BATHING FACILITIES FOR LONG-STAY GERIATRIC PATIENTS

PART 1 OF A STUDY OF PLANNING REQUIREMENTS FOR GERIATRIC PATIENTS

A REPORT PREPARED BY THE HOSPITAL DESIGN AND EVALUATION UNIT DEPARTMENT OF HEALTH WELLINGTON NEW ZEALAND 1974
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FOREWORD

This report represents the first stage of a comprehensive study which the Hospital Design and Evaluation Unit hopes to make of functional requirements of the various aspects of geriatric care.

Although a great deal of research has already been done in this field, it cannot necessarily be assumed that the situation remains static, or can be applied in toto to the New Zealand scene. Indeed, a preliminary survey suggests that there are differences. To take one example relevant to this report, there appears to be a much greater acceptability of the use of the shower by both staff and patients alike. We feel also that there is scope for a study in depth of the co-ordination of specific functional areas into wider planning concepts.

The earlier survey made clear the divergence of opinion on the bathing of the geriatric patient. There is considerable variation in the techniques in use, many having been forced on staff by the availability or otherwise of facilities. There are a variety of styles of equipment and of mechanical aids. Where the views and opinions of nursing staff have been sought, these naturally have been coloured by their own experience and their ability to improvise and "make do" with inadequate accommodation and facilities. Some evaluation of the variety of types of available equipment and of mechanical aids appeared to be called for. All these circumstances showed that an independent survey was clearly desirable.
The techniques as observed in use in a variety of hospitals are described in the text as well as the results of a questionnaire. Conclusions drawn and critical planning requirements are then described. While there will always be room for personal opinion and experiment in this field, the Unit believes that the conclusions expressed follow logically from the observed work patterns. This report which will later become part of a comprehensive report on the planning requirements of geriatric accommodation is issued now in the belief that it will be helpful to those already engaged in planning such accommodation.

The study was carried out by Miss M. MacKenzie, Nurse Adviser and Mr W. Potaka, Executive Officer to the Unit.
We wish to express our appreciation to all who assisted in the survey, particularly to Medical Superintendents and Geriatricians who arranged visits to their geriatric units and who gave of their time for discussion. The co-operation of nursing staff and orderlies who demonstrated bathing methods and answered questions willingly is gratefully acknowledged.

We also acknowledge with thanks the assistance and advice given by the other members of the Unit, Dr T. Lawrie and Miss M.E. Penty and colleagues within the Health Department, in particular Mrs N.J. Langford, for the illustrations and Mr E.H. Clarke for assisting with the plan drawings.

Miss M. Mackenzie
Mr W. Potaka
1.1 Long-stay wards are designed for the aged sick and disabled, i.e. patients who are very dependent on nurses for most if not all activities of daily living. The emphasis is on nursing care with maintenance therapy to maintain what independent functions the patients have.

1.2 The ward team varies from hospital to hospital in number and experience but in all cases is under the control of the ward sister. In some wards many of the staff are of limited training and experience, in others they are students of general or community nursing, mostly female and supervised by variable numbers of registered staff. Male staff may be available in some hospitals to assist with the bathing, toileting and lifting of patients. Consequently these aspects of nursing care are carried out by attendants with varying degrees of training.

1.3 The problem of bathing these patients and in particular the lifting that invariably precedes and follows this procedure, is well known to nurses. The introduction of various kinds of lifting equipment and a variety of baths over the years is evidence of the efforts made to improve this aspect of patient care and lighten the load of the nurse. Despite these efforts however, many difficulties still exist.

(a) Many geriatric patients are accommodated in older buildings with poor facilities, which lack space and are often unsuited to the use of modern equipment. Expensive equipment is purchased for use in these conditions and because it does not come up
to expectation, is condemned. This may not necessarily be the fault of the equipment; given better conditions the situation could be quite different.

(b) The requirements of nurses in the working situation are not always understood. They are disinclined to use a mechanical aid unless it is simple to operate and demonstrably easier than doing the work manually.

(c) The nurses attitude to the use of mechanical equipment is affected by the reaction of her elderly patients whom she will try to please whenever she can by bathing or showering according to their preference.
2 METHOD OF STUDY

2.1 The desired information was obtained in two ways:

(a) By questionnaire which was sent to all Hospital Boards for distribution to nursing staff actively involved in bathing elderly people;

(b) work studies of the various techniques in use in six selected hospitals, in addition to the general observations made in the wider survey of geriatric accommodation.

Patients were classified according to their disability and degree of dependence. The following classification can be readily understood and is similar to that in use by several hospitals:

Class 1 - requires minimal assistance, e.g. supervision because of frailty or mental confusion;

Class 2 - can walk with assistance of one person or a walking aid, and can stand unaided;

Class 3 - requires considerable assistance because of limited use of arms or legs. Two assistants usually required;

Class 4 - immobile - unable to use arms or legs for support.

2.2 Room sizes were established from observation of facilities in use and by measuring actual space requirements for the various procedures.
2.3 Attention was focussed on the following installations and equipment:

(a) the domestic bath and its variations;
(b) the wheelchair shower;
(c) the hydraulic bath;
(d) the hydraulic hoist and bath;
(e) the mobile hoist with bathchair attachment.
3 OBSERVED WORK PATTERNS

3.1 Patients are commonly bathed twice a week but exception is made for those for whom more frequent, even daily, bathing is necessary. At other times they are sponged in bed, as are the very frail and ill patients. Availability of staff plays a part in controlling the frequency of bathing or showering and it was noted that when staff shortages occur, bath lists are often curtailed as a first measure to save time.

3.2 The facility used is usually determined by the patients' condition and ease of staff handling. Nurses are prepared to consider patient preferences but the time factor coupled with fluctuating staff numbers and experience does affect the choice.

3.3 A lot if not all of the patients are out of bed for breakfast as it is easier for them to eat their meal when sitting up. They may be in the dining room or in chairs by their beds. In most long-stay wards bathing of patients commences after breakfast with the aim of completion by about 11 a.m. for various reasons, e.g. to fit in with the patients' programme; because of the availability of staff over these hours; or to fit in with the domestic staff timetable.

3.4 Staff generally work in pairs and have a given list of patients to bath or shower. Grouping of baths and showers within each ward makes it easier for staff to obtain a third person to help with lifting a patient out of the bath or transferring a patient from one chair to another.
One hospital used the "team bathing" approach whereby a team of registered nurses using one facility baths all the female patients according to a timetable covering three hours in the morning and three hours in the afternoon, Monday to Friday. Similarly, a team of male orderlies under the supervision of a registered nurse baths all the male patients in the hospital. This method is not to be commended because of the "production line" way patients are treated by unfamiliar staff; because of the implications of a rigid bathing timetable; and because travelling time from bed area to bathroom may be considerable. This is not a criticism of hospital management in the case cited, as circumstances have forced this method upon them.

3.5 Long-stay patients are frequently dressed for the day in normal clothing, and it was usual to dress them after bathing in or close to the ablution area, transfer them to their geriatric armchairs and take them directly to the day spaces.

3.6 Forty four patients were observed and timed in bath rooms and showers at five hospitals. Room occupancy time varied from 7 to 18 minutes, the mean time being 12.3 minutes per patient. (see Table 1) Most of this time was used in undressing, drying and dressing the patients. Washing time was from two to four minutes. There was little difference in room occupancy time between bathing and showering patients although the number of attendants did vary according to the facility used.

At one hospital, cubicles close to the bathrooms were used as undressing cubicles in order to speed up the throughput of patients in the bathrooms and showers. Dressing was more often completed in the bathroom. This concept did not appeal to the
observers because the patient is left waiting in a state of undress for longer than if he is undressed in the bathroom. This system could develop into the production line approach to patient care.

3.7 Where bathrooms and showers opened directly off the main corridor, privacy of patients was impaired by staff entering and leaving the rooms.

