and the value of this for educational purposes was clearly demonstrated to us.

85. At this same hospital we were shown laboratories with special facilities for research, including rooms designed for studying the reaction of volunteers (some of whom were paid) to heat and humidity changes. A special point of interest was the elaborate and expensive recording apparatus associated with the study, which, amongst other things, automatically recorded 40 separate lines of data at 45 seconds intervals.

86. Security Officers. All hospitals employed numbers of security officers in distinctive uniforms rather similar to police uniform, and indeed some were members of local police forces. Their duties included the right to search, and a blatant notice to this effect was posted on the gates of Pennsylvania Hospital, where officers were seen on duty in the grounds of the hospital making enquiries of visitors arriving by car.

87. Costs. It would require much more enquiry and study before one could make worth while comments on the running costs of American hospitals, and comparisons and determination of standards are difficult. The British visitor is apt mentally to convert dollars into £s. and think the answers high; for example, say £10 a day for the basic hospital charge to the in-patient. But it was noted that one American hospital administrator who had had fairly wide experience of living in the U.K. mentally converted £.s.d. to dollars and multiplied by three to relate the answer to American standards of living.

88. There is no doubt that the payment of a large bill for hospital charges and professional fees could present a serious problem to the majority of citizens, sometimes amounting to a domestic catastrophe. We were told that it was possible for such a bill to amount to $600 in one week, and that sometimes a patient found that the combined benefits from two insurance schemes were insufficient to meet the debt.

89. At Lankenau Hospital, for example, the present charge was $27.50 a day for the best single-bedroom, and $13.50 per day for a bed in a 4 bed ward (accommodation in two and three bed wards was pro-rata). A check-up (which was very popular) involving two visits cost $75, plus charges for extras, plus specialists' fees.

90. With such high charges the in-patient is the more anxious to leave hospital early, which is the main reason why the average length of stay is so short (e.g. 7.3 days), but with the shorter length of stay the volume of materials consumed per occupied bed-day increases and turnover-intervals absorb more empty-bed-days and so tend to increase patient costs.

91. In Johns Hopkins Hospital about one third of the patients had their bills paid by Blue Cross (but it is understood that Blue Cross do not always accept all the items included the hospital account); about 25% of the patients were needy and for these the State paid half of the cost.

92. About 3% to 5% of admissions into Aultman Hospital are charity patients. The city of Canton has no "free charity hospital" and the public health authority pays the full cost of the indigent sick sent by them to the Aultman Hospital. In this comparatively small city the situations are well known and relationships between local authority, hospitals, etc., are very friendly. Of the population of 110,000 only 6% were coloured people (c.f. 60% in Washington D.C.). Voluntary collections are made for the "Community Chest". Persons with $110 or more a month must pay bills without public health help, but they may be helped by charities such as United Fund.

93. Salaries and wages made up much the same proportion of total cost as in Britain. In St. Vincent's Hospital some 50 to 55 Sisters of a religious order are fully qualified and experienced to hold key positions, and as a result only about 17% of the hospital's expenditure is in respect of salaries and wages.

94. Standards of Cleanliness.

All the hospitals visited maintained high standards of cleanliness in all departments, except for some parts of the older buildings, particularly those overcrowded with equipment. Most of the hospitals were new, or

fairly new, and in good structural repair, but the choice of finishing materials no doubt contributed a great deal to the easing of the cleaning tasks. As far as could be gathered, it is usual to have a single department responsible for the general cleaning services, with a departmental chief or Executive Housekeeper (woman) responsible to the Chief Administrative Officer. We were told that in the last five years or so the Executive Housekeeper has gained improved status, and that "Floor maids" are now called "Floor Housekeepers". The supervisor does herself do some cleaning work in addition to supervising others; the Executive Housekeeper at Aultman Hospital has three supervisors working under her. (There was a general difficulty in obtaining people to do "foremen's" work in all spheres, but not to obatain people for senior staff appointments). Wherever we went it was pleasing to note that all employees take a great personal pride in their appearance and cleanliness and one was impressed by clean, neat and tidy uniform.

95. The appearance of some ward areas, corridors and departments was spoilt by a great variety of notices, often stuck up by adhesive tape, and where the standards of cleanliness were not so good the notices also were dirty and marked with comments. The wall of a nurses' station was covered with a 100 or so picture postcards untidily stuck up with tape.

