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**CENSUS OF OLDER PEOPLE IN
ACUTE MEDICAL BEDS IN
MEDWAY HOSPITAL**

**For Medway NHS Trust, Thames Gateway NHS Trust and
West Kent Health Authority**

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July 1999

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EXECUTIVE SUMMARY

This report is based on a point interval census of acute inpatients at Medway Hospital.

The objective of the study was to provide information on the current service utilisation, the casemix and the division of clinical work load between general medicine and elderly care, as they relate to acute inpatient medical care for persons aged sixty-five and over.

A census instrument was developed. The records of medical inpatients aged over sixty-five in hospital between March 22nd and 29th 1999 were audited using the criteria in the instrument.

The design, setting, subjects measurements, analysis and results are dealt with in detail in the subsequent chapters.

From the data analysis, results and subsequent discussion, the main issues and possible options for change have been identified and are addressed here under.

The census provides a profile of patient experience from a single 8 day period of activity in the hospital, at the seasonal mid point for extremes of acute care pressures. The degree to which it typically represents the services in question is limited by the sample size and time scale and that remains a caveat to any inferences or assumptions which follow. The major findings have been:

1. The study demonstrates a picture of an 'over heating' care delivery system with ward/specialty occupancy rates near to 100 per cent.

When occupancy levels rise above 85 per cent in acute units, inefficiencies and risks arise more frequently. Patients back up waiting for admission, outliers increase, internal transfers become more difficult, and work load fluctuation increases.

2. There are significant numbers of patients outlying in wards where the type of specialist nursing staff differs from the specialty care required. For all medical admissions over age 65, 1 in every 10 were located outside of the general medical and elderly care wards.

Apart from the excess workload for the staff who have to visit patients in disparate parts of the hospital, there are inherent risks for the patient in being an outlier. Wilson et al (1995) in the largest adverse events study yet (14,000 admissions) showed that the commonest cause of system errors resulting in adverse events were, "absence or failure to use policy, protocol or plan" and the majority (80%) of these frequently disabling or fatal events were highly preventable.

3. The age policy for triage of admissions to general medicine and elderly care is operating almost universally. The inter specialty referrals/transfers are no higher than would be expected across all specialties. (Bensley 1995).

The case mix and severity/intensity of care is shown to be remarkably similar for the two

age groups 65 - 74 and 75+. Nor did this change for the older patients in the latter group. Furthermore the over 75 group would appear from the study data and hospital data to have shorter lengths of stay. (However, the study dealt with small numbers and potential enumeration problems with the hospital routine data collection were encountered, so this last finding should be treated with caution.) Also for both groups, an unaddressed need for more specialised services was identified (eg stroke and acute rehab).

4. Although there appears to be evidence of demand overwhelming supply at one end of the system, this may well be counter balanced by supply inappropriate to need at the other end. The level of appropriateness of admissions has not been assessed directly in the study. However we know from a recent South Thames Study (Bristow et al 1997) that this is expected to be high. Also the fact that there is an assessment process inbuilt in the admission ward which shows low rates of patients being directly discharged after consultant review, supports this theory.

On the other hand the level of inappropriateness, inpatient days of stay (subsequent to admission) are probably much higher. The South Thames Study (Bristow *ibid*) showed rates of 30 percent. This instrument, though not designed for the same purpose has demonstrated 10 per cent of inpatient days where patients had no active care and another significant proportion of days where they were receiving nursing care only. So somewhere in the region of a fifth of bed days may be more appropriately supplied in another type of service (eg community beds).

5. The relevance of the admissions ward in current practice.

The rationale for establishing the admissions ward would appear to have been three-fold.

- (a) To provide short term risk management for patients whom GPs and junior medical staff are not happy to leave at home/discharge without a consultant opinion.
- (b) To provide a location where joint rounds could be conducted between general physicians, geriatricians, and patients triaged according to joint decisions.
- (c) To provide a common locus for all recently admitted patients to be reviewed by consultants prior to ward placement.

The current operation of the ward does not appear to support this rationale. The census shows few patients discharged directly after consultant review. The rounds, although concurrent in time appear to be completely independent with little or no joint consultation. The locus alone may benefit patients in that current policy dictates that last in are first seen.

Options for consultation arising from these findings

1. Demand overwhelming supply:
Although it may have been an artifact, because of the small sample, it did appear from the census that weekend admission patterns were different to weekdays, which may indicate

different weekend referral patterns and raise questions about the appropriateness of some admissions. A specific audit on appropriateness of admissions, followed by further admissions policy development and an exercise to coordinate effective practice and appropriate clinical behaviour change through PCGs (with possible assistance from any further winter pressure funding), may be indicated.

2. Chronic outlier problems raise consideration of bed allocations. However if some of the inpatient load is inappropriate (in terms of efficient utilisation) and it can be quantified and modified, then that should be done first.
3. According to case mix and the severity/intensity measures, it would seem that in spite of the age separation, the two patient groups in question are clinically similar in terms of needs and work load. The lack of this apparent differentiation other than by policy may present options for appraising a change of alternative options (along with the pre-existing).

If for example it was possible to demonstrate the existence of substantial redundant or inappropriate bed days in the overall year's load of occupied bed days, this would present a target for disinvestment and reinvestment. Say, in medical and elderly care, there existed a rate of 30 percent inappropriate days of stay, c.f. Bristow (ibid). If, as is frequently the case, this care could be provided at a less intensive and less costly level than standard acute hospital care, then appropriate policy decision may be possible to enable this. In doing so, some of the bed days and resources released could be reinvested in further reconfiguration.

Health service delivery is dynamic and there may be the opportunity there to pool the medical care between the general physicians and geriatricians, while establishing specialist care for stroke, fast track rehab, further community care and other possibilities.

4. A criteria audit of medical records specifically measuring appropriate use could accurately measure levels of inappropriate utilisation and for an analysis of the underlying reasons for the barriers to efficient utilisation.
5. Reallocation of the current 29 beds for an admission ward could also be a potential first domino for configuration change in the future, if subspecialisation were a priority.

Bensley D. The rise in non-elective admissions. 2nd Report. Northern and Yorkshire RHA, 1995.

Wilson R, Runciman W, Gibberd R, Harrison B, Newby L, Hamilton J. The quality in Australian Health Care Study. Med. J. Aus. 1995; 163: 458-471.

Bristow A, Hudson M, Beech R. Analysing Acute Inpatient Services. Dept of Public Health Medicine, UMDS, London. May 1997

CENSUS OF OLDER PEOPLE IN ACUTE MEDICAL BEDS IN MEDWAY HOSPITAL

1. BACKGROUND AND OBJECTIVES

1.1 Background

SEIPH was asked by West Kent Health Authority to provide information that would help the future commissioning process of acute service for elderly people at the Medway Hospital site in Gillingham.

At Medway Hospital acute inpatient care is provided by both general medicine and elderly medicine teams. However, in the past the contractual arrangements have been unusual, with general medicine being commissioned from Medway NHS Trust (acute), and elderly medicine services being separately commissioned from Thames Gateway NHS Trust (community). From April 1999, a new service level agreement was made that contracted both types of acute medical services through the Medway NHS Trust, which sub-contracted Thames Gateway NHS Trust to provide for people over 75.

Historically a simple age policy (over and under 75 years) determined which specialty took responsibility for which patients. In 1996 the admissions policy was altered and at the time of this study all acute medical emergencies were admitted to a single admissions ward, regardless of age and triage. Daily general physician and geriatrician ward rounds were then carried out using the age differentiation. Admissions policies were requested from both trusts, which referred to these arrangements.

At this juncture the stakeholders wished to see further assessment on how the service was being delivered. This study was proposed in response.

Quite apart from the contractual changes, there had been increasing pressures on beds on the Medway Hospital site - particularly from emergency medical patients admitted through the large A&E department - which had led to high occupancy levels with unacceptable outlier rates. This problem puts further emphasis on the need to match patients with the most appropriate care. If barriers to efficient effective use can be reduced benefits will be useful.

A wider review of health services for elderly people had been carried out (MHA report of January 1997). This showed:

- high rates of medical admissions for older people in Medway compared to West Kent (23% higher based on 94/5 data), with an anticipated rise over five years and an increase in the very old in the Medway area.
- The 1994/5 data showed average lengths of stay of 6.9 days for general medicine patients aged 65+ and 13.8 days for elderly medicine patients.

-
- Bed requirements were calculated for assumed occupancy rates of 85%.

One of the actions from this report was an agreement that the trusts would consider alternative use of shared resources.