3.8 Although it was usual to toilet the patients before bathing, a toilet within the bathroom would effectively slow the throughput of patients. However, if the toilet is quite separate, patients have been seen taken to the bath in an embarrassing state of undress.

3.9 If the bathroom had a wash hand basin, it was used solely for cleaning patients' teeth. The lack of one in shower rooms did not inconvenience staff. In several wards all patients have their teeth cleaned in the bedrooms before the bathing routine begins.

3.10 Washing cubicles provided in association with bed areas in long-stay wards were not used for their designated purpose. Few of these patients are capable of having a wash without help and supervision from staff. They are given wash bowls and attended to at the bedside. The wash hand basins necessary in bed areas for staff use plus those in association with sanitary facilities are sufficient for the needs of patients and no extra provision appears called for.

The hot damp towel system would be a very suitable way of allowing patients to wipe their faces and hands during the day e.g. after meals. It is surprising it has not been introduced into these wards.
3.11 Transferring of Patients

As part of the bathing (and toileting) process many patients are transferred from their geriatric armchairs to toilet chairs and back again. There are two ways of carrying out this transfer.

(a) The two chairs are placed side by side. One attendant stands behind the patient and grasps him under each arm. The other faces the patient, grasps under the thighs, and the patient is lifted and side-transferred to the other chair.

(b) The patient grasps a wall mounted hand rail and is assisted to a standing position by an attendant on either side of him. The chairs are exchanged by the attendants or by a third person.

During the transfer pyjama pants or bloomers are pulled down or up. In wards where bathrooms, showers and toilets open off main ward corridors and transfer must take place there, patients' privacy is seriously infringed not to mention the embarrassment to any passers-by. Where facilities do open off a foyer screened from general view, space is often very limited and wall space not available for hand rails.

3.12 Bathing Techniques

3.12.1 Showering of Patients (Drawings 3.1, 3.2)

The patient is transferred to a toilet chair either at the bedside, outside or inside the shower room. Some patients are able to sit on a small stool. Once the patient is seated, one attendant can manage in many cases, although it is not unusual to have two attendants throughout the procedure. They don aprons, gumboots or stand behind protective barriers to wash the patients.
Horizontal hand rails in shower compartments were used by those patients who could stand to have their backs washed.

Showering appears to be a very convenient way of washing geriatric patients and reduces the amount of lifting required. However, not all patients can sit comfortably on a toilet chair for the required time and it is difficult to wash patients with deep skin folds. It appears to be a convenient way of washing hair once a week.

Only one hospital visited had seat belts fitted to their toilet chairs. These give patients a sense of security and prevent them from slipping.

3.12.2 Domestic Bath

(a) When the bath is free-standing, the wheelchair is positioned at the end of the bath, the patient's legs raised and the patient lifted into the water by an attendant on each side (see drawing 3.3). A third attendant may be required to help lift a heavy or awkward patient out of the bath. This method allows for an even sharing of weight of the patient between the attendants.

(b) When there is insufficient length at the end of a free-standing bath or when one long side of the bath is against a wall, the patient must be lifted in from the side which means that one of the attendants must take the brunt of the patient's weight, and the patient feels less secure. Lifting out of the bath becomes even more difficult and it is not possible for a third attendant to help.
The staff either kneel or bend over the bath to wash the patients. It is usual to lift patients into their chairs for drying and dressing.

3.12.3 Variations of Domestic Bath

3.12.3.1 Bath with pit on one or both sides (see drawing 3.4). This is intended to raise the level of the patient in relation to the attendant who is washing the patient while at the same time preserving the usual relationship between floor and bath rim at least at one end and sometimes on one side as well. We see no real advantage in this arrangement.

(a) Despite the provision of a lower level, the attendants usually have to work with their backs bent over the side of the bath.

(b) Whilst lifting a helpless patient into the bath, the attendants must walk down steps and again during the course of lifting the patient out of the bath, the attendants must walk up steps to seat the patient. This lift becomes almost impossible if there are steps on only one side of the bath because of the uneveness of the lifting.

(c) The only benefit seen is that it reduces the amount of bending required in washing the patient who can get into the bath with minimal assistance but is unable to wash himself. Such patients
are few in number and even these could only use the bath with a pit on one side.

3.12.3.2 Bath with raised floor at one side. This is in a way a reverse of the bath with a pit on one side. The patient enters the raised bath from a platform at one side. The attendant is at floor level. This bath has the disadvantages outlined in paragraph 3.12.3.1 and in addition the patient is expected to walk up and down steps, and negotiate the drop into the bath.

3.12.3.3 Ambulift bathchair in conjunction with domestic bath. (Drawing 3.5) This was the only form of mechanical hoist we saw in use which employed a fixed chair to transport the patient from bed to bath. This system requires the patient to remain on the chair after being lowered into the bath.

It is doubtful if there is any advantage in the use of this aid over seating the patient on a toilet chair and showering him.

(a) It required two persons to manoeuvre the patient on to the bathchair from his bed and this appeared difficult and clumsy.

(b) It needed care by two attendants to push the patient on the hoist to the bathroom from the bed area.

(c) Because he remained seated on the chair, the patient could not lie
down in the bath and the depth of water over the patient was minimal.

(d) It is difficult to transfer a heavy patient from the bathchair to a geriatric chair because the bath chair does not swivel on the hoist and the attendant cannot get behind the patient to lift him. (See paragraph 3.11 (a) ) We have seen a patient returned to bed after bathing then slings fitted on the hoist to lift him to his chair.

3.12.3.4 Other types of hoists are available but without the bathchair attachment. If the patient is suspended by slings, he does not feel as secure as he does in the chair fixture when being transported from bedroom to bathroom. However, given suitable working conditions in the bathroom it is possible to take the patient to the bathroom by wheelchair and then lift him into and out of the bath using the hoist and slings. (Drawing 3.6)

Before purchasing it is advisable to ascertain that the hoist is suitable for use with beds and bath.

3.12.4 Hydraulic Bath (Drawing 3.7)

This is a mechanical aid, designed to assist nurses bathing difficult and heavy patients, the hoist in this case being part of the bath mechanism. The perforated bath tray can be raised to the level of the bath rim to facilitate transfer of patients from their beds. The tray can be lowered $12\frac{1}{2}"$. This variable height makes it easier for nurses to
wash and dry the patients; bending is reduced because the tray even at the lower level is at a convenient working height. The patient is usually brought in alongside the bath either on his bed or on a trolley and transferred across to the raised bath tray. Three attendants, one on each side, and one taking the head and shoulders are necessary in the interests of the patient's safety and comfort although often only two transfer the patients. We have also seen the patient brought in by chair and lifted by two attendants on to the raised bath tray but this is a heavy lift for one of the attendants who must take the brunt of the patient's weight. (Drawing 3.8)

Internal measurements of hydraulic baths vary. A width of 22" is too narrow for bathing some heavy and disabled patients. No complaints were received from staff using baths 26" in width.

The bath tray is stainless steel with perforations and in some models a central screw can damage patients' skin.

Consumption of water is substantially increased (approximately 100 gallons per bath) although the patient does not always get the benefit of this as 5½" depth of water is below the bath tray.

Cleaning of this bath is difficult. To give the bath a thorough clean involves unscrewing the tray to remove it in one model and in another, unscrewing the tray support. It is impractical to clean below the tray after each patient.

Where a hydraulic bath is installed, it is chosen not necessarily for those patients who present the greatest lifting problem but rather for those whom staff find it easier
to wash and dry at the more convenient height of this bath tray.