96. Other points of interest.

(a) Piped oxygen is a standard facility. At St. Vincent's Hospital it was explained that the oxygen was delivered to the hospital by pipe from a tanker (similar to fuel oil) and stored in a large bank of cylinders (of the usual type) held in a vertical position in a large metal frame.

(b) Visiting in the paediatric department is permitted at all times, although sometimes the doctors request the parents not to do so.

(c) Large low windows in a children's ward.

(d) Double glazed windows with draw blind enclosed between the two sheets of glass.

(e) Private out-patients are seen by appointment for consultations in the new Private Clinic just built at Johns Hopkins Hospital. The patients are escorted by nurses. The reception/waiting area is spacious, quiet, and comfortably furnished with carpets, easy chairs. The examination and consulting rooms are also spacious and well equipped, with wood and metal chairs vinyl covered, cubicle curtains of good quality material. The whole department is of excellent standard and it is clear that a great deal of thought has been given to the decor and every feature.

(f) The cobalt unit at Johns Hopkins Hospital has closed circuit T.V.

(g) Revolving altar at Bethesda Center; Catholic services are held daily and twice on Sundays, a Jewish service once a week on Friday morning and a Protestant service on Sunday morning; it is planned to relay these services to patients by T.V. The small chapel at Wooster Community Hospital was specially designed to suit various religious denominations.

(h) The arrangements for relatives to view deceased patients were inadequate in some hospitals.

(i) Staff at Aultman Hospital are paid for any suggestions they make which are adopted by the Hospital.

(j) Bethesda Center has Emergency Shelters built into the hospital structure.

(k) The incinerators at Aultman Hospital use gas for secondary combustion.

(l) In various places on each floor at Bethesda Center are engraved wall diagrams illustrating the floor plan to assist the stranger to find his way.

(m) An easily cleaned mortuary table at the St. Vincent's Hospital.

(n) Aluminium chairs - very light but noisy.

(o) Lankenau Hospital (347 beds) has car park for 800 cars - parking charge is 25 cents.

(p) Spaces for wheeled chairs are provided at Aultman Hospital in the form of bays recessed into the corridor wall, with the upper part of the bay fitted as a cupboard.

(q) In a number of hospitals staff time clocks were seen; it was said that only the senior staff do not clock in.

(r) At Bethesda Center. the physiotherapy department has much more space and equipment than would be found in most British hospitals, but hardly any patients were to be seen. The staff gratefully acknowledged the inspiration and help received from a study of British techniques.

(s) Card records for controlling the maintenance of all moveable equipment and machinery (Aultman Hospital).

(t) In general tap water was hard (25° Clark at one hospital) and noticeably chlorinated, and one would have thought that water softening would have been much more in evidence. Even so, ice-cold water in clean glasses for drinking was freely available everywhere, and in some hotels was on tap in the bedrooms. The wards have ice making machines.

(u) Well furnished medical library and reading rooms were provided, for example, at Massachusetts General Hospital and at Bethesda; at the latter hospital a translation service was also provided.

(v) The "Language Master" (McGraw-Hill & Co.)machine at Aultman Hospital is used for speech training. It is worked by small cards of standard size bearing a printed word or phrase (and perhaps a picture); they are selected and fed individually into the front of the machine to reproduce the recorded sound of the words printed on the cards.

(w) The hospital "hospitality shops" served light refreshments and are well patronized by patients and staff.

(x) Hot coffee, pastry, and coca-cola vending machines are to be seen; also the metal rack for the empty bottles.

(y) Figures quoted by Bethesda:-

	1900	1950	1970	
Population	76 m.	152 m.	205 m.	estimated
Over 50	13%	22%	25%	estimated

Massachusetts General Hospital, Boston, Massachusetts.

This is the third oldest voluntary teaching hospital in the U.S.A. It is associated with the Medical School of Harvard University. The bed capacity is 930, covering all specialties, and approximately half of these beds are for teaching purposes. The research departments cover pathology, bacteriology, chemistry, metabolism, medicine, surgery and X-ray. There is an excellent library and all these facilities are available to the medical students and nurses may also use the library.

A staff wives' association takes care of all foreign visitors to the hospital.