Bed borrowing between the two trusts is assessed monthly. The accuracy of this relies on admission and discharge data being correctly entered onto the computer information. As all emergency admissions come through the A&E department, they will be recorded as Medway patients who may then transfer to elderly care. Given the unusual situation of the two trusts working on the same site, potential errors in hospital utilisation measures may well arise from the fact that a high proportion of admissions get two consultants and two trusts.

At the acute site the configuration for medicine and elderly is:

- three elderly medicine wards in A block run by Thames Gateway NHS Trust (74 beds),
- an admissions ward with shared responsibility (29 beds),
- three general medicine wards in B block run by Medway NHS Trust (90 beds).

Medway NHS Trust also runs a large A&E department, CCU, ITU and surgical wards in C and D blocks. Altogether there were 398 available beds on the site during the study period. Away from the Medway Hospital site, Thames Gateway trust provides a range of community services including paediatrics, maternity and community hospital beds. None of these were included in the study reported here.

1.2. Study Objectives

The objective of the study was to provide information on the current division of acute inpatients work between general medicine and elderly medicine services at Medway Hospital focussing on those aged 65 and over. The study was specifically to gather data on:

- the current provision of beds and levels of occupancy,
- the basis for the decision of who takes responsibility for inpatients aged 65 and over,
- a bed census describing the characteristics of patients cared for by the two specialties.

The data was expected to identify where the age policy led to decisions which would have been different had they been made on the basis of diagnosis or treatment needs. The study was to examine whether there were acute episodes for people aged 75+ which could have been more appropriately treated in general medical wards, or under 75 year olds who would have received more appropriate care from the elderly medicine services, for example those that required rehabilitation or other specialised treatment. The census data was designed to cover all acute medical admissions of patients aged 65+ in terms of treatment needs, diagnoses, route of admission and arrangements for discharge and compare for similarities and differences between those treated by general medicine consultants and elderly care consultants.

2. METHODS

The study was a multi-method approach using three different techniques of data collection to obtain information from three different settings.

- The current provision of beds and levels of occupancy required daily counts of the patients in each ward and the numbers of 'outliers' for both general medicine and elderly medicine.
- The basis for the decision of who takes responsibility for patients aged 65 and over required an instrument to collect information from the consultants during the 'post take' round.
- To collect information on the characteristics of patients cared for by the two specialties required an instrument which, from patients notes, allowed details of admission and levels of care to be collected.

2.1 Data collection method and settings

All the data collection was carried out over a week, a period which was extended to the eight days of 22 - 29 March 1999.

A bed availability and occupancy form was designed to be a simple extract each day from the bed bureau's wall chart. The bed manager agreed to provide this data on a daily basis for Monday 22 through to Monday 29 March 1999.

For the 'post take' ward round the nurse researcher followed the consultant on the round (predominantly in the admission ward B2 but occasionally to other wards where new patients were located) and asked the consultant, for each new patient, the same set of questions. Each specialty had their own round which although they started simultaneously at 9.00 were completely separate rounds.

The form was designed by Seiph from information given at the meeting with the Clinical Directors of both trusts and the General Manager of Thames Gateway. A copy was sent to both trusts and the final form took account of all comments. The form covered the date, ward, patient's age and gender, specialty, the main factor influencing the decision of specialty responsibility, appropriateness of responsibility. Where the consultant felt the patient was not being transferred to the most appropriate specialty the consultant was asked where would be more appropriate and on what factor this decision was based. As the form would be completed 'on the move' it was designed for quick completion, for example by the researcher circling predefined codes.

For the main bed census the information was collected by research nurses from patient notes on each ward. The researcher visited two wards per day, one from general medicine and one from elderly medicine, or any other wards where these patients could be found. In terms of the instrument various options were considered, these were the Appropriate Evaluation Protocol (AEP), a variant of the AEP designed by Tsang and Severs especially for elderly patients, an

audit tool currently being developed in Thames Gateway NHS Trust, a bed census survey used in acute and community hospitals in West Kent, and existing data recording methods in Medway Hospital. We also considered adapting these or designing a new proforma if necessary. It was decided that an adaptation of the previous bed census was preferred as it most closely matched the requirements of the study. While the AEP is a validated tool for appropriateness, there was some reluctance to use the AEP as it did not address the key question about which specialty was most appropriate for the treatment of older medical patients.

The bed census questionnaire used previously in West Kent was circulated for comment to the Clinical Directors and General Managers of both trusts and amendments suggested by all parties were incorporated. The final Medway questionnaire was very similar to the original proforma covering details of admission, principle diagnosis and other complications, care on admission (both medical and nursing), current care, assessment and discharge planning and dependency. Much discussion took place regarding the categories of nursing care before it was decided to adopt the three categories used in the West Kent bed census. These were defined as intensive ('2 nurses required for all procedures'), intermediate ('2 nurses required for some procedures') and minimal ('requires 1 nurse/self care'). For some patients the research nurses needed to use their judgement to allocate patients to nursing intensity levels based on the information they found in the notes.

The daily routine for the research staff was planned so they collected data from the 'post-take' ward rounds each morning and work on the bed census in the afternoon.

It was considered important that all staff affected by the study were told in advance, and both trusts helped to inform medical and nursing staff on wards and relevant staff at director level about the study and its purpose.

2.2 Subjects

For the 'post take' ward round, all new medicine patients over the age of 65 years were included.

For the bed census, information staff were asked to provide listings of patients in A and B block wards each day and patients were to be sampled by taking all patients aged 65 and over in B block wards and a 50% sample of those in A block wards off the bed state listings. If a patient was no longer in the ward, they were to be replaced by a new arrival. A rota was drawn up (shown below) so that an adult and elderly medical ward were visited each day and each ward was visited twice during the study period. The admissions ward was included in the rota and, for completeness, the census covered any other wards where older medical patients were placed.

Day 1 & 5	Bryon (elderly)	B1 (general medicine)
Day 2 & 6	Tennyson (elderly)	B3 (general medicine)
Day 3 & 7	Milton (elderly)	B4 (general medicine)
Day 4 & 8	B2 (admissions ward)	Outliers in C & D wards

2.3 Outcomes measures

The outcome measures for the study were:

- number of beds and levels of occupancy
- criteria for allocating patients aged 65 and over to specialty
- characteristics of patients aged 65 and over cared for by the two specialties by
 - age, gender,
 - diagnosis,
 - length of stay since admission,
 - level of care on admission - overall, medical and nursing
 - level of current care - overall, medical and nursing
 - assessment and discharge planning
 - levels of dependency

2.4 Analysis

The information from the bed bureau was entered into an Excel spreadsheet and levels of occupancy were calculated. Details of the findings are given in Section 4.

Details from the 'post take' ward round proformas were also entered into a separate Excel spreadsheet and simple frequency tables calculated. The 'post-take' results are also presented in Section 4.

The census data from the 168 proformas were entered, by Seiph research staff, onto the computer using Microsoft Access and a set of frequency tables looking at specialty, location of patients and age were produced. Details of the bed census findings are given in Section 5.

2.5 Pre-survey consultation

Initial meetings were held between SEIPH, West Kent Health Authority commissioners and Clinical Directors of the two trusts involved. Two visits were made to the Medway Hospital site in January and February 1999, and other staff at all levels were contacted including General Managers, Nursing and Quality, Bed Bureau and Information.

A number of key players became members of an overseeing group (Appendix 1). They were used to agree the original specification, the data collection proforma and to comment on the interpretation and reporting of results. Given the short time of the study (agreement to proceed 1 March and reporting date 19 April 1999) and the competing commitments of the members, it was not possible or practical to expect the members to meet.

The initial visit to Medway Hospital was in early January when the hospital was under great pressure from the number of over 75 year old inpatients requiring medical care. At that time there were 53 such patients placed outside the elderly medicine wards (A block). While most of these were in adult medical wards (B block), many were in surgical wards. For example, there were two surgical wards where over half the patients were medical patients aged 75+, and four over 75 year old medical patients were in the gynaecology ward.

2.6 Recruitment and training of research staff

Preparations were carefully made for the fieldwork, including drawing up guidelines and principles for data collection to be used in the training session. We required staff who would have the ability to extract information from medical and nursing notes and other sources on the wards and from consultants during ward rounds, with a minimum of disruption to patient care. Local knowledge was also considered helpful, so three nurses familiar with the Medway Hospital site were recruited by members of the overseeing group. The nurses were given training and full support on the first two days, with telephone support thereafter. They worked in pairs for most of the time and were encouraged to discuss borderline or difficult assessments. The research staff provided verbal and/or written feed-back after the field work was complete.

2.7 Discussion of methodology

This study was designed to carry out a census of older people requiring medical care that had been admitted to Medway Hospital, to monitor the flow of patients in and the decision process for allocating patients to the care of elderly or adult medicine consultants.