We have seen hydraulic baths installed which do not equate bed height so that a hydraulic trolley must be used to transfer the patient from bed to bath, i.e. an extra transfer becomes necessary. However, bed traffic has disadvantages in corridors of long-stay wards where patient movement is generally slow. Some baths have been installed in rooms which are too small to allow reasonable access by bed or trolley. In some wards, access from bed area to bathroom is lengthy and is complicated by narrow corridors and angled approaches. In such circumstances, advantages to nurses are diminished to the point where the bath is little used, in some cases not at all.

This type of mechanism avoids the difficulties which can be associated with the mobile hoist, but is necessarily more limited in its usefulness.

Patients' reactions to the hydraulic bath are variable. Those of limited mental capacity are frightened by the "sinking" feeling experienced when the tray is lowered into the water. The patient's sense of privacy too is diminished by the larger than usual bathroom, exposure on the bath tray and the number of attendants involved.

3.12.5 Bath with associated Hydraulic Hoist (Drawing 3.9)

This mechanical aid designed to assist nurses bathing difficult and heavy patients differs from the hydraulic bath in that the hydraulic hoist is fixed to the floor beside the bath. It has a rotatory as well as a vertical movement.
The forks of this hoist fit into a detachable perforated bath tray which has a wheeled bogie to carry it. The bath is stainless steel.

The patient is transferred at the bedside on to the bath tray and wheeled to the bath room. The tray with patient on it is slid from the wheeled bogie on to the forks of the hoist and swung through 180 degrees to position it over the bath. The tray can be lowered 15 1/2" thus providing comfortable working levels for staff. The depth of water below the tray in its lowest position is 4 1/2".

The tray can be raised again to dry the patient and swung to its position outside the bath where the patient can more readily be transferred to a chair, or wheeled back to bed.

Drips of water from the bath tray could create a hazard for staff but when this technique was observed, the tray was virtually dry by the time the patient was dried.

As with the hydraulic bath, water consumption is substantially increased but cleaning the bath and tray presents no difficulties.

It is obvious that any bath that is raised to a convenient working height for nurses necessitates the use of a hoist.
WHEELCHAIR SHOWER
TYPE A

DRAWING NO. 3·1
A mock-up study of space requirements
WHEELCHAIR SHOWER
TYPE B

DRAWING NO. 3-2

Showing staff working behind barriers
Demonstrating method of lifting
BATH WITH PIT
ON BOTH SIDES

Illustrating the problem of changing floor levels
The patient must remain in the chair
AMBLULIFT
WITH DOMESTIC BATH

DRAWING NO 3.6
Illustrating the use of slings
Illustrating the transfer of a patient from trolley to bath tray
(drapes omitted for clarity - patient often lifted on drawsheet)
HYDRAULIC BATH

SHOWING TRANSFER FROM CHAIR TO BATH TRAY

DRAWING NO. 3-8
THUNE BATH

DRAWING NO. 3-9

Illustrates transfer of the patient on bath tray from wheeled bogey to bath
4.1 Questionnaires were completed by 519 staff of all categories actively engaged in nursing in 85 hospitals. Of this number 67\% were from registered staff, and 17\% from staff in training. 52\% of the replies were from male staff. The majority of replies indicate that the staff are familiar only with the facilities they are using and although many see the need for improved ways of bathing the elderly they are unable in most cases to suggest a better alternative to the wheelchair shower and the domestic bath. Several suggest that the hydraulic bath "sounds a good idea".

4.2 Many nurses make mention of the poor standard of accommodation and the inadequate facilities for bathing. Rooms lacking in space with poor heating and ventilation and insufficient or inappropriate aids are frequently commented upon. In many wards domestic baths are against a wall and showers ill-designed for wheelchair use, adding greatly to the lifting problems of staff.

4.3 Generally the facility used appears to depend on the type of patient e.g. a heavy patient would be showered or bathed in an hydraulic bath if available or sponged in bed for want of a suitable alternative. Many patients of this generation are used to bathing and answers showed that nurses tend to give them what they want except where the patient is confused or too heavy in which case the facility used is that easiest for the nurse and safest for the patient. However some nurses did say that patients get used to showering provided certain design criteria are met. Patients dislike water falling from a height, forceful spray, and they feel cold quickly after a shower.
4.4 In the majority of hospitals, the shower or domestic bath is the facility used and wanted for Class 1 and 2 patients. Where installed in a manner facilitating use, the hydraulic bath is the choice for the heavy patients in Class 3 and 4. Opinion was divided on whether the domestic bath or the shower is the most suitable way of washing the rest of Class 3 and 4 patients. The patients' physical and mental condition must be taken into account. Some registered staff mention a preference for all patients in long-stay wards to have an immersion bath once a week. At other times the shower may be used. Only one hospital uses the hydraulic bath for all patients.

4.5 **Wheelchair Shower/Domestic Bath**

The following are the most frequently stated opinions on the use of the wheelchair shower and bath, some contradicting each other. This Unit's comments follow. Staff in stating their preferences may very well be influenced by existing working conditions and their particular patients.

<table>
<thead>
<tr>
<th>Wheelchair Shower</th>
<th>Domestic Bath</th>
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</thead>
<tbody>
<tr>
<td>1. Encourages independence.</td>
<td>1. Patients usually prefer a bath.</td>
</tr>
</tbody>
</table>

**Our Comment:**

Independence has greater relevance to the rehabilitation rather than the long-stay ward. Patient preference may change in keeping with their degree of dependence. Our experience is that patients do become used to a new facility, usually a shower.
Wheelchair Shower

1. Can be washed more thoroughly.
2. Difficult to wash skin folds, especially with obese patients.
3. Very suitable for incontinent patients.
4. Good for hair washing.
5. More hygienic.

Our Comment:

While accepting that in certain types of patients cleansing may be more satisfactorily done in the bath, we would question the stimulation of circulation and prevention of pressure sores. A hand held shower rose should be available with the domestic bath to facilitate hair washing among other uses.

Domestic Bath

1. Easier to wash patients.
2. Stimulates circulation.
3. Important for skin care.
4. Prevents pressure sores.

Our Comment:

While accepting that in certain types of patients cleansing may be more satisfactorily done in the bath, we would question the stimulation of circulation and prevention of pressure sores. A hand held shower rose should be available with the domestic bath to facilitate hair washing among other uses.

1. Less exhausting for the patient.
2. Beneficial to patients with arthritic conditions.

Our Comment:

We agree that a bath can be relaxing and comfortable but with the circumstances prevailing in geriatric wards, the time the patient is in the water is insufficient to allow for this. It is unusual too to have sufficient depth of water for exercises to be carried out.
<table>
<thead>
<tr>
<th>Wheelchair Shower</th>
<th>Domestic Bath</th>
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</thead>
<tbody>
<tr>
<td>1. Easier to control patient</td>
<td>1. Easier to control patients.</td>
</tr>
<tr>
<td>2. Less control of patient.</td>
<td>2. Patients feel safer, there is less risk of falling.</td>
</tr>
<tr>
<td>3. Not all patients can sit comfortably on a toilet chair.</td>
<td>3. Possibility of injury to patient during lifting.</td>
</tr>
</tbody>
</table>

Our Comment:
Some patients may be more easily controlled in the bath than the shower but with a safety belt on a shower chair there should be little difference. With the latter safeguard we feel there is less risk of accident in the shower provided the patient can sit comfortably for the required length of time.

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<table>
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<tbody>
<tr>
<td>1. Good for heavy patients, less lifting involved.</td>
<td>1. More strenuous lifting for staff.</td>
</tr>
<tr>
<td>2. More convenient.</td>
<td>2. Uncomfortable for nurses bending over a low bath.</td>
</tr>
</tbody>
</table>

Our Comment:
Very often the patient is on the toilet chair for toileting purposes before proceeding to bath or shower so there is certainly less lifting involved with the showering process. The lift out of the bath, i.e. from a low to a higher level is difficult and one most likely to cause back injury to staff. Once the patient is in the bath some nurses adopt a kneeling position to work in.
Wheelchair Shower  
1. Economical on staff numbers and time.