Expenditure on research amounted to over $4m. in 1959. The Hospital celebrates its 150th anniversary in 1961 and has launched an appeal campaign for $20m.

Grace-New Haven Community Hospital, New Haven, Connecticut.

The Grace-New Haven Community Hospital is a 652-bed, voluntary hospital which serves both as a general hospital for the New Haven area and as the primary teaching and research hospital for the Yale University School of Medicine. The new (1952) 326-bed Community Unit served as an architectural prototype of many double Y shaped buildings. The floor unit is made up of 30 to 32 beds (mostly single rooms) and 48 beds (mostly 4-bed rooms); it has 2 nursing stations (each with a ward secretary) and one kitchen. A day and night hospital for psychiatry has 23 beds.

The Yale University Course in Hospital Administration, in conjunction with the Department of Architecture at Yale, is conducting active research into hospital function and design.

The New York Hospital, New York City, New York.

By Royal Charter, granted on June 13, 1771, in the reign of King George III of England, The Society of the New York Hospital was formed and The New York Hospital was established. Since then The New York Hospital, a voluntary hospital which does not operate for profit, has grown in size and complexity. The professional staff includes upwards of 700 physicians. The total number of beds in the main Hospital is 1,207 (including bassinets and beds for psychiatry in the Payne Whitney Clinic). The addition of the beds for psychiatry at the Westchester Division brings the total up to 1,533. The number of patients admitted in a given year is about 31,000 and the total patient days, about 462,000. Upwards of some 44,000 persons make approximately 220,000 visits to the Outpatient Department. Approximately 76% of all patients cared for at The New York Hospital were unable to pay the full cost of their care.

The Hospital is operated by The Society of the New York Hospital through its Board of Governors composed of 26 members, including men and women, who serve without pay. This Board formulates policies and makes all final decisions. There are a number of important standing committees of the Board of Governors which deal with executive matters, finances, administrative affairs, staff appointments, and certain medical professional activities. The professional matters come to the Board of Governors chiefly through the Medical Board composed of the heads of the clinical departments and other medical representatives. Administrative matters are handled mainly through the Secretary-Treasurer of The Society when corporate action is involved, and through the Director of the Hospital for the management of the Hospital.

Goldwater Memorial Hospital, Welfare Island, New York City, New York.

This hospital was opened in 1939 as the first special hospital for chronic diseases in the country under the ownership and control of a municipality.

Mr. Jolly reports:-

"Goldwater Memorial Hospital is a city hospital and that was very obvious on entering. It possesses the atmosphere and appearance of the old Poor Law Infirmary. It is a chronic sick hospital of 1,338 beds and has official affiliation with Columbia University College of Physicians and Surgeons and New York University College of Medicine. It was stated that 244 beds were allocated to medical research and that the aim of the medical staff was "The restoration of function". From what I saw, the doctors were attempting a well nigh impossible task. "Every patient was diagnosed by every doctor".

A nursing unit was 90 beds divided into 8-bedded wards. One registered nurse and six practical nurses was the establishment for this Unit, but the number in post was well below the establishment. In the respiratory rehabilitation unit were 22 patients, men, women and children. The occupational therapy, workshop, physiotherapy and hydrotherapy were small departments.

Of the total number of patients, 360 were in what was known as "The Homestead". This corresponds to our Part III Accommodation. I came away with the impression that the staff were doing all they could under difficult circumstances and I felt very sorry for the patients."

St. Vincent's Hospital of the City of New York, New York City, New York.

St. Vincent's Hospital is an 830-bed voluntary, general hospital founded in 1849, owned and operated by the Sisters of Charity of New York. It is fully accredited, with comprehensive teaching and research program; affiliated with New York University-Bellevue Medical Center as well as seven universities for undergraduate and graduate training in medicine, hospital administration, nursing, social work, psychology, physical therapy, speech therapy, technology. Full-time directors of clinical divisions; 33 interns and 82 residents in ten specialties; large School of Nursing with 470 students.

Admissions 21,000 yearly with a high ratio of ward to private patients (50%); 95,000 visits yearly to 48 outpatient specialty clinics; active emergency room with 24-hour ambulance service, 30,000 treatments yearly.

A large scale 21 million dollar building and modernization program was completed in 1956.