The study has a number of methodological limitations which are addressed in the table below. Although any such study is inevitably designed within time and resource constraints, we are confident that good use was made of these limited resources.

CRITICISM	RESPONSE
Carried out over a short period	Care should be exercised in extrapolating findings based on an eight day period
Will not reflect year-round variations	The late March timing will have recorded the situation between the seasonal extremes
Did not collect relevant information outside the acute setting	Data on primary care, home and social support not readily accessible and considered outside scope of this study
Asked for subjective views of medical staff on appropriate placement of patients	This was to find out the role of the age policy in decision-making
Extracted data from routine records of unknown quality	Research staff were nurses who were familiar with the Medway Hospital site, were trained, supported and given guidance on data extraction
Required judgements by research staff on the relevant data to record	Research staff worked in pairs, discussed problems, asked ward staff where necessary and gave detailed feed-back on the study

Before the study started, medical and non-medical staff within the specialties of elderly and general medicine perceived the problem to be that there were too many patients and too few beds and staff to cope with them. The study - done at a time when the worst of the winter pressures

were past - bears this out showing high levels of bed borrowing from surgical wards.

The nature of the local population and the resources in primary care were thought to exacerbate the problem by generating high levels of admission. It was thought that some of this demand was preventable or should have been met outside the acute hospital setting. Although the circumstances leading to a patient being admitted were not investigated or questioned in this study, there were occasions when the study identified that patients would have been better treated elsewhere. Even though these were small numbers of patients, access to such specialised areas (on both the acute site and in community hospital beds) would have reduced pressures in medical wards.

Regarding admissions policies, the question was raised about whether the age policy for allocating older medical patients to the two specialties was the best policy and whether it no longer led to an even share of work. As far as admissions go the share was slightly greater for elderly medicine, but the lengths of stay found in the census would have reduced this imbalance. Data over a longer period would be needed to examine this more fully. The main finding of this study is that the differences between patients aged 65+ under the care of the two specialties are small.

Detail on discharge policies and planning were not easy to capture. It was evident that some patients were staying longer than average figures supplied by the trust had suggested, with highest proportions of patients being ready to go home after a stay of between one and three weeks. Contrary to local policies, the census found patients on the admissions ward who had stayed 7 days. The study also found a small proportion of patients who were ready to go home and waiting for a placement to be arranged. Again the numbers were small, but these patients no longer needed to be in an acute hospital and discharging them would have freed up space.

Staff had also recognised that in reality solutions to the space problems would have to involve more flexible use of existing resources as it was unlikely there would be more money to pay for more beds and staff.

Two winter pressure funding initiatives had been in place at the time of the study which could have made a difference, although evaluations by Medway were not available to be included in this report. First, the Social Services Rapid Response Team (December 98 to May 99) involving 10 people (including nurses, physiotherapist, OT, Social Services) giving a 7 day service including a night sitting service. The objective was both to speed up discharges from hospital by offering a care package of between two and four weeks and to prevent admission by helping to keep people at home. The second initiative was the opening of a new ward at Sittingbourne (January-March 1999) for planned rather than emergency admissions. However the criteria for admission did not allow patients requiring intensive care, such as IV care, to be admitted.

In a search for external benchmarks, we looked for good practice guidelines issued by professional bodies and royal colleges on appropriate levels of staffing and resources. The British Geriatric Society has not updated its recommendations for the number of elderly medicine beds since they were published in 1987. With the emergence of step-down and community hospital beds, it is doubtful whether these recommendations can sensibly be applied

to the current situation. Although comparisons could be made with other providers, this has not been attempted, since the variation in types of provision and even in the definition of elderly medicine make it difficult to say if the Medway provision is in line with current practice or not. The changes in medical care are so dynamic as to question the usefulness of any recommendations.

A working party within the Royal College of Physicians is currently addressing the issue and has published an initial statement ('Consultant physicians working for patients, Part 1: a blueprint for effective hospital practice', JRCPL, vol 32, 4, 1998 supplement). This finds that consultant physicians are under considerable pressure from increasing workloads and suggests a maximum number of patients handled (20) in a 24-hour period, and a maximum number cared for (25) by an acute medical team. Recent increases in consultant physicians (3% in 1997) are considered totally insufficient to meet present needs. Further documents will follow, some of which are expected to cover elderly medicine.

3. SUMMARY OF FINDINGS

The following points emerged from the study which focussed on inpatients aged 65 and over in the specialties of general medicine and elderly medicine in acute beds at the Medway Hospital site.

Occupancy

During the study, in a week at the end of the winter period, there were very few empty beds in Medway Hospital. Weekday occupancy of elderly and general medicine beds was over 99%, with the occupancy of elderly medicine beds dropping to just under 97% at the weekend.

Wards where aged 65+ medical patients were placed

As a result of these pressures some patients were placed in inappropriate wards. One in seven elderly medicine patients and one in sixteen general medicine patients aged 65+ were in surgical wards. A further 5% of Thames Gateway elderly medicine patients were placed on Medway's medical wards.

Number of aged 65+ medical admissions each day

The average number of admissions were estimated from 16 post-take ward rounds of emergency medical patients. On average admissions to each specialty were around 4-5 patients on weekdays, with elderly medicine admissions doubling on weekend days. On any one day the number of emergencies varied considerably, and for the two specialties combined was between 3 and 14.

Use of age policy

During the study week the age policy was generally in use, whereby new patients aged under 75 are the responsibility of the general physicians and those aged 75 and over are cared for by the elderly medicine teams. Occasional exceptions were seen, but there was no evidence that these were other than minor slips in calculating age or where patients were seen by another medical specialty such as medical haematology. The bed census data confirmed that only a small proportion (7%) had been admitted contrary to the age policy. These tended to be around age 75 and occurred in each specialty in equal numbers.

Age policy appropriately allocates between adult and elderly medicine?

For admissions during the study period neither specialty received patients under the age policy that they felt would have been better placed with the other specialty.

More appropriate alternative care

There were occasions, however, when alternative care was considered to have been more appropriate. This was when it was felt that patients would benefit from more specialist care, such as more intensive care (CCU/ITU) or rehabilitation in a community hospital bed. These comments were made for 17% of elderly medicine patients and 27% of general medicine patients on the admissions ward.

Medical inpatients aged 65+ in the bed census

The bed census collected detailed information on a sample of 168 medical patients aged 65+, about half of whom were under the care of general medicine and half with elderly medicine. Those aged 65-74 made up around half the sample and were evenly split between the sexes. Among those aged 65+ the proportion of men was only a quarter.

Route of admission

The great majority were emergency unplanned admissions through the A&E department followed by a stay on the Admissions Ward. General medicine received some admissions from outpatient clinics and elderly medicine received a few transfers from community hospitals.

Principle diseases

When looking at broad categories of disease (based on the International Classification of Diseases ICD-10), there were small variations in the principle problem being treated. Elderly medicine patients were more likely to have endocrine/metabolic problems or had injuries and falls, whereas general medicine patients aged 65+ had more respiratory problems and cancers. Overall the main types of disease being treated were respiratory disease, heart disease and cerebral disorders which accounted for half the patients.

Multiple disorders and complications

Typically patients had other diseases or complications in addition to their main problem, although the extent of these did not vary between patients aged 65+ in the two specialties of general medicine and elderly medicine. The number of complications, however, did vary slightly by ward, with patients placed on surgical (inappropriate) wards having least problems and those on elderly medicine ward having more secondary conditions. Although fuller histories may be taken from older patients, the census was designed to extract only diseases related to the current treatment.

Duration of stay

Patients in the census had been in the hospital for longer than staff had thought, with some having stayed several weeks. Long lengths of stay were seen in the Admissions Ward (ranging from 2-7 days) compared to expectations based on the quick turnover policy and the staff perception that stays were for a maximum of 48 hours. Also some elderly medical patients on surgical wards in C and D blocks had been in hospital a month or more. The duration of stay for general medical patients was more widely spread with more short-stay patients having stayed a week or less, and more staying over three weeks (30% of general medicine aged 65+ compared to 17% of elderly medicine patients). It should be noted that these figures are for those patients picked up in the census which will proportionately over sample the long stayers but accurately reflect the range of stay lengths.

Overall level of care

There was no difference in the level of overall care on admission between the two specialties. Most patients on the Admissions Ward required the highest level of care as one might have predicted, but very high levels of overall care were also required by medical patients placed in surgical wards. As many as two thirds of the inappropriately placed patients in C and D block wards required the highest level of care on admission.