Domestic Bath  
1. More staff involved for longer than with showering.

Our Comment:

We agree that more staff are involved with bathing because of the extra lifting and a third helper may be required for the lift out of the bath.

Our time studies show that there is little variation in the time taken to wash the patient in bath or shower but time is lost in the bathing process whilst waiting for help. Once the patient is on the toilet chair for showering one attendant can very often manage unaided until the patient is ready to be transferred to an armchair.

4.6 Hydraulic Bath

Seventeen hospitals have hydraulic baths and replies state that all but one are made good use of for a selection of class 3 and 4 patients. One hospital in fact uses the hydraulic bath for all patients.

Many of the comments made apply in general terms to immersion baths and have been noted in paragraph 4.5.

Particular points are noted here with our comments.

1. Lifting from trolley to bath is an easier lift than others.

2. Less strenuous lifting.

3. Easier to handle these patients.

Our Comment:

The ease of transfer of the patient depends on the height of the bed or trolley equating bath
height. Observation has shown that unless this is so or an hydraulic trolley is used the discrepancy between bed or trolley height and bath height is up to three inches and this can be most uncomfortable for the patient being pulled across from one to the other. The number of patient transfers is not less than in domestic bathing unless the bed is brought alongside the bath. In fact the number of transfers could be greater if the patient is toileted before bathing, and afterwards lifted from bed to armchair. Lifting is less strenuous on the staff and easier for the patient if three staff are in attendance. The side transfer of a patient is easier than the lift out of a domestic bath.

1. Incapacitated and heavy patients feel safer.

Our Comment:
Some patients, especially those of limited mental capacity, are frightened by the sinking feeling experienced as the tray is lowered into the water. On the other hand, patients need not have the fear of being dropped as may happen with the domestic bath.

1. Easier to wash and dry these patients.

Our Comment:
Bath widths have been seen to vary. A width of 22 inches was noted to be too narrow for the satisfactory washing of heavy people.

The bath tray is at a convenient height for washing the patient. When the tray is raised for drying purposes the patient could feel unduly exposed.
1. Slow to fill, empty and clean.

Our Comment:

Adaptations can be made to improve the filling and emptying times. We have seen a bath filled in 2\frac{1}{2} minutes and emptied in 2 minutes. Cleaning is a problem and it is impractical to clean the area below the tray between patients. This area is cleaned as well as possible without removing the tray at the end of the day's list. To clean the bath thoroughly involves unscrewing the tray and removing it. This is done twice weekly in one hospital, in another once in three weeks.

4.7 Thune Hydraulic Hoist and Bath

This is installed at two hospitals. One hospital commented enthusiastically so a visit was made to see the bath in use. It does appear to have advantages over the hydraulic bath, (see paragraph 3.12.5).

4.8 Medic Bath and Ladywell Bath

4.8.1 The Medic bath is installed at two hospitals. It is a "sit-in" bath with a door, and brochures reveal that it is suitable for the frail and nervous who can usually manage on their own. The questionnaire indicated that the hospitals which have one use it for some class 2 and 3 patients but no comment was made on its usefulness.

The apparent major disadvantage is that the patient has to step into the bath before it fills and the water must drain away before he gets out, so the question of water temperature arises and the patient getting cold while waiting for the bath to fill and empty.
These fears have since been confirmed by staff at one of the hospitals concerned. They do not fill the bath but use a shower attachment for washing the patients. This suggests similarity to the shower with side barriers providing protection from wetting for the staff (see paragraph 6.1.4, Type B shower).

4.8.2 The Ladywell bath similar to the Medic bath but designed to take a wheelchair presents similar problems. Both would seem to be more suitable for disabled rather than geriatric patients.

4.9 **Lifting by Staff**

This is the commonly used method of lifting and is quicker than using mechanical equipment. Some replies stated that where correct training in lifting and adequate assistance are given, there have been no problems with back strain of staff.

Statistics are not available on back injury to staff but enquiries suggest that these are not insignificant. Staff are making full use of adjustable height beds where provided and when these are used in conjunction with chairs with demountable sides, the lifting load is considerably reduced.

4.10 **Lifting Equipment**

4.10.1 Some of the older equipment used to date is slow to use, cumbersome and not always freely movable when taking the weight of the patient. Questionnaire comments indicate that patients are nervous, and staff apprehensive of mechanical lifting equipment.

Two staff are generally required to position the slings and steady the patient so it is not time-saving. In older hospitals there
is often not the space available for manoeuvring the lift, and the "feet" of these lifts do not fit under the latest design of hydraulic bed.

4.10.2 There are other forms of mechanical lifts appearing on the New Zealand scene but these were not mentioned in the questionnaire replies. However we have discussed them with staff where they are in use.

(a) Mecanaid Ambulift

This is a mobile hoist on a U-shaped base operated on a ratchett system which has a lifting range from 1'-8" to 4'-8" above floor level. The patient is raised by slings attached to the hoist and can be transported on it and manoeuvered from bed to chair etc. The ambulift also has a bath chair attachment (see paragraph 3.12.3.3) and other accessories.

This lift appears to be simple to operate and is suitable for transferring heavy patients from bed to chair etc. It has been modified to enable it to be used with the newer hydraulic beds and this modification could well affect its manoeuvrability. It is difficult to move on carpet.

(b) Wessex Patient Lifter

This is an electrically powered carrier which slides along an overhead track. The incorporated lifting device can be lowered to any level and the patient is put into a harness and attached by hooks to the lift which then raises the patient who can be manoeuvered into a wheelchair beside the bed or anywhere along the line of track. If installed in the bathroom
it can be used to lift a patient into and out of the bath.

Because of its dependence on overhead track its use where seen has been restricted to short lengths of travel.

4.11 The Unit acknowledges with thanks the co-operation of staff in taking the time to write constructive criticisms of existing facilities and making suggestions for improvement. Although it was apparent in many cases that knowledge of the various types of facilities was limited to those in use, the information was useful for eliciting points for and against bathing and showering of patients.

A pattern did emerge and this has been confirmed by observation of facilities in use.

(a) The majority of patients in a long-stay geriatric ward can be readily washed in a suitably designed wheelchair shower.

(b) The domestic bath has its place for a selection of patients.

(c) Some form of mechanised bathing is desired for a few patients who for reasons such as obesity, limb contractures, cannot easily be showered or washed in the domestic bath. The hydraulic bath does not seem to meet all the requirements.
5.1 Number of Facilities Required

5.1.1 One facility for every ten patients would appear to be adequate for the different work styles. In a thirty bed long-stay ward this would mean eighteen patients could be washed in a three hour period allowing the very generous time of thirty minutes per patient per facility. (see Table 1)

5.1.2 The concentrated use of these facilities would keep six staff occupied working in pairs. It would be reasonable to assume that no more than this number would be available for assignment to bathing at any one time in a ward of thirty patients.

5.2 Grouping Facilities

5.2.1 Grouping of facilities and association with screened transfer space provides improved conditions for both patients and staff besides simplifying building services. More privacy is available for the patients when facilities do not open off a corridor, transfer of patients is more easily accomplished and at bath times help is more readily available when an extra person is required for lifting a patient etc.

5.2.2 Consideration must be given to the groupings if male and female patients are to be accommodated in the one ward. It is usual for bathing/showering of male and female patients to be taking place simultaneously.
It is preferred that facilities should not be allocated permanently to male or female use but they should be capable of providing for segregated use when so required with the necessary privacy. Staff should be able to move between facilities without undue exposure of patients.

5.2.3 Very necessary parking space is provided in transfer areas for toilet chairs and other mobile equipment.

5.3 Wheelchair Shower

Replies to the questionnaire and our own observations alike confirm that the well designed wheelchair shower has many advantages in the long-stay geriatric setting.