Special features include a comprehensive short-term psychiatric service in a specially designed pavilion for 92 inpatients. The Hospital has closed circuit colour television from operating theatre to conference rooms.

Montefiore Hospital, New York City, New York.

Montefiore Hospital is a 650-bed, voluntary, philanthropic institution.

Mr. Jolly reports:-

"This hospital started in 1851 as a Home for Incurables, but has developed into a first-class general hospital with special emphasis on the care of the long term ill. Its three aims are patient care, education and research and has affiliations on a post-graduate and under-graduate level with the Faculty of Medicine of Columbia University. It provides a true geriatric service with the concept that when a member of a family is chronically ill, the whole family is ill. For this reason it began its Home Care Programme through insurance in 1947. A sidelight on this was the statement that 50% of bank loans were caused through illness. The philosophy of Dr. Silver, the Director of Social Medicine, appeared to be that of the Medical Rehabilitation Centre, Camden Road, London.

The patients receive definitive treatment and there is a half-way house and hostel, the aim being to discharge the patient home as soon as is possible. The hospital possesses an excellent radiotherapy department where they have cobalt, cesium, radium and conventional equipment. One machine I saw was a 36 million volt BETATRON for electron beam therapy.

There is a psychiatric unit which we could not visit, together with a day and night hospital. There is also a day clinic for patients to prepare them for hospitalisation. In this unit the patients have their own small laundry for personal laundry.

The medical and surgical wards are divided into single, double and 4-bedded rooms. The standard of equipment is excellent. The nursing unit in medicine is 38 beds and in surgery 30 beds. The establishment for these unit was 4 registered nurses, 6 practical nurses and 2 nursing aides, but staff in post was well under establishment."

Hunterdon Medical Center, Flemington, New Jersey.

Hunterdon Medical Center was established in 1953. It is a modern, 121-bed hospital offering university-level medical care to a rural population of 50,000 in northwest New Jersey. An experiment in rural medical care, it is affiliated with New York University-Bellevue Medical Center and has successfully integrated a 19-member full-time specialist staff and 22 general practitioners in the community. The Medical Center holds to a philosophy which establishes the family physician as the centre of good medical care in a rural community but which recognizes that the complexities of modern medicine require the family physician to be backed up by a specialist group.

Princeton Hospital, Princeton, New Jersey.

Princeton Hospital is a non-profit organization designed to serve the people of Princeton and surrounding areas. It is supervised in its operation by a Board of Trustees composed of representative citizens of the community who serve without pay. Incorporated in 1919, the hospital now has 196 beds, general and maternity.

In line with making the hospital a community health centre, the Medical Arts Building was constructed in 1953 and provides offices for a large number of the doctors on the hospital staff. Its location, adjacent to the hospital itself, brings doctors closer to its diagnostic facilities. This Center is, in fact, a series of consulting suites rented to local practitioners, profitable to the hospital and the doctors concerned.

The following points were noted: The hospital has free visiting all day every day; over 90% of income is from patients' charges; the average stay in the maternity unit is 3.8 days; there is a cafeteria for all grades of staff and patient feeding is on the dri-heat system. A beautiful house nearby contained 32 beds for long-term nursing at a basic weekly charge of $90-$125.

The Lankenau Hospital, Philadelphia, Pennsylvania.

A century ago a group of German settlers established a hospital especially, but not exclusively, to serve the large German citizenry of the area. In December 1953 the hospital moved to a new and functionally efficient structure in the Philadelphia suburbs which provided the inspiration for an advanced philosophy of modern hospital operation designed to promote "positive health". In addition to conventional patient care, emphasis is being placed on expanded research activities and education on both the professional and lay levels. The focal point for the education of the general public is the Health Museum which is believed to be the only one in this country forming an integral part of a general hospital.

In 1959 a medical science building of six storeys and 126 beds was added at a cost of $4.3 m.

This hospital now has 347 beds divided into nursing units of 32 beds, with wards of 1, 2, 3 and 4 beds. The average length of stay is 8.5 days. There are 11 operating rooms, a recovery room of 8 beds, and an ambulatory ward. Consulting rooms are rented to local practitioners.

The Johns Hopkins Hospital, Baltimore, Maryland.

The Johns Hopkins Hospital was established in 1867. It is a 1,000-bed acute general Hospital with an Outpatient Services Department accommodating approximately 1,300 patient visits each day. The casualty department was 8 overnight beds.