From the day of an admission to the time of the census, overall care levels had reduced in the elderly medical wards, but still remained high on the Admission Ward and the surgical wards. In fact, for a number of patients on the census day, they were not receiving specific care but were awaiting discharge (11% elderly and 6% general medicine). This was examined further in the section on discharge plans.

Medical care

For nearly half the patients, the level of medical care required on admission was intensive, but this dropped, especially for general medicine patients, to low care or awaiting investigations/ placement on the day of the census.

Nursing care

On admission, about one in six patients required intensive nursing, a proportion which applied to all patients in the census including elderly patients and those on surgical wards. On the day of the census, levels had generally reduced to intermediate or minimal nursing care, although there were exceptions to this. The levels of nursing remained high on the Admissions Ward as one might expect. On surgical wards there was a higher proportion of patients receiving intermediate care compared to other wards. This could be a recording artefact due to the type of patient monitoring on a surgical ward or could be an indication of medical outliers recovering more slowly.

Risk of pressure sores (Waterlow scores)

Most wards used the Waterlow scoring instrument, although assessments were not available for two thirds of the patients in the Admissions Ward. There was a difference between patients aged 65+ in the two specialties with a greater proportion of elderly medicine patients compared to general medicine patients being at high risk of getting pressure sores. Waterlow scores were reasonably well recorded for elderly medical patients on surgical wards, and there was a smaller proportion at high risk in these wards. The research staff reported that outside the elderly wards, establishing a high risk of pressure sores was not always accompanied by visible or documented interventions to prevent them.

Awaiting discharge

Multi-disciplinary assessments were made involving a wide range of therapists, and there was evidence of discharge planning in advance of the patient being ready to go. In the census 25 out of 168 (15%) were ready to leave of which six people were waiting for a placement to be arranged. These patients came from both specialties.

4. ANALYSIS I - FIELDWORK RESULTS

4.1 Feed-back from fieldwork

Fieldwork took place from Monday 22-Monday 29 March 1999 at Medway Hospital. Debriefing sessions were held with the research nurses in order to discover what problems they had encountered with the data collection, and to provide general observations and comments which would assist in interpreting the results.

The feed-back we received was generally reassuring - the nurses had gained access to the wards and patient records that enabled them to collect information over the eight days on 168 inpatients, and during sixteen ward rounds to new admissions ('post-take' ward round in the Admissions Ward). There were minor problems on the first day, but the study was quickly established and accepted. For the bed census, records kept by ward staff were the main source of information, and this was augmented where necessary by checking details with ward staff. Checks with staff were more likely to clarify something from the written documentation, rather than to ascertain if there were gaps. For example, research staff would check the extent of a patient's condition, ie was the level of confusion or dementia sufficient to be recorded by us (our threshold was equivalent to a score below 7 on the Abbreviated Mental Test). However, the researchers did not check whether discharge plans existed if they had found no record of them in medical notes, nursing notes or on discharge planner sheets.

There was a considerable amount of anecdotal evidence fed back from the study week of patients being moved from bed to bed or from ward to ward. This was seen from the bed census, where a typical route was for patients to come through A&E, to Admissions Ward (B2) then get transferred to a medical ward in A or B block. During the 'post-take' round on B2 it was noted that one patient said she had been moved nine times. Others placed on surgical wards or in the A&E temporary Assessment Unit also faced moves when beds became free in an appropriate ward.

The research nurses gave some feed-back on the standards of care they had observed. They all commented on gaps in the recording of routine patient assessments, and when assessments had been made there was incomplete evidence that the appropriate interventions had been carried out. While acknowledging that these were features of a busy and overloaded hospital, it was clear that they were not in the patients' best interests. There was one occasion where staff on a surgical ward did not arrange necessary therapy for an elderly patient because they did not realise it could be ordered and cross-charged.

These comments have been helpful in interpreting the data and discussing its implications.

4.2 Bed Bureau data - occupancy of Medway Hospital beds during the study period

The source of this information was the bed bureau run by Medway NHS Trust which was chosen because all wards and beds on the site were monitored. Information was held on a wall chart,

with the name of the patient in each bed, and was constantly being updated. To reflect the overnight occupancy, bed bureau staff were asked to extract the occupancy situation for us each day at 9am. A suitable form for this was agreed and is shown in Appendix 3.

The data showed the number of beds available (table 1), which over recent times, and in particular over the winter period, had expanded to include extra beds (eg 2 beds in the day room in Milton Ward) and an area in the A&E department being turned into a 10-bedded assessment unit which lacked adequate toilet and bathroom facilities.

Table 1. Available beds in Medway Hospital

	Medway Hospital	Elderly medicine wards (A block)	Admissions ward (B2)	General medicine wards (B1, B3, B4)	A&E (including Assessment Unit), CCU, ITU
Available beds March 1999	398	74	29	90	21
Additional beds since Oct 1998	3	2		1	

The average occupancy of Medway Hospital over the study period was 97.7% on weekdays and 88.7% on week-end days (table 2). Over this period, occupancy on the adult and elderly medicine wards was slightly higher - around 99% in general medicine wards at all times and in the elderly medicine wards on weekdays, falling to 96% in elderly medicine wards at the weekend and throughout the week in the shared Admissions Ward (B2).

Table 2. Occupancy by ward in Medway Hospital (22-29 March 1999)

	Medway Hospital	Elderly medicine wards (A block)	Admissions ward (B2)	General medicine wards (B1, B3, B4)	Surgical wards (C and D blocks, including Phoenix)
Average weekday occupancy	97.7%	99.1%	96.0%	99.4%	96.0%
Average week-end occupancy	88.7%	96.6%	96.6%	99.4%	85.5%

4.3 Bed Bureau data - location of all adult and elderly medical patients

Having looked at patients by the ward they occupied, we next examined them by specialty. On average there were 72.5 elderly medicine patients in the 74 beds in A block wards, and 84.6 adult medicine patients in the 90 beds in B block (excluding Admissions Ward). However, more patients from these two specialties were spread around the hospital, some filling up each other's beds, some were in A&E/CCU/ITU beds, with the remainder placed in surgical wards. The data we received from the bed bureau wall chart showed the patients who were placed in an available

bed but not in the ward most suited to their condition. These were referred to as 'outliers'.

We regarded it as appropriate for both adult and elderly medical patients to be in various parts of the A&E and admissions areas or in coronary care/ intensive treatment units. For the purposes of this study inappropriately placed patients were those on surgical wards or on each other's wards and average numbers of these are shown in bold type. However, those placed on surgical wards are of greatest significance to this study, and on average each day there were 14.4 elderly medicine and 6.1 general medicine patients placed on these wards (see table 3).

Table 3. Location of medical patients in Medway Hospital (22-29 March 1999)

Average patients/day	Elderly medicine patients	General medicine patients
A&E/ CCU/ ITU	0.4	1.5
Admissions (B2) Ward	10.8	17.1
Elderly medicine wards	72.5	0.5
General medicine wards	5.4	84.6
Surgical wards	14.4	6.1
All areas	103.5	109.8

If for the moment we assume that inpatients during the study needed to be in Medway Hospital, then the average number per day gives an indication of the number of beds required for their care. For example, with 80% occupancy the number of elderly medicine patients would need 129 beds and general medicine patients would need 137. The corresponding figures with a 90% occupancy (which may be more feasible for longer stay patients) are 115 elderly and 122 adult medicine beds. Currently there are 74 elderly and 90 adult beds plus the shared 29 beds in the Admissions Ward. Using the 90% occupancy, a simplistic calculation suggests 30 more beds for the elderly and 17 more for adult medicine are needed for the number of inpatients during the study period.

The question of provision must of course be balanced with an analysis of our other two sources of data, namely the admission process and the characteristics of the patients occupying the beds. However this increase is likely to be offset by a concomitant decreased need if it could be shown that there were inappropriate admissions and inappropriate days of stay.

4.4 New admissions seen during the 'post-take' ward round

The 'post-take' ward rounds on Admissions Ward (B2) give an indication of the flow of emergency medical patients into the hospital. These rounds were done by the elderly medicine and general medicine teams at 9.30am each day, when all new patients were seen. Although the ward rounds were simultaneous they were conducted separately by the two teams. Information

on these was recorded on the 'post-take' proforma shown in Appendix 3.

Over the study period 132 new patients were seen, of which 77 were admissions of people aged 65 and over - 48 to elderly medicine and 29 to general medicine. (When new admissions of all ages are considered, the general medicine round saw on average 9.5 people on weekdays and 13.5 people on weekend days.) The analysis of admissions that follows focuses on people aged 65 and over and excludes all younger medical admissions.