(a) It is suited to the majority of patients; the main exceptions are the very fat or the very thin and frail who are unable to sit on the toilet chair for the necessary time. Patients appear to adjust to its use quite readily and often come to realise that the leisurely and relaxing bath they may have preferred in their own homes is hardly practicable in hospital.

(b) By comparison with a patient on a bed, trolley or mobile hoist, the patient on the toilet chair is easy to transport and manoeuvre, easy to take to the W.C. and to transfer to a geriatric chair, assuming the design of the chairs is suitable for side transfer.

(c) The wheelchair shower is economical of staff time in aggregate and of staff effort in lifting etc.

It is also easy to use; nurses do not need
to fill, adjust water temperature, empty or clean as when using a bath. The technique involved is fairly obvious, a considerable advantage in a situation where untrained and often changing staff may have to be employed.

(d) It is also economical of floor space and of hot water supply, especially when compared with the hydraulic type of bath.

(e) It is safe; the risk of cross infection is avoided, patients do not feel they may be dropped if an attendant loses balance during a lift, and with thermostatic control, taps cannot be a danger to the senile wandering patient when the nurses' backs are turned. (We have seen bathrooms kept locked because it was felt that hot taps could be turned on by such patients).

(f) The shower appears to be the preferred means of cleansing the patient with faecal incontinence after initial attention.

For these reasons, it is suggested that the required number of facilities should be made up of showers except for one bathroom of appropriate type per ward.

5.4 The Bath

Although a number of geriatric patients are bathed regularly in the accommodation now available, this is often because of a lack of suitable alternatives. Nevertheless there does exist a minority of patients for whom showering can be unsuitable and a varying proportion of these are very difficult for staff to lift.

For this reason we believe that baths in new long-stay units should be so installed that they are capable of being used with some form of lifting
device should the need arise.

The difficulties associated with bathing the more helpless patients are two-fold: in a bath set at normal level, they are too low for staff to wash easily; if the level of the bath is raised the problem of getting the patient in and out of the bath and of drying them becomes more complex.

The various forms of special baths available to the long-stay geriatric unit arise from the interplay of these two factors.

5.4.1 The Domestic Bath

The island domestic bath (i.e. with three free sides) set at normal height appears to be quite acceptable for many patients. These include the light-weight patient who is relatively easy to lift and the reasonably mobile patient whose main need is supervision, e.g. the mildly confused.

Provided design is suitable, the use of a fixed or mobile hoist or one carried on an overhead track can be combined with this bath, to deal with heavier or more awkward cases. A fixed hoist is less flexible in use and has some disadvantage in that it cannot be pushed out of the way when more floor space is needed. The value of the mobile hoist with bath chair attachment will be greatest when access between the bathroom and the more dependent patients' bed areas is short and easy.

If the patient wishes to go to the W.C. before bathing, the transfer area would be a convenient place to fit the bath chair seat to its chassis thus converting it to a toilet chair. If the mobile hoist is used with slings it is probably best stationed
in the bathroom and the patient brought to it by wheel or toilet chair.

Some nurses may find it more comfortable to kneel to wash patients at this level. We see no reason why they should not be provided with some form of waterproof cushion for the purpose and if this raises the nurses level slightly it could be an advantage to shorter nurses.

5.4.2 Variations to the Level of the Domestic Bath

(a) Variations to the level of the bathroom floor are described in paras 3.12.3.1 and 3.12.3.2.

In our opinion the improved level of the patient for washing by staff is offset by the serious difficulty of getting many patients in and out. Modifications of this type are not considered further in this report.

(b) Variations to bath-height can also be achieved by setting the bath higher than normal, the floor remaining level. This again raises the patient in relation to the attendant, but has the disadvantage that all patients using the bath will need to be hoisted in and out if it is significantly raised.

The flexibility of use of the lower-set bath plus hoist is therefore lost. Nurses must resort to (and patients submit to) increased mechanical lifting without the advantage which appears to be most valued in the hydraulic type of bath i.e. the variable height platform.

This raised domestic bath does not seem to us worthwhile if the need to bath
difficult patients is an infrequent occurrence. If it happens often it is open to question whether it is sufficient.

5.4.3 **Mechanised Baths**

These are expensive installations. Their most appreciated aspect is the variable height available to attendants for washing and drying patients. The full potential of easier lifting was often seen not realised because transport to the bath by chair was preferred to that of bed or trolley.

5.4.3.1 The Hydraulic Bath as described in paragraph 3.12.4 has both advantages and disadvantages. It is used most efficiently when patients can be brought to it on their beds and somewhat less effectively if a trolley must be employed. In either case, access between bed area and bathroom needs to be reasonably short and direct. Extended routes, narrow corridors and tight corners have been seen to diminish the use of this type of bath to the point where it is rarely if ever used. This is a situation which is more likely to be encountered in ward conversions or upgradings, than in new construction.

5.4.3.2 The Bath with an associated Rotating Hydraulic Hoist described in paragraph 3.12.5 has the extra advantage that the variable height platform can be swung clear of the bath itself. This makes for the easier transfer of patients from a chair to the bath.
tray or vice versa. This horizontal movement appears to us to have considerable value in a geriatric ward, when patients are not necessarily in bed at bath-time and when they are likely to be taken from the bath to day areas on wheelchairs. It also permits easier cleaning of the bath.

5.5 Choice of Facility

5.5.1 Our study showed that present use of the various types of bathing facilities in practice is much affected by such questions as staff and patient adaptation to the existing facilities, convenience of location and of access, the design of the facilities themselves and the adequacy of the work space around them. It is therefore almost impossible to analyse use on a rational basis applicable to future buildings. Where an hydraulic and a domestic bath, each of good design and access are available, staff are likely to use the hydraulic bath for all patients who are not showered and ignore the domestic bath. In these circumstances there appears little point in providing both.

5.5.2 We were unable to gather reliable statistics which would indicate the point at which a costly installation such as a mechanised bath can be justified. It cannot be shown to save time or reduce the number of staff who must be employed, but it can ease the work load and perhaps save staff backs. Justification would seem to depend on the number of patients who cannot be washed readily by other means. This in itself is
a variable quantity but is unlikely to involve many patients.

5.5.3 Notwithstanding the situation noted above, we did observe some broad variations in patient categories as between various hospitals visited. For example, the condition of patients in units in the smaller country towns tended to cover a wider range than in city long-stay hospitals where geriatric patients on average were often more helpless. This situation presumably arose because in the latter case a wider choice of accommodation was available. A similar situation can apply to the younger disabled patient in need of institution care.

It was observed also that in older structures lacking those amenities which contribute to the maintenance of independence, patients on the whole were more dependent on staff. When rebuilding is undertaken, therefore, a heavy load of category 3 and 4 patients may be expected to persist for a considerable period.

These and other factors may need to be assessed before the type of bath can be determined in individual cases.

5.5.4 We recommend that one bath, most often of the domestic island type, should be available in each ward. Domestic baths should be capable of being used with some form of lifting device if needed.

Where a mechanised bath can be justified as an alternative on the grounds of special need, administrative and physical planning should be directed to grouping the bed areas of
patients requiring this facility in close proximity to it.

5.6 Location of Bath/Showers Suite

As already described, patients in long-stay units are usually taken to the day room after bathing and do not normally return to the bed areas at this time. The grouped washing facilities are best located at some point on the route between the two, rather than in direct relationship to bed areas only. Nevertheless, the suite needs to be handy to the bed areas of the most helpless patients; these are more likely to be closer to day spaces than remote from them.

Where the grouped facilities are within easy distance of the day room, W.C's and associated transfer spaces can be a valuable asset at other than bath times.
6 DESIGN REQUIREMENTS

The suggested measurements in this section of the report are based on equipment currently available and seen to be in use, particularly in more recently built wards. In long term planning it must be remembered that manufacturers' designs may vary from time to time and new equipment may be developed. This can affect room design and access requirements. Designers should satisfy themselves that space provided is adequate for the equipment they intend to use.