The Hospital is operated in affiliation with The Johns Hopkins University School of Medicine and School of Hygiene and Public Health, all of which are in the same or adjacent buildings.

Clinical Center of the National Institutes of Health, Bethesda, Maryland.

The Clinical Center of the National Institutes of Health in Bethesda, Maryland, was authorized by Congress in 1947. It was opened in 1953 "to provide valid clues for fundamental laboratory study, to enable scientists and clinicians to make baseline observations on normal individuals, and to accelerate the bridging of gaps between laboratory promise and medical fulfillment."

The Center serves patients participating in the clinical research studies of all seven of the Institutes, amd is one of the largest hospitals in the world devoted entirely to research. Approximately one-third of its space is devoted to hospital facilities for 516 inpatients, and service to several thousand other persons being followed on an outpatient basis. The other two-thirds of the building houses laboratories.

Patients are selected solely on the basis of having a form and a stage of illness specifically needed in a current study. They must be referred by their own physicians. The average patient stay is 40 days.

The building is remarkable for the range and spaciousness of the accommodation provided, the luxurious standard of finishes, and for the quality and completeness of its equipment. Some £60 m. were made available for the project.

St. Elizabeths Hospital Washington, D.C.

St. Elizabeths Hospital was founded by act of Congress in 1855 under the name of the "Government Hospital for the Insane". Its purpose, in the words of the bill, was to provide "the most humane care and enlightened curative treatment of the insane of the Army and Navy of the United States and of the District of Columbia". Various acts of Congress have since authorized the admission of patients from numerous other sources, and in 1916 when the name was changed to St. Elizabeths Hospital, the functions of the Hospital with respect to insane persons of the Army, Navy, and Coast Guard were abolished or transferred.

This Federal Mental Hospital has 7,400 beds. It is divided into four sections, each in charge of a Clinical Director. Over all is a Medical Director and Deputy.

1. Admission Unit (Visited)
   Two-thirds are direct admissions, one third from psychiatric departments of general hospitals. Average stay 4 months. Discharge rate 40% - 50%. 500/600 beds. One nurse per ward of 45 patients, plus aides and attendants (!) (Much less for night). Wards divided into 2 and 4-bedded rooms, well equipped.

Dining room on each floor (cafeteria system) for patients. Patients' Guild. Beauty Salon. 50% patients do work of some kind, but receive no payment. Occupational Therapy (art therapy by volunteers).

2. Medical and Surgical Hospital (not seen)

3. Research Unit (372 patients)
Laboratories on top floor and in basement, wards in between (not seen).

4. Maximum Security Unit (visited)
For male psychopathic criminals (female psychopathic criminals are not segregated from other female patients). 396 patients: 29 or 37 beds to ward (some singles and doubles). Good Occupational Therapy. Excellent gymnasium. Auditorium as good as a good theatre. Outdoor recreation. Eight cafeterias. Patients "self-government". Electrically controlled doors from an entrance hall to wards. T.V. in many rooms.

Mr. Jolly reports:-

"What I did see in this hospital was very good; what I did not see is important. The units I visited accommodated only one-seventh of the patient population. Very few patients were in the grounds (which I toured by coach) and one can only conjecture that the remaining 6,000 patients were receiving care of some sort. The calibre of the senior medical staff appeared to me to be extremely good, and it was made obvious to us that they were not satisfied with existing conditions."

Aultman Hospital, Canton, Ohio.

The hospital was founded in 1891 when the Aultman Hospital Association was officially incorporated as a non-profit community organization. The seven-storey main building was opened in 1954, and since that date all other sections of the hospital have been modernized or replaced by new buildings. It is an accredited, private non-denominational general hospital of 512 beds, plus 72 bassinets and approved for Internships and Residency Training Programmes in surgery, medicine, obstetrics and gynaecology, pathology and radiography. It has an approved school of nursing (annual intake of 100/120 students), X-ray Technician School, Medical Technology School, Internships for Hospital Administration and Psychology.

Admissions number 17,000, births 3,000 and O.P. Attendances 56,000, a year.