On average, there were around 4-5 patients aged 65+ being admitted to each specialty on weekdays. In both specialties the numbers varied up or down each day, ie from one or two on slack days to six or eight on busy days. At the weekend there were twice as many patients admitted to elderly medicine (9.5 patients per day), while admissions of those aged 65+ to general medicine stayed the same (see table 4). Although based on the experience of single weekend the data could be artefact, but they may reflect differences in primary care risk management. Either way, these data do indicate a different pattern of admission for elderly people at weekends and warrant further investigation.

Table 4. Admissions aged 65+ to elderly and general medicine (March 1999)

Average admissions/day	Elderly medicine	General medicine	Both specialties
Weekdays	4.8 (range 2-8)	3.5 (range 1-6)	8.3 (range 3-11)
Week end	9.5 (range 8-11)	4.0 (range 2-6)	13.5 (range 13-14)

During the study period the Admissions Ward and the temporary 10-bedded Assessment Unit in the A&E department were unable to fully meet the demand. On these occasions the 'post-take' rounds had to travel to other parts of the hospital where the new admissions had been lodged. It was quite common for the general medicine team to visit two or more other wards on their 'post-take' round each day, but this only happened rarely for their older patients (one in an elderly ward, one in the Assessment Unit and one in a surgical ward). The elderly medicine team typically visited patients in one or two other areas each day, but these locations often turned out to be the elderly medicine wards in A block. Out of 19 elderly medicine patients seen away from the Admissions Ward, only three were in surgical wards and two in the A&E department resuscitation area.

Apart from one patient all were assigned to a consultant in line with the age policy. Research nurses collecting data reported occasional errors in calculating a patient's age and if these were spotted the patient was immediately passed to the appropriate consultant on the basis of age. The one patient was aged 73 and seen by the elderly team on a busy weekend day, but responsibility was handed to the general medicine consultant. Otherwise the age policy for medical admissions was followed during the study period. Responsibility was occasionally shared between Medway and Thames Gateway trusts. This happened for three patients receiving shared care from both a surgical team (Medway) and the elderly medical team (Thames Gateway).

We asked on what basis responsibility was given to either specialty, whether the decision was made purely on the age policy or whether it was based on other factors such as diagnosis or treatment. This was not an easy question to answer if the age policy dominated (as seemed to be the case), and in both specialties the age policy was most frequently cited. However, for a half the elderly medicine patients and for one third the general medicine patients we were told that the decision was on the basis of other factors. Answers appeared to vary according to the views of individual doctors, and on any one day they tended to stick to the same reply for all the patients they saw.

Table 5. Basis for taking responsibility for older medical patients

Basis for decision	Elderly medicine	General medicine
Age policy	65%	48%
Diagnosis	21%	17%
Treatment	13%	24%
Other	2%	10%

An important part of the data collection during the 'post-take' ward round was to ask where the most appropriate place for care would be had there not been an age policy. The survey showed that over a quarter of elderly and one sixth of general medicine patients would have been better placed elsewhere. Of the five general medicine patients, one was considered to have the medical needs appropriate for the Intensive Care Unit, and four would have been better on a medical ward other than the busy Admissions Ward. The patients' needs for nursing care or physiotherapy were given as the reasons that the medical wards would have been better for these patients.

For a larger number (13) of elderly medicine patients the Admissions Ward was not considered the best place. Five of the elderly patients would have been more appropriately placed in community hospitals for rehabilitation. Another four would have been better in an elderly ward for a range of reasons including access to Occupational Therapy. Four were considered to need care in other specialist areas - one in CCU, one in a specialist chest ward and two in surgical wards.

Overall, the 'post-take' ward round analysis showed that the age policy method of allocating patients to adult and elderly medicine had not left either specialty with patients they felt would have been more appropriately placed with the other. However, in both specialties there were a proportion of patients which consultants felt would benefit from more specialist care, such as more intensive care (CCU/ITU) or rehabilitation in a community hospital bed - these proportions were 17% of elderly medicine patients and 27% of general medicine. This is consistent with expected levels of inter-specialty movement.

5. ANALYSIS II - DETAILED FINDINGS OF THE BED CENSUS

The following information was collected on a sample of medical patients over 65 years old (see Appendix 3 for data collection proforma):

- age, gender,
- diagnosis,
- care on admission and current care and length of stay,
- assessment and discharge plans,
- dependency.

The data described the current consultant episode, so 'care on admission' referred to the first day in that specialty. For patients who had come straight through the normal admissions route, the information started from their arrival in A&E. For any patients who had received care from another specialty, then the information was collected from the first day they were transferred to the current consultant.

This section presents the results of the census, highlighting differences by specialty (Consultant Care) and location of patients (Nursing Care). An analysis by four age groups (65-74, 75-79, 80-84 and 85 and over) was carried out but is not included as it added very little to the results. Because of the age policy, all analyses shown by specialty are virtually the same as had we shown analysis by under and over 75 years of age.

5.1 Patients included in the Census

Information on 168 patients was collected during the census, covering a sample of elderly medicine and general medicine patients aged 65 and over. The number and percentage of census patients in each ward and by specialty is shown in the table below.

Just over half of the patients (54%) were under the care of an Elderly Medicine Consultant and just under half (46%) by a General Medicine Consultants (these included six patients in B4 under Clinical Haematology).

Ward	Specialty					
	Total		Elderly Medicine		General Medicine	
	No	%	No	%	No	%
Bryon	22	13	22	24	-	-
Milton	17	10	17	19	-	-
Tennyson	19	11	19	21	-	-
B1	16	10	1	1	15	19
B2	21	13	6	7	15	19
B3	21	13	2	2	19	24
B4	25	15	3	3	22	28
C Wards	2	1	1	1	1	1
D Wards	25	15	19	21	6	8

Two-thirds of the elderly medicine patients were correctly located in A block. However, of the remaining third 7% were still in B2, the admission ward, whilst a similar proportion were in other general medicine wards. Roughly one in five of patients over the age of 75 years were based in a surgical ward, in particular D wards.

Looking at the general medicine patients aged 65 and over a similar pattern was found. Seven out of ten are correctly located in B1, B3 and B4 but 21% are still in the admission ward (B2). None were located in A block but 9% were in surgical wards, especially D wards. Patients in the admission ward (B2) were more likely to be less than 75 years old - 19% of under 75s were in B2 compared with 7% of the 75 and over age group. The converse is the situation in the surgical wards (C and D) where 20% of those aged over 75 are located and 12% of the under 75 years olds.

	Total	Specialty	
		Elderly Medicine	General Medicine
	%	%	%
A Wards	35	64	0
B2	13	7	19
Other B Wards	36	7	72
C/D Wards	16	22	9

Most patients in general medicine were under the age of 75, apart from the six patients (of which three were the Clinical Haematology patients). One in sixteen of elderly medicine patients was less than 75 years old. The remaining patients were spread across the three age bands, with 37% being 65-74, 24% 80-84 and 32% aged 85 or over.

Age	Total	Specialty	
		Elderly Medicine	General Medicine
	%	%	%
65 – 74	46	7	92
75 – 79	22	37	5
80 – 84	14	24	3
85 or over	17	32	-

Overall there were more women (61%) patients than men. However, although elderly medicine has considerably more females than male patients, general medicine patients over 65 are biased towards males.

	Specialty		
	Total	Elderly Medicine	General Medicine
	%	%	%
Male	39	26	55
Female	61	74	45

In terms of where patients were located males were more likely to be placed in the B2 ward whereas females were more likely to be located in C and D wards.

	Ward where patient located			
	A	B2	Other B	C/D
	%	%	%	%
Male	26	55	43	30
Female	74	45	57	70

5.2 Principle Diagnosis and other Complications

From the patients' notes the main reason for admission was noted as well as any other complications or concurrent diseases which would affect the patients' current care and treatment. All diseases were subsequently coded based on the ICD-10 codes. Three chapters of the ICD-10 classification were divided into more detailed groupings. These were neoplasms: into malignant and non-malignant; diseases of the circulatory system: into heart disease, circulation problems and cerebral; and diseases of the genitourinary system: into urinary tract infection and renal failure. (See Appendix 2 for further details).

The table below shows the principle diagnosis by medical specialty. There was a wide spread of diagnoses in patients from both specialties. Those affecting the largest numbers of patients were diseases of the respiratory system, circulatory - heart, and circulatory - cerebral. Comparing the two specialties, elderly medicine patients were more likely to present with endocrine, nutritional & metabolic diseases, injury/fractures and falls, whilst general medicine patients were more likely to present with diseases of the respiratory system.