The following suggestions are the result of work studies of washing facilities in use.

6.1 Wheelchair Shower

6.1.1 If this is to be the most used facility for washing geriatric patients, it is essential that its design provides optimum working conditions for the nurses and comfort and safety for the patients.

6.1.2 A close relationship to a W.C. with an associated wash hand basin is needed. Access between shower and W.C. should not involve main circulation routes.

6.1.3 As in most showers, there are two distinct functions to be accommodated. The "dry" area will be used for undressing and later dressing the patient. The "wet" area is where the patient will be washed and dried. Each area must allow space for two staff members to attend the patient seated on a toilet chair. Where there is no transfer
area available, it should be possible to transfer a patient from the toilet chair to a geriatric chair within the shower compartment.

6.1.4 Two types of wheelchair shower are illustrated on drawings No. 6.1 and No. 6.2.

In Type A, "wet" and "dry" areas together form a rectangular space with no built-in subdivision between them.

In Type B, the "dry" area extends in two narrow bays down the sides of the "wet" area, with low separating barriers. This type of shower requires a slight increase in overall floor area, but allows staff to work in drier conditions and without having to don protective clothing.

In both types, the usual requirement must be met that water falling on floors will be directed to drainage outlets, but here it is essential that this should be accomplished without detriment to the movement of wheeled chairs between "wet" and "dry" areas.

6.1.5 Functional Requirements

6.1.5.1 Space Requirements

Recommended dimensions based on current equipment are shown in millimeters on the relevant drawings. For convenience, the approximate equivalents in imperial measurements are included in this section.

Type A

A minimum area of 1600 mm by 1600 mm (approximately 5'-3" x 5'-3") is required in both "wet" and "dry" sections. Additional space will be
required to hang clothing, and hold toilet requisites and equipment needed by staff within the shower compartment.

**Type B**

The "wet" area requires to be not less than 1000 mm (approximately 3' - 4") in width by 1600 mm (approximately 5' - 3") in depth. A greater width than this would make it difficult to reach the patient when two attendants are involved in the washing process.

On either side of the "wet" area, a minimum width of 500 mm (approximately 1' - 8") is required as working space for attendants, separated from the "wet" area by barriers of an average height of 730 mm (approximately 2' - 5") varying according to the fall on the floor. These barriers must be rigid enough to take the weight of staff leaning over them or patients grasping them. Top surfaces should be designed to be comfortable for both these purposes.

A further depth of 1600 mm (approximately 5' - 3") is required for the "dry" area. As the room width will be greater than 1600 mm, it should be sufficient to accommodate necessary clothing, equipment, etc.

6.1.5.2 Access

The entrance to the shower must allow easy access for wheelchairs and open into the "dry" area. A minimum clear opening width of 900 mm (approximately
3'-0") is recommended. An inward opening door is undesirable because space is limited and staff may wish to come and go while the compartment is in use. A sliding door is a more suitable arrangement.

If the entrance is off a transfer area rather than a main corridor, the patient will be afforded greater privacy, and the geriatric chair can be conveniently located there until required. A curtain could replace the door in this situation.

Privacy is increased according to the extent that design avoids a direct view into the shower. The mobility of a toilet chair by contrast with a bed or trolley has advantages here.

6.1.5.3 Shower Outlet
The shower fitting must be of the hand-held variety on a smooth, easily cleaned, flexible hose complete with wall bracket. The most suitable location in terms of use by right or left-handed staff would be on the end wall but it would not be inconveniently located on one side wall provided there is adequate length of hose to work with.

In Type B shower it must be located on the end wall but this can be easily reached by staff.

6.1.5.4 Soap Container
A suitable soap dish is one which can
be hooked over the hand rail and positioned to suit the user.

6.1.5.5 Thermostatic Control of Water Temperature
It is a basic requirement of the wheel chair shower that both staff and patients should have absolute confidence in the control of water temperature. Since good thermostats are expensive items, it is advantageous if one fitting can control more than one facility.

6.1.5.6 Handrails
The recommended height for handrails in showers is 830 mm (approximately 2'-9"). Shower dimensions quoted presume that the projection of hand rails in front of the wall to which they are fixed does not exceed 76 mm (approximately 3 inches).

In showers of type A, the handrail should extend the full length of wet and dry areas on one side and along the opposite side of the wet area at least. A rail along the rear wall of the wet area may be considered to give some wall protection and/or warning of the existence of a floor channel. In the case of the shower with a side entry, the full length handrail should be fixed to the wall opposite the doorway.

In showers type B, a handrail will be required in the dry area, its position being determined by the location of the door opening. The most convenient location is probably opposite the wet area.
6.1.5.7 Holding Space for Equipment
(a) Parking space for a trolley and a soiled linen rounder will be needed in a convenient location. They should not congest circulation space which will be busy at bath-time. The same consideration applies to parked chairs and other equipment.

(b) A shelf is required to hold toilet requisites, i.e. powder, lotions, ointments etc. This shelf can be placed at a height which will permit mobile equipment such as a chair or trundler to stand beneath it.

(c) Hooks are needed to hang clothing.

(d) A trundler is useful for patients' underwear and personal toilet articles. Towels can be placed on the trundler or hung over rails.

(e) A mirror should be available in a convenient location at a height suited to the seated patient.

6.1.5.8 Shower Floors (see also paragraph 6.5)
Safe surfaces and good drainage are especially important here if staff are to work in reasonable conditions and if water is not to be carried by the wheels of toilet chairs beyond the confines of the shower compartment. Wheelchair shower floors as commonly designed can be divided into two broad categories:

Floors where "dry" and "wet" areas are differentiated. In this case
the "dry" dressing area is most commonly an extension of the general floor finish outside the shower compartment, the "wet" washing area being in most cases in a different, more impervious material and graded to a floor waste. This section is often set at a somewhat lower level than the "dry" area.

Sufficient water can carry over onto the dressing area to cause unsafe conditions underfoot. It too should therefore be finished in one of the restricted group of non-slip surface finishes. When the same material extends through both "wet" and "dry" areas the problem of making a water-tight junction between two different materials does not arise. A raised upstand is clearly ineligible: a drop down at this point makes it less easy to wheel the toilet chair in proportion to the grade of the drop and the weight of the patient. A grade of 1 in 10 extended over a distance of approximately 600 mm (approximately 2'-0") was seen to be satisfactory where a positive change of level was preferred.

Floors where "wet" and "dry" areas are not differentiated, i.e. the same surfacing material is used throughout and the floor is graded from the point of entry to the drainage outlet at the rear.

This has the advantage of providing a more consistent surface underfoot, especially when a drainage channel
along the rear wall carries water to the outlet - cross-falls then do not need to be introduced and water falling on the work area is not directed to a localised point. A fall of 1 in 80 should be regarded as a minimum. A greater fall could be called for according to the characteristics of the floor surfacing material, provided the stability of the chair is not adversely affected.

6.1.5.9 Shower Wastes
These must be capable of carrying away water quickly allowing for some reduction in efficiency due to likely stoppage by soap and hair. Larger than normal outlets are required and protective gratings or covers should be readily removable and frequently cleaned.

6.2 Domestic Bathroom

6.2.1 The use of the domestic bath in general hospitals has largely been superseded by the shower because of the very real risk of cross-infection. In the geriatric setting this is not so important and the bath as a means of cleansing still plays its part. In the future, however, because of the increasing popularity of showering, the bath is losing favour here too.

6.2.2 It is usual for patients to be toileted before proceeding to the bath so a close relationship to a W.C. compartment is desirable.

6.2.3 Functional Requirements
The bath will require to be free standing on both long sides and the end, and space will be
required for the patient in his chair to be positioned at the end of the bath, for staff to work on both sides, plus additional space for fixtures and equipment.