Wards are subdivided into 1, 2 and 4 beds. All single and double-bedded rooms are the same size, every single room equipped for conversion for 2 patients. A nursing unit consists of 67 beds with nurses' station. There is a solarium on each floor (with T.V.) and all wards are equipped with linen and incinerator chutes. Dadoes are everywhere protected by plastic sheet. Corridors are wide with 45° cove to skirting to protect walls. Food is sent to wards from central kitchen and trayed in ward kitchen. Patients have a selective menu. There are 8 operating rooms with surgeons' changing rooms, etc. and 1 lounge, en suite. Recovery rooms hold 24 beds and cots, with piped oxygen and suction, and fitted sphygmomanometers. The 20 rooms in the Isolation Ward are plain and simply furnished to facilitate disinfection.

Psychiatric Department - 40 beds in 2-bedded rooms.

In the obstetrical department there were four labour rooms. It was the practice to leave mother on table for two hours after delivery. There were 12 nurseries, 6 bassinets in each. Baby is allowed to be with mother for feeding only. Every baby is photographed and photographs sold at 1 dollar each (automatic camera). Average stay of patients 5 days. There is a premature baby unit for 16 babies.

On all ward floors there is a classroom for nurse education, case conferences, etc.

Central Sterile Service Department (2,500 sq. ft.)

Head nurse in charge. Ampins are widely used. Clinical thermometers sterilized in C.S.S.D.

All sterilising is done in this department, excepting recovery rooms.

Rubber gloves are washed in laundry, then to C.S.S.D. (a fairly common practice in other hospitals). Beds and equipment also sterilised here. Blankets are returned in plastic bags.

Laboratories.

These occupy an area of 5,233 sq. ft. and are air-conditioned. The staff consists of 5 specialists with Master's degree, 17 technologists (passed examination) and 5 technicians (not yet passed examination).

Laundry. (on three floors - work processed upwards)

Laundry Manager in charge. Gas-heated hot air unit for drying. Central linen store. All uniforms standard, white overalls with colour distinctions - 14 standard sizes in stock. Non-professional staff uniform free and laundered free. Professional staff charged for laundering. Linen packs for beds after patients' discharge. Bath packs supplied to wards daily. Daily delivery of ward linen (quota system). Needleroom under laundry manager. Heat-marking machine. Thermo-patch for repairs.

Boiler House.

4 coal-fired boilers with gas or oil standby.

Emergency Ward.

Treatment Rooms. Orthopaedic Rooms. Plaster various colours for children. Lollipops always available.

Cleaning of Hospital.

Executive Housekeeper (female), 3 Supervisors (who do a little work).

In surgery, delivery rooms, laboratories and pharmacy, cleaning is responsibility of head of department.

Walls are routinely washed or decorated by own staff. Programme of preventive maintenance (anything that moves).

Medical Records.

Conventional. Microfilming after 5 years. Central dictating pool (telephone system on tape). Night shift of copy typists - previous day's dictation ready by 8.0 a.m. following day.

Nursing.

Director of nursing is male (qualified). School of Nursing - 25 full-time plus 5 part-time teachers. 250 students in school. Nurses' Home excellent. Kitchen and lounge on each floor - also petting or 'beau' rooms.

Personnel Department.

Personnel Officer interviews all new staff. He is also Publicity Officer.

Suggestions adapted from staff are paid for.

Community Rehabilitation Clinic.

Physiotherapy, Hydrotherapy, Occupational Therapy.
(NOTE - Language master machine for speech therapy)

Catering.

Central kitchen - excellent equipment. Cafeteria for all staff. Tray conveyor to central wash up. High level lighting "to discourage lingering".

Ambulance Service.

In Canton the ambulance service is provided by the morticians in the City.

NOTE - Quiet Notices - photograph of pretty Nurse "Sh....." "Why be difficult? With a little more effort you can be impossible."

Wooster Community Hospital, Wooster, Ohio.

This hospital of 128 beds was built in 1950 and consists of 3 storeys and a basement. The nursing unit of 44 beds is divided into single and double bedrooms. There are 2 major and 3 minor theatres and a recovery ward of 8 beds. The standard of finishes and equipment throughout the hospital is extremely good, and the kitchen is an example of economy in space, first class equipment and high standards of cleanliness. A point of particular interest was that this small hospital was using elaborate punched-card accounting equipment (IBM sorter, reproducer and tabulator) which would cost probably $12,000 to buy but was on hire at $400 a month (including service).