	Specialty		
	Total	Elderly Medicine	General Medicine
Based on ICD-10 codes	%	%	%
Infectious/Parasitic Disease	5	7	4

Neoplasms - Malignant	2	-	5
Neoplasms - Tumours	2	3	-
Diseases of blood	3	1	5
Endocrine, Nutritional & Metabolic	6	9	3
Mental & Behavioural disorders	1	2	-
Diseases of the Nervous System	1	2	-
Circulatory - Heart	14	14	14
Circulatory - Circulation	5	6	4
Circulatory - Cerebral	13	10	15
Diseases of Respiratory System	18	12	26
Diseases of Digestive System	6	6	6
Disease of Skin	1	1	1
Diseases of Musculoskeletal System	1	1	-
Genitourinary - Renal	2	2	1
Injury/fractures	5	9	-
General Symptoms - Body Pain	8	7	10
General Symptoms - Falls	2	4	-
Symptoms Not elsewhere classified	4	3	4
Poisoning	1	-	1

The following table shows the number of patients by principle diagnosis by the ward they are located in (regardless of specialty). Patients with injury/fractures and symptoms not elsewhere classified (eg collapse, confusion, dizziness) were more likely to be in the C and D wards. Those with diseases of the respiratory system were more likely to be in a B ward while patients with cerebral diseases and heart diseases were found in all wards.

	Ward where patient located			
	A Wards	B2 Ward	Other B Wards	C & D Wards
Based on ICD-10 codes	% (58)	% (21)	% (62)	% (27)
Infectious/Parasitic Disease	7	5	3	7
Neoplasms - Malignant	-	-	6	-
Neoplasms - Tumours	5	-	-	-

Diseases of blood	2	10	3	-
Endocrine, Nutritional & Metabolic	12	-	3	4
Mental & Behavioural disorders	3	-	-	-
Diseases of the Nervous System	2	-	-	4
Circulatory - Heart	14	14	18	7
Circulatory - Circulation	2	10	5	7
Circulatory - Cerebral	12	5	16	11
Diseases of Respiratory System	12	29	26	7
Diseases of Digestive System	7	19	3	-
Disease of Skin	2	-	2	-
Diseases of Musculoskeletal System	-	-	-	4
Genitourinary - Renal	-	-	2	7
Injury/fractures	7	-	-	15
General Symptoms - Body Pain	5	5	11	11
General Symptoms - Falls	5	5	-	-
Symptoms Not elsewhere classified	3	-	2	11
Poisoning	-	-	-	4

Nine out of ten (89%) of patients had a secondary complication, with little variation in this proportion across ages or specialties. On average patients had 1.5 other complications and concurrent diseases, with little difference between the two specialities (1.5 for elderly medicine and 1.4 for general medicine patients). The number of complications varied by the ward the patients were located with C and D Ward outliers having less complications and those on A block having the most complications.

Total	1.49
Specialty	
Elderly Medicine	1.54
General Medicine	1.44
Age	
Less than 75 years	1.47
75 or over	1.51
Ward	
A	1.74
B2	1.50
Other B	1.41
C/D wards	1.15

The table below shows the other complications and concurrent diseases suffered by patients. The diagnoses were similar across the two specialities with the two highest being circulatory - heart and diseases of the respiratory system.

	Total	Specialty	
		Elderly Medicine	General Medicine
Based on ICD-10 codes	%	%	%
No other complications	11	10	13
Infectious/Parasitic Disease	2	1	3
Neoplasms - Malignant	3	3	3
Neoplasms - Tumours	2	2	2
Diseases of blood	3	3	3
Endocrine, Nutritional & Metabolic	7	6	9
Mental & Behavioural disorders	5	5	4
Diseases of the Nervous System	4	4	3
Diseases of the Eye	1	1	1
Circulatory - Heart	15	14	16
Circulatory - Circulation	8	8	7
Circulatory - Cerebral	6	6	5
Diseases of Respiratory System	12	12	13
Diseases of Digestive System	5	3	7
Disease of Skin	1	1	2
Diseases of Musculoskeletal System	4	6	2
Genitourinary - Urinary Tract	3	4	2
Genitourinary - Renal	2	3	2
Injury/fractures	2	3	-
General Symptoms - Body Pain	1	1	2
General Symptoms - Falls	1	1	-
Symptoms Not elsewhere classified	2	4	1
Self neglect	1	-	2

5.3 Details of Admission

Details of admission were obtained including length of time since the patient was admitted, the category and route of their admission.

There was a large difference in terms of the number of days since admitted, with a few patients having spent over a month in Medway Hospital. For elderly medicine the length of the stay since admission varied between 2 days and 47 days, whilst for general medicine the spread was between 2 days and 67 days.

The average length of the stay across patients in the census was 14 days, with general medicine patients having been there longer (average stay 16 days, range 2 - 67 days) than elderly medicine patients (average stay 13 days, range 2 - 46 days). The picture is the same when we look at length of stay by age, with those over 75 having an average stay of 13 days and those less than 75 an average stay of 16 days.

Days since admitted	Specialty		
	Total	Elderly Medicine	General Medicine
	%	%	%
Two - three days	11	9	14
Four - five days	13	11	14
Six - seven days	18	18	18
Between 8 and 14 days	24	31	15
Between 15 and 21 days	12	14	9
Between 22 and 28 days	9	10	8
Between 29 and 35 days	5	3	6
Between 36 and 42 days	4	1	6
Over 42 days	5	2	8

Patients located in B2 (the admission ward) were more recently admitted with the average stay being 4 days (range 2 - 7 days). On A block the average stay was 13 days (range 2 - 46 days), similar to the length of a stay of those in C and D wards (range 2 - 35 days). Patients in other B wards (B1, B3, B4) had the longer average stay of 20 days (range 2-67 days). 14% of patients on A block had a length of stay longer than the expected maximum length of a stay of 15 days (Operational Policy, Medway Hospital Elderly Directorate).

For each patient a category of admission was recorded based on the patient notes. The majority of admissions were acute with only 4% planned. There was no difference by age or where the patient was located.

Category of admission	Specialty		
	Total	Elderly Medicine	General Medicine
	%	%	%
Acute	95	93	96
Planned	4	4	4

Most patients were admitted through the A & E department. A handful of patients (4%) had come via another ward, for example CCU, orthopaedics, and 4% had come through a clinic (OPA, anti-coagulant clinic). 6% of the elderly medicine patients had come via a Community Hospital and 1 patient had been transferred from Kings. 3% of patients had come from home, and these were, in the main, general medicine patients.

Patients in B1, B3, B4 wards are most likely to be patients admitted through a clinic whilst those in B2 and C and D wards are most likely to have come via A & E.

Route of admission	Total	Elderly Medicine	General Medicine
	%	%	%
Domiciliary	3	1	5
A & E	86	87	85
Internal transfer	4	4	3
OPA/Clinic	4	1	8
Transfer from other hospital within trust eg Sheppey	3	6	-
Transfer from Kings, London	1	1	-

The majority of patients do not have a planned length of stay.

5.4 Care on Admission

From the patient notes (including nursing records) levels of care on admission were recorded.

On admission most patients (64%) required acute medical and nursing care (defined as '24 hours nursing and medical attention'). Three in ten patients required sub acute medical and nursing care (defined as 'with a stable illness needing care greater than that provided at home but not 24 hours of nursing/medical attention'). Only a few patients required post acute care. There is no difference in the care required at admission for elderly medicine and general medicine patients.

Overall Care	Total	Elderly Medicine	General Medicine
	%	%	%
Acute medical and nursing care	64	64	64
Sub-acute medical and nursing care	30	29	31
Post acute: fast stream rehabilitation	2	2	3
Post acute: slow stream rehabilitation	1	2	-
Post acute: convalescent	1	1	-
Palliative Care	1	-	1
Respite	-	-	-

Patients located on B2 are more likely to require acute medical and nursing care whilst those on other B wards are more likely to require sub acute medical and nursing care. 7% of patients in C and D wards were post acute.

	Total %	Ward where patient located			
		A %	B2 %	Other B %	C/D %
Overall Care					
Acute medical and nursing care	64	66	81	57	67
Sub-acute medical and nursing care	30	28	19	38	26
Post acute: fast stream rehabilitation	2	3	-	3	-
Post acute: slow stream rehabilitation	1	-	-	-	7
Post acute: convalescent	1	2	-	-	-
Palliative Care	1	-	-	2	-
Respite	-	-	-	-	-

Just over a third (37%) of patients required intensive 24 hour medical care on admission, while 58% required a low level (daily) medical care. One in twenty were awaiting investigation. General medicine patients have a slightly higher requirement for intensive 24 hour medical care, than elderly medicine patients.