6.2.3.1 The entrance to the room must allow for easy access of wheelchairs and mobile hoist and be placed so as to allow positioning of the chair with the patient facing the end of the bath. This positioning of the chair requires to be a simple manoeuvre, able to be accomplished without jarring the patient.

Greater privacy will be afforded if this room does not open off a main corridor as one staff member frequently leaves the room when the patient is in the bath.

6.2.3.2 It is desirable in the interests of flexible use of the bath that 950 mm (approximately 3'-0'') be allowed on both sides of the bath for the attendants to work in a kneeling position and also for the use of a mobile hoist with slings or an hoist on overhead track. A minimum of 1600 mm (approximately 5'-3'') clear space is suggested at the end of the bath to allow for the chair to be brought in to face it or the mobile hoist with bath chair attachment. This too, would allow for the undressing and later drying and dressing of the patient, two staff members usually being in attendance for this.

6.2.3.3 Fixtures and Equipment
(a) A bath, no longer than 1676 mm (5'-6''). A bath length of 1524 mm (5'-0'') merits consideration so that the patient is less likely
to slip down. A square-ended bath is not comfortable.

(b) It is recommended that support for and facings around domestic baths should be provided in such a way that a clear space at floor level is available at the side and end to allow "toe" room for the attendants and for a mobile mechanical hoist to be used if desired.

(c) Some attendants like to "break" the lift of the patient from bath to chair. Others do not. A stool of suitable height and stability will meet this need when required without interfering with other techniques including the use of a mechanical hoist.

(d) A shower rose with flexible hose is useful for hair washing and rinsing the bath after cleaning.

(e) Shelf space is required by the tap end of the bath for toilet articles. A small stool could serve this purpose.

(f) Space will be needed for a trolley of clean linen supplies, general toilet requirements, cleaning materials and a soiled linen rounder. An alternative arrangement for the former is recessed shelving.

(g) Hooks are needed for hanging patients' clothes. A supermarket trundler has been seen to be a useful means of holding some of these and knee rugs.
(h) A hand rail fixed at 830 mm (approximately 2'9") on one wall to support the patient in a standing position for dressing purposes and chair transfer.

(i) A mirror set at suitable height for patients seated in geriatric chairs.

6.3 Hydraulic Bath, Rotating Hydraulic Hoist and Bath

6.3.1 Because patients are brought to the bathroom from bed areas the relationship of the two is a critical one if patient movement is to be facilitated.

6.3.2 Functional requirements

Patients will be brought to the hydraulic bath by bed or trolley and to the hydraulic hoist/bath by trolley.

The bath will require to be free standing on all sides and space must be sufficient for the bed or trolley to be brought alongside plus room for attendants to move around all sides.

6.3.2.1 The entrance to the room must be positioned to allow a direct run-in with the bed or trolley. Because of this, the room is best situated opening off a main corridor.

6.3.2.2 At least 800 mm (approximately 2'-7") clear space is required all around the bed and hydraulic bath when the bed is in the transfer position and in the case of the hydraulic hoist and bath, all around the bath, the hoist with forks and tray trolley.
6.3.2.3 After bathing it may be desired to transfer the patient directly to a geriatric chair. In the case of the hydraulic bath, the unoccupied bed can be removed leaving sufficient room to accomplish this transfer.

The bath with a rotatory hoist requires space beside it for the bath platform and a chair, plus room for the attendants to work. A minimum of 1800 mm (approximately 6’-0”) is needed for this purpose.

6.3.2.4 Fixtures and Equipment

(a) The bath must be entirely free standing and in the case of the hydraulic bath installed at a height which equates bed height in order to simplify patient transfer.

It must be capable of being filled quickly with water at controlled temperature and similarly should be capable of emptying quickly.

(b) A rose attachment for hair washing and rinsing the bath after cleaning should be provided near the patient's head, i.e. at the end opposite the filling taps.

(c) Space will be needed for a trolley of clean linen supplies, general toilet requirements, cleaning materials, (or recessed shelving) a soiled linen rounder.

(d) Hooks for patients' clothes.

(e) Attention must be paid to floor finishes, particularly in the case
of the hydraulic hoist and bath as drips of water from the bath tray can create a hazard for staff.

6.4 Transfer Area

6.4.1 The concept of a transfer area has been developed as a result of observations made in long-stay wards in an endeavour to provide the patients with more privacy than is afforded at present in some hospitals. (see paragraph 3.11)

6.4.2 This area will serve two or more patient facilities and will provide necessary parking space for toilet chairs and other mobile equipment e.g. a hoist when not in use.

6.4.3 Functional Requirements

Here patients will be transferred from geriatric chairs to toilet chairs and back again. Linen and paper protection of armchairs will be changed as necessary.

Staff and patients will require access to hand washing and toilet facilities.

6.4.3.1 The entrance to the area must allow for easy access of wheelchairs and a run in to face a wall fitted with a handrail. It may be possible to meet the requirements of patients' privacy yet not provide a door, but if a door is necessary, it should be a sliding one. A hinged door can be a hazard to slow moving traffic besides being difficult for patients with walking aids.

6.4.3.2 The recommended area for one patient
transfer movement is 3.800 square metres (approximately 40 square feet). Although patient transfers can be accomplished in less space this area allows comfortable room for staff to move easily and to position or push away empty chairs. The minimum wall length on which the handrail will be affixed requires to be 1600 mm (approximately 5'-3\"). The recommended space in front of this wall should not be less than 1800 mm (approximately 6'-0\") in depth.

Additional adjoining space is required for holding toilet chairs when not in use, and geriatric chairs when toilet chairs are in use, plus any other equipment to be held in this area.

As well, access must be preserved to the facilities being served and any fittings for clean and soiled linen etc.

6.4.3.3 Fixtures and Equipment

(a) A handrail fixed at 830 mm (approximately 2'-9\") extending at least 1600 mm (approximately 5'-3\") along the wall of the patient transfer space.

(b) Wash hand basins for staff and patient use. The actual number will be determined by the number of facilities being served by the transfer area.

(c) Parking space will be required for a trolley of clean linen or alternatively recessed shelving could be considered, and for a soiled linen rounder.
6.5 **Floors in Ablution Areas**

6.5.1 **Surfacing Materials**

Staff and patients' safety and convenience require that floor finishes be such that they can be relied upon to remain non-slip in use, even when wet or soapy. Textured flooring tiles with positive non-slip finishes and special grades of P.V.C. flooring with granular additives best fulfil these requirements. It should be noted that stainless steel, terrazzo and many standard grade sheet floorings become slippery under these conditions.

6.5.2 **Cleaning**

Floors should be designed to facilitate cleaning, also the removal of water which may accumulate from splashes or drips. Drainage should therefore be provided wherever it is appropriate and floors laid with fall to wastes or drainage channels in the wetter locations.

6.6 **Doors in Ablution Areas**

Patient privacy must be balanced against the need for supervision and ease of access to facilities. Doors if closed confer privacy but so often they have been seen left open and the patients exposed. The reasons doors are left open are:

1. patients feel too removed from help if the doors are closed and they are left on their own. Very often they are unable to call out or use a call-bell.

2. staff come and go, checking on the patient, seeking the assistance of another staff member, going out for extra supplies etc.
Where facilities open off transfer areas it is suggested that at least some of the doors be replaced by curtains.

The door opening requires to be 900 mm wide (approximately 3'-0") to allow for the passage of wheelchairs and patients walking with assistance.

6.6.1 Hinged Doors

The use of this type of door must be considered carefully in geriatric wards as traffic is slow moving and a lot of use is made of wheelchairs. Allowance must be made for the door swing so that people will not be caught by it opening. Self closing doors should be avoided because they are dangerous for older patients and inconvenient for staff who are assisting or wheeling patients.

6.6.2 Sliding Doors

Provided these are well hung and grips are suitable they are easy to open by disabled people and staff pushing wheelchairs. Both sliding doors and curtains need only be opened the necessary amount to allow the passage of a person or equipment or supervision of the patient and for this reason people in the room tend to be less exposed.

6.7 Handrails

In the foregoing recommendations, constant reference is made to the need for handrails. In addition to normal hospital purposes, in this context they are much used as grips by patients who can stand briefly, stabilised in part at least by this means. This can greatly facilitate washing, drying, dressing,
undressing and transfer from chair to chair. As considerable weight can be put upon rails, fixings must be secure.

Handrails are relatively space-consuming in small areas. Recommended minimum dimensions assume a maximum projection of 76 mm (approximately 3 inches). This allows for a rail of 32 mm diameter (approximately 1\frac{1}{4} inches) and a clearance of 44 mm (approximately 1\frac{1}{2} inches) to give some tolerance for possibly deformed hands.

6.8 Heating and Ventilation

6.8.1 The level of heating required is one which will keep the patient warm but at the same time not be uncomfortable for staff. Heaters must be recessed or protected so that patients cannot grip them.

6.8.2 Good ventilation is necessary and must allow for the rapid dispersal of steam. Draught-free conditions when facilities are in use are, however, necessary. The fact that doorways are so rarely completely closed off imposes particular requirements in this respect. (see paragraph 6.6)

6.9 Dimensions

Recommended minimum dimensions in this report should not be encroached upon by radiators, ducts and other intrusions for which additional space should be allowed.

6.10 Decorative Treatment

The long-stay geriatric ward must of necessity become "home" for the majority if not all of the patients. For this reason it is desirable to create as domestic an atmosphere as possible. Decorative treatment can play a major part in helping to achieve this.
6.11 Mobile Chairs

It is strongly recommended that toilet and geriatric chairs be selected to meet the following requirements.

(a) All four wheels should be able to swivel to provide the necessary degree of mobility in confined spaces.

(b) Drop-down arms on both sides of each type of chair are needed for easier transferring of patients. This type rather than removable arms is preferred as it does away with the problem of what to do with them after removal. Arms in the "up" position should be secure.

(c) Foot rests are needed. These should be capable of lifting up to allow patients to set feet to the floor when necessary or alternatively allow for patients to stand on them without causing the chair to tip.

(d) An easy braking system is a further requirement. This should be capable of operation from the front rather than the rear of the chair.
SHOWER—TYPE A

alternative positions shower hand piece
rail at 830 above main floor level

min. fall on floor to channel 1 in 80

hanging storage & parking space if required within shower (trundler shown)

SECTION AT X—X

Note: max. projection of hand rails on side walls assumed 75

rail and channel at rear wall

rail and channel at 1600 rear wall

1600

wet area

1600 dry area

3200

3200

PLAN—END ACCESS

Dimensions and other data as above

additional space for equipment as and if required

PLAN—SIDE ACCESS

DRAWING NO 6·1

dimensions shown are recommended minima (millimeters)

SCALE

1 : 50
SHOWER—TYPE B

Note: positions of door & rail can be reversed if necessary

DRAWING NO 6.2
dimensions shown are recommended minima (millimeters)

SCALE
1 : 50
BATHROOM WITH DOMESTIC BATH
(adapted to possible use with hoists)

this section of bath cantilevered
with clear space under

cantilevered centre support
if required

SIDE VIEW OF BATH

shelving and
clothes hooks

PLAN OF BATHROOM

end of bath
built-in to
preferred detail

support
if required

SECTION THROUGH BATH AT 1

Notes

(1) Clear space beside and below the bath is the minimum recommended to facilitate the general use of the "Ambulift" mobile hoist. It is essential for the use of slings (see Drawing 3.6).

(2) The recommended door opening width provides passage for a mobile hoist with manoeuvrability reduced by the weight of a heavy patient.

Check requirements for equipment proposed.

DRAWING NO 6.3
dimensions shown are recommended minima (millimeters)

SCALES
1:50 & 1:20
BATHROOMS WITH MECHANISED BATHS

PLAN · HYDRAULIC BATH

PLAN · THUNE BATH

DRAWING NO 6·4
dimensions shown are recommended minima (millimeters)

SCALE 1 : 50
General Layout

This is one of a number of possible groupings of facilities and transfer space, assuming a 30 bed ward. Its intention is to allow reasonable privacy to patients and satisfactory working conditions plus mutual assistance for staff.

Its purpose here is to illustrate transfer space requirements in diagrammatic form.

Transfer Space Requirements

Above the centrally placed bathroom, the transfer from chair to chair of a seated patient is indicated. In this case, the toilet and geriatric chairs stand side by side with contiguous arms removed. The patient is lifted from one to the other by attendants in a lateral movement.

Below the bathroom, the transfer is that of the patient who can stand briefly, holding on to a rail and supported by staff. The chair to be occupied must be within easy reach. In this case it is equipment rather than persons which change place. Because staff must continue to hold the patient while changing chairs they have somewhat limited control of peripheral chair movement. This technique is therefore more space consuming but reduces staff effort (paragraph 3.11). Depending on staff availability, it is also possible to position the chair to be occupied directly behind the patient. The third person then pushes the chair into place when the other chair has been removed.

In both cases, transfer within and without the shower is practicable, but transfer outside is more convenient in most circumstances.

Transfer from the "Thune" bath platform in the lowered position outside the bath is similar to the transfer from bed to chair or vice versa.
KEY

A - Shower (wet area)

B - W.C.

C - W.H.B. with set-down top, space for chair, mirror, paper towel dispenser, disposal bin.

D - Standing space for miscellaneous equipment.

E - Bath

F - Bath Platform in low position.

G - Standing space for Clean Linen Trolley and Dirty Linen Rounder.

H - Rail

I - Extra space for Equipment etc.

+ - Standing position for attendant

[ ] - Chair position in transfer.
GROUPED FACILITIES & TRANSFER SPACES

SHOWER TYPE A

TRANSFERS OF
SEATED PATIENTS

THUNE BATHROOM

TRANSFER-CHAIR
& BATH-PLATFORM

SHOWER TYPE A

TRANSFERS OF
STANDING PATIENTS

trundler & chair
transposed

DRAWING NO 6.5

SCALE
1:50
GLOSSARY OF TERMS

Hydraulic Bath
A purpose built bath containing a hydraulically operated, variable height platform. The raising and lowering mechanism is within the perimeter of the bath. Patient movement on the platform is restricted to the vertical.

Bath with associated Rotating Hydraulic Hoist
A purpose built bath with a separate hydraulic hoist as a standard component, the hoist in this case being fixed to the floor outside the perimeter of the bath. Hoists are available to raise, lower and rotate a choice of accessories designed to support the patient. An example is the "Thune" bath, whose space requirements are illustrated on drawing No. 6.4.

Domestic Bath
A standard bath selected from the normal commercial range. In the geriatric situation, installation usually requires adaptation to meet special needs.

Island Bath
A bath with free access to at least three sides, two of these being the long sides.

Toilet Chair
A mobile chair with a seat of the same kind as that used for a W.C. pan. Occasionally, they may have adaptations to allow use with a bed-pan when necessary. These chairs are now available with demountable arms.
Wheelchair
A chair designed primarily for mobility. These chairs are available with demountable arms.

Geriatric Armchair
A chair combining the characteristics of a wheelchair and an armchair, i.e. both mobility and comfort. There is usually also provision for fitting a tray in front of the chair and for dropping the arms.
### Table 1

**Room Occupancy Times at Five Long - Stay Hospitals**

<table>
<thead>
<tr>
<th>Time In (all a.m.)</th>
<th>Time Out (all a.m.)</th>
<th>Room Occupancy Time</th>
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