	Total %	Specialty	
		Elderly Medicine %	General Medicine %
Medical care			
Intensive 24 hour medical care	37	32	42
Low level (daily) medical care	58	62	53
Awaiting investigation/placement	5	6	4

Patients located on B1, B3 and B4 are more likely to require intensive 24 hour medical care whilst those on B2 were more likely to require low level (daily) medical care.

	Total %	Ward where patient located			
		A %	B2 %	Other B %	C/D %
Medical care					
Intensive 24 hour medical care	37	37	29	46	26
Low level (daily) medical care	58	55	71	49	70
Awaiting investigation/placement	5	8	-	5	4

The number of days at which the medical care on admission was required was recorded. This was analysed as a proportion of the length of stay to date. One in ten patients were still at the same level of medical care as when they had been admitted, while a third had stayed at the same level for over half of their stay. Elderly medicine patients are more likely to required the same level of care, than the general medicine patients.

There were differences between the requirements of the elderly and general medicine patients. Four out of ten elderly medicine patients required sub-acute care. Of the remaining patients their care was spread across all the remaining categories. One in ten (11%) were awaiting discharge. For general medicine patients the majority (62%) required sub-acute care with one in eight requiring acute care. One in six needed post acute care, predominantly fast stream rehabilitation and 6% were awaiting discharge. (See Section 3.5 for more details about discharge plans).

	Specialty		
	Total	Elderly Medicine	General Medicine
Overall Care	%	%	%
Acute medical and nursing care	15	18	13
Sub-acute medical and nursing care	51	41	62
Post acute: fast stream rehabilitation	12	12	12
Post acute: slow stream rehabilitation	7	10	3
Post acute: convalescent	4	7	1
Palliative Care	2	1	4
Awaiting discharge	9	11	6

Patients located on B2 are more likely to require acute medical and nursing care (they were also more recent admissions than patients on the other wards). Three out of ten patients in C and D wards were post acute with the majority being slow stream rehabilitation. In A block 14% of patients were awaiting discharge and 11% of those on surgical wards (C/D).

	Ward where patient located				
	Total	A	B2	Other B	C/D
Overall Care	%	%	%	%	%
Acute medical and nursing care	15	17	33	8	15
Sub-acute medical and nursing care	51	36	62	63	44
Post acute: fast stream rehabilitation	12	14	-	16	7
Post acute: slow stream rehabilitation	7	9	-	-	22
Post acute: convalescent	4	9	5	2	-
Palliative Care	2	2	-	5	-
Awaiting Discharge	9	14	-	6	11

The table below shows the changes in overall care between admission and needs at the time of the audit (current). Of those patients requiring acute medical and nursing care on admission, the majority no longer required that level of nursing (22% still required acute care). A half of these patients required sub-acute care at the time of the audit.

Of those who required sub-acute medical and nursing care on admission roughly half (54%) still required that level of care at the time of the audit. A further quarter required post acute care and 10% were awaiting discharge.

Patients who required post-acute care, on admission, still needed that level of care, however these are all based on very small samples.

	Overall Care on Admission				
	Acute	Sub-acute	Post acute: fast	Post acute: slow	Post acute : Conv
Current Overall Care	Sample Size (108)	(50)	(4)	(2)	(1)
	%	%	%	%	%
Acute medical and nursing care	22	4	-	-	-
Sub-acute medical and nursing care	52	54	-	-	-
Post acute: fast stream rehabilitation	7	14	100	50	-
Post acute: slow stream rehabilitation	6	8	-	50	-
Post acute: convalescent	3	6	-	-	100
Palliative Care	1	4	-	-	-
Awaiting Discharge	9	10	-	-	-

The majority of patients currently required low level (daily) medical care and three in ten were awaiting investigation or placement. Only 5% of patients were requiring intensive 24 hour medical care. General medicine patients have a slightly higher requirement for low level medical care while elderly medicine patients were more likely to be awaiting investigation or placement.

	Specialty		
	Total	Elderly Medicine	General Medicine
Medical care	%	%	%
Intensive 24 hour medical care	5	4	5
Low level (daily) medical care	65	60	72
Awaiting investigation/placement	30	36	23

There was no differences in the level of intensive medical care required across the wards. Patients located on A block were more likely to be awaiting investigation or placement than the general medicine ward patients.

	Ward where patient located				
	Total	A	B2	Other B	C/D
Medical care	%	%	%	%	%
Intensive 24 hour medical care	5	5	5	5	4
Low level (daily) medical care	65	59	71	71	63
Awaiting investigation/placement	30	36	24	24	33

The table below shows the changes in medical care between admission and needs at the time of the audit (current). Of those patients requiring intensive 24 hour medical care on admission, the majority (75%) required low level (daily) medical care at the time of the audit. Of those

requiring low level at admission the majority (63%) still require that level of medical care while a third were awaiting investigation or placement.

	Medical Needs on Admission		
	Intensive	Low level	Awaiting
Sample Size	(59)	(91)	(8)
Current Medical Needs	%	%	%
Intensive 24 hour medical care	10	1	-
Low level (daily) medical care	75	63	50
Awaiting investigation/placement	15	36	50

Most patients' current level of nursing needs were minimal, 56% of elderly medicine patients and 68% of general medicine patients. Just under a third required intermediate care (defined as '2 nurses required for some procedures'), required by slightly more elderly medicine patients (36%) than general medicine patients (26%). Only one in twelve patients were requiring intensive nursing (defined as '2 nurses required for all procedures') at the time of the audit.

	Total	Specialty	
		Elderly Medicine	General Medicine
Nursing care	%	%	%
Intensive	8	9	6
Intermediate	31	36	26
Minimal	61	56	68

Patients located on B2 ward are more likely to require intensive nursing care than those located on other wards while those located in the surgical wards (C/D) were more likely to require intermediate nursing care.

	Total	Ward where patient located			
		A	B2	Other B	C/D
Nursing care	%	%	%	%	%
Intensive	8	9	14	5	7
Intermediate	31	29	24	26	52
Minimal	61	62	62	69	41

The table below shows the changes in nursing care between admission and needs at the time of the audit (current). Of those patients who required intensive nursing needs on admission, 44% currently required that level of nursing while a quarter currently required intermediate nursing care and 30% minimal nursing. Half of the patients requiring intermediate nursing on admission currently required minimal nursing care. Of the patients who required minimal nursing care on admission the majority still required that level of nursing, however one patient now requires intensive care and another patient requires intermediate nursing care.

	Nursing Needs on Admission		
	Intensive	Intermediate	Minimal
Sample Size	(27)	(86)	(51)
Current Nursing Needs	%	%	%
Intensive	44	-	2
Intermediate	26	50	2
Minimal	30	50	96

5.6 Assessment and Discharge Planning

It was recorded whether or not the patients had had a full assessment, and if so who was involved in it. Eight out of ten patients had an assessment. The nurse and consultant were involved in most assessments, with the physiotherapist slightly less so. An occupational therapist was involved in roughly half of assessments and the Social Services/Care Manager or dietician in a third. There were no significant differences between those involved in the assessments of elderly medicine and general medicine patients.

Multi-disciplinary assessment	Total	Specialty		
		Elderly Medicine	General Medicine	
	%	%	%	
Yes	79	80	78	
No	21	20	22	
Person involved	Sample Size	(132)	(72)	(60)
	%	%	%	
Nurse	95	94	95	
Consultant	98	94	100	
Physiotherapist	63	65	60	
Occupational Therapist	46	51	40	
Social Services/Care Manager	33	38	27	
Dietician	32	33	30	
Speech Therapist	12	15	8	
Palliative Care Team	6	6	7	
Chiropodist	3	1	5	
Rapid Response Team	2	0	5	
Other	6	3	10	

The following analysis is based on those patients where the information was available to our interviewer. Just over a half of patients had had a care package drawn up, with the proportion among general medicine patients (59%) being slightly higher than among the elderly medicine patients (44%).

	Total	Specialty	
		Elderly Medicine	General Medicine
Sample size	(168)	(90)	(76)
	%	%	%
Care package drawn up	52	44	59

15% of patients were ready to leave the hospital, with a higher proportion of these being elderly medicine patients (21%), than general medicine patients (8%). Of these 25 patients, 52% (13 patients) required a placement other than their normal place of residency. Elderly medicine patients (58%) were more likely to require a placement than general medicine patients (33%).

Of those patients requiring a placement just under a half (6 patients) were still awaiting a placement. Four of these patients were elderly medicine patients and one was a general medicine patient. Four of the five elderly medicine patients were awaiting placement in a community hospital and the other an EMI bed. The general medicine patient was awaiting a placement in a residential home.

	Total	Specialty	
		Elderly Medicine	General Medicine
	%	%	%
Patient ready to go home	15	21	8
	(25)	(19)	(6)
Patient needs a placement	52	58	33
	(13)	(11)	(2)
Patient still awaiting placement	46	45	50

The audit also found 22 patients who, although not ready for discharge, will require a placement which has not yet been secured. Two-thirds of these patients (14) were elderly medicine patients and will require a placement in a community hospital (8), nursing home (1), step down bed (1), not yet decided (3) and other (1). The 8 general medicine patients will require placements in a community hospital (2), a residential home (2), a nursing home (1), not yet decided (2) and other (1).

5.7 Dependency Assessment

Three assessments were originally included on the proforma - the Barthel Dependency (ADL), Waterlow Score (pressure sores) and mental awareness. Assessments were made from a combination of details from patients' notes and talking to ward staff. The patients were not themselves interviewed. The Barthel Dependency assessment was found not to be used on any of the wards and was therefore not available.

A Waterlow score was recorded for the majority of patients (88%), and was usually taken from patient notes. Scores were divided into four groups, no risk (under 10), at risk (10-14), high risk (15-19) and very high risk (20 or over). The majority of patients were at risk from pressure sores, with a 18% at very high risk, 28% at high risk and 23% at risk. Only one in five were not at risk.

Elderly medicine patients were slightly more at risk. As age is an important factor in the scoring it would be expected that the elderly medicine patients would be more at risk, as they are older.

	Total	Specialty	
		Elderly Medicine	General Medicine
Waterlow	%	%	%
No risk	19	14	24
At risk	23	24	23
High risk	28	31	24
Very high risk	18	21	14
Not available	12	10	14

The majority of patients where Waterlow scores were not found in the patient notes were based in B2 (67% not available). Patients located in A block and other B wards were more at risk from pressure sores than patients based in other wards.

	Total	Ward where patient located			
		A	B2	Other B	C/D
	%	%	%	%	%
No risk	19	12	14	21	26
At risk	23	21	19	23	26
High risk	28	33	-	35	11
Very high risk	18	33	-	21	22
Not available	12	2	67	-	15

The Waterlow scores by age groups table below shows that the older the patients the more likely they are to be at risk from pressure sores, in particular at very high risk.

	Total	Age of patient			
		65-74	75-79	80-84	85+
	%	%	%	%	%
No risk	19	26	19	8	3
At risk	23	23	11	38	21
High risk	28	23	30	29	28
Very high risk	18	13	35	13	41
Not available	12	15	5	13	7

It was not considered appropriate to ask patients to complete a standardized mental awareness test so patients were categorised into two groups, those aware/articulate and those confused/muddled. Details of 98% of patients were recorded using this simplified scale.

Two-thirds of patients were orientated (67%), with 30% confused/muddled. Elderly medicine patients were much more likely to be confused (41%) than general medicine patients.

In terms of where patients were located, A block had the most patients who were confused (47%), however a third of those located in surgical wards (C/D) were also confused, against only 23% in B wards and 5% in B2.

	Specialty		
	Total	Elderly Medicine	General Medicine
	%	%	%
Mentally Aware	67	56	81
Confused/Muddled	30	41	18
Missing	2	3	1

APPENDIX 1 MEMBERS OF THE OVERSEEING GROUP

Thames Gateway Dr Michael Haywood, Clinical Director (Elderly Care)

Bob Sheridan, General Manager

Medway Dr Gray Smith-Laing, Clinical Director (Medicine)

Helen Belcher, General Manager

West Kent HA Dr Mike Vaile, Director of Public Health

Ed Marsden, Business Manager

SEIPH Dr Declan O'Neill, Director of R&D

Appendix 2 Classification of Diagnoses (Based on ICD-10)

- 01 Certain infectious and parasitic diseases, eg diarrhoea, TB, fever, chest infection
- 02 Neoplasms a) malignant neoplasms/CA/leukemia
- 03 Neoplasms b) tumours, eg lumps, dysplasia, myoma
- 04 Diseases of the blood, eg anaemia, Vitamin B deficiency, hypokalaemia, pancytopenia, low HB, CLL, thrombocytopenia
- 05 Endocrine, nutritional and metabolic disease, eg diabetics, NIDDM malnutrition, obesity, constipation, hypothyroidism, hyperglycaemia, dehydration
- 06 Mental and behavioural disorders, eg dementia (including Alzheimer), depression
- 07 Diseases of the nervous system, eg epilepsy, MS, Parkinson, neuropathy
- 08 Diseases of the eyes, eg cataract, eye abnormality
- 10 Diseases of the circulatory system a) heart disease, eg angina, MI, CCF, atrial fibrillation, thyrotoxicosis
- 11 Diseases of the circulatory system b) circulation, eg leg ulcers, pressure sores, thrombosis, gangrene, oedema, hypertension, amputee, PVD, PE, DVT
- 12 Diseases of the circulatory system c) cerebral, eg CVA, TIA, hemiplegia, cerebral infarct, dysphasia
- 13 Diseases of the respiratory system, eg asthma, SOB, pneumonia, influenza, bronchitis, COAD, chronic lung disease, pleuritic, haematemesis
- 14 Diseases of the digestive system, eg gastric ulcer, hernia, GI bleed, vomiting, Crohn's disease, dysphagic, cholestyitis, gall bladder ascites
- 15 Diseases of the skin, eg cellulitis, erythematous
- 16 Diseases of the musculoskeletal system, eg arthritis, osteoporosis, cervical spondylolysis, gout, right hemi arthroplasty
- 17 Disease of the genitourinary system a) UTI, urinary tract infection, turp, prostatic
- 18 Disease of the genitourinary system b) renal failure, other
- 19 Injury, eg fracture, head injury
- 20 General symptoms a) body pain, chest pains, back pain, abdominal pain, headaches
- 21 General symptoms b) falls
- 23 Symptoms not elsewhere classified - acute confusion, dizziness, collapse, unconscious, vertigo, poor mobility, unwell
- 24 Self neglect
- 25 Poisoning, eg paracetamol overdose

4 CARE ON ADMISSION (After Consultant/Nurse assessment)

a Overall Care
Record which option best described the needs of the patient on admission?

RECORD ONE ONLY

- Acute medical and nursing care (24 hours nursing and medical attention) 1
- Sub acute medical and nursing care (with a stable illness needing care greater than that provided at home but not 24 hours of nursing/medical attention) 2
- Post acute: fast stream rehabilitation 3
- Post acute:slow stream rehabilitation (not expected to return to full function/partial recovery) 4
- Post acute: convalescent 5
- Palliative Care 6
- Respite 7

b Medical Needs
Record what level of medical care the patient needed on admission?

RECORD ONE ONLY

- 24 hour monitoring (IV/Fluids etc) 1
- 2

- CATEGORIES BEING AMENDED - AWAITING 3
- NEW CATEGORIES 4
- 5

And for how many days did the patient require this level of medical care _____ days

b Nursing Care
Record what level of nursing care the patient needed on admission?

RECORD ONE ONLY

- CATEGORIES BEING AMENDED - AWAITING 1
- CATEGORIES 2
- 3

and for how many days did the patient require this level of nursing care _____ days

5 CURRENT CARE

a Overall Care
Record the category which best describes the needs of the patient **now**?

RECORD ONE ONLY

- Acute medical and nursing care (24 hours nursing and medical attention) 1
- Sub-acute medical and nursing care (with a stable illness needing care greater than that provided at home but not 24 hours of nursing/medical attention) 2
- Post acute: fast stream rehabilitation 3
- Post acute: slow stream rehabilitation 4
- Post acute: convalescent 5
- Awaiting discharge 6

<p>b Medical Needs Record the category which best describes the medical needs of the patient now? RECORD ONE ONLY</p>	<p>1 2 3 4 5</p>
<p>c Nursing Needs Record the level of nursing care the patient needs now? RECORD ONE ONLY</p>	<p>1 2 3</p>

6 ASSESSMENT AND DISCHARGE PLANNING	
<p>a Has a full assessment, appropriate to this patient, been performed?</p> <p>b IF YES Ring which people have been involved in the assessment</p>	<p>Yes 1 No 2</p> <p>Nurse 1 Consultant 2 Physiotherapist 3 Speech Therapist 4 Dietician 5 Occupational Therapist 6 Social Services/Care Manager 7 Palliative Care Team 8</p>
<p>c Has a care package been drawn up for the patient?</p> <p>d Is the patient ready to go home?</p> <p>e Does the patient need a placement elsewhere?</p> <p>f Has a placement been secured for the patient?</p>	<p>Yes 1 No 2</p> <p>Yes 1 No 2</p> <p>Yes 1 No 2</p> <p>Yes 1 No 2</p>