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Introduction
Heart failure is primarily a disease of older people. The benefits of ACE inhibitors in younger people with left ventricular systolic dysfunction (LVSD) have been clearly defined by major trials. However, to date, older people have been systematically excluded from these studies. Furthermore the mortality benefits shown in the megatrials are probably less relevant to very old people than improvements in functional capacity and quality of life.

Methods
We conducted a randomised double blind placebo controlled trial to determine the effects of Perindopril on exercise capacity in older patients with systolic heart failure. Patients were ACE inhibitor naïve and had LVSD confirmed on echocardiography. Patients were randomised to Perindopril or placebo for 10 weeks. The primary outcome was change in 6-minute walk distance from randomisation to 10 weeks.

Results
73 patients were randomised, 66 (mean age 81 years) completed the study. Mean change in 6-minute walk distance was significantly increased in the treatment group (+37.1m) compared to controls (-0.3m) (p<0.001). One patient on Perindopril had significant hypotension during the test dose and another had a deterioration in renal function. There were no other significant differences in adverse events between patients on Perindopril and placebo.

Conclusion
This is the first study to assess the effects of ACE inhibitors on functional capacity in older patients with systolic heart failure. Perindopril improved exercise capacity, furthermore patients tolerated the test dose, tolerated the treatment and had no significant adverse effects. This study supports the use of ACE inhibitors in frail elderly patients with systolic heart failure.
CLINICAL PRACTICE

IMPACT OF BISOPROLOL ON SYMPTOM CONTROL AND EXERCISE CAPACITY IN OLDER PERSONS WITH CONGESTIVE HEART FAILURE

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Introduction
Older persons were excluded from the large interventional trials of beta blockers in congestive heart failure (CHF). Hence the effect of beta blockers on symptoms in older CHF subjects is unclear. Our aim was to determine the change in symptoms and exercise capacity following commencement of bisoprolol in older persons with stable CHF.

Method
51 subjects were recruited. All had left ventricular systolic dysfunction, and were stabilised on a diuretic and an ACE inhibitor. Subjects received bisoprolol by standard titration regime. Six minute walk distance, Guyatt CHF symptom scale, General health questionnaire (GHQ), Hospital Anxiety and Depression scale (HAD) and Comorbidity symptom scale (CMSS) were recorded before treatment and after reaching maximum tolerated dose.

Results
35 subjects, mean age 78 years (range 70-86), tolerated bisoprolol. Repeat assessment scales were recorded in all subjects. 29 completed repeat 6 minute walking tests. There was no significant change in heart failure symptoms or exercise capacity once maximum tolerated dose of bisoprolol was established. GHQ and HAD scores were significantly lower.

<table>
<thead>
<tr>
<th>Pre-bisoprolol</th>
<th>Post-bisoprolol</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Guyatt</td>
<td>70.2</td>
<td>70.8</td>
</tr>
<tr>
<td>Mean</td>
<td>70.8</td>
<td>13.0</td>
</tr>
<tr>
<td>HAD</td>
<td>8.1</td>
<td>7.0</td>
</tr>
<tr>
<td>GHQ</td>
<td>14.9</td>
<td>8.6</td>
</tr>
<tr>
<td>CMSS</td>
<td>8.9</td>
<td>8.3</td>
</tr>
<tr>
<td>Number</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>6 minute walk</td>
<td>247</td>
<td>281</td>
</tr>
<tr>
<td>(m)</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>p&gt; 0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion
Treatment with bisoprolol in older persons with CHF is not associated with a decline in symptom control or exercise capacity. There was a significant improvement in perceived health status and symptoms of anxiety and depression.

JUNIOR AND SENIOR DECISIONS ON CARDIOPULMONARY RESUSCITATION: FOUR CYCLES OF AUDIT OF A PROFORMA

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Introduction
Guidelines recommend that cardiopulmonary resuscitation (CPR) decisions are the responsibility of the consultant, should be documented in patient notes and discussed with patients and/or relatives. By introducing an admission proforma we aimed to improve documentation of Barthel, Mental Test score (MTS), and develop a CPR policy in line with college guidelines.

Methodology
Data was collected from 78 consecutive discharges in October 1998, and after introduction of a proforma, from 108 inpatients in November 1998. Two further audit cycles of all inpatients were performed, on one day, in May 2000 and February 2001 (n=148 and 140 respectively). Cycles three and four also documented major diagnoses, junior and senior medical decisions, frequency of discussion, reason for decision and patient wishes.

Results
CPR documentation improved from 36% to: 94%; 94% and 99% in cycles two, three and four. CPR decisions correlated poorly with Age or Barthel but strongly (p<0.0001) with MTS. In audits three and four junior doctors documented 50% and 45% of patients ‘for CPR’ respectively; consultant percentages were 27% and 28%. CPR was discussed with patient in 19% of cases. Fifteen of 40 patients offered CPR wished to receive it.

Conclusions
The proforma improved documentation of decisions relating to CPR and provided evidence that decisions were not related to age but to medical problems and cognitive function. Consultants are more likely to document patients as ‘not for’ CPR. Most patients offered CPR do not wish it. The number of patients with whom CPR is discussed is low and may require policy changes.
EFFECT OF AGE ON DYNAMIC CEREBRAL AUTOREGULATION DURING ORTHOSTATIC STRESS

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Introduction
A physiological age-related deterioration in cerebral autoregulation (CA) could potentially explain the increased prevalence of syncope syndromes in older subjects. Dynamic CA is normal in older subjects during supine rest, but the effect of age on dynamic CA during orthostatic stress is unknown.

Methods
After 20 minutes of supine rest, 34 normal subjects ≤40 years (young group) and 25 normal subjects ≥50 years (older group) with no previous history of syncope underwent head-up tilt (HUT) at an angle of 70° for 15 minutes. Bilateral middle cerebral artery blood flow velocity (CBFV) and arterial blood pressure (BP) were measured continuously and non-invasively using transcranial Doppler ultrasound and the Finapres device respectively. Indices of dynamic CA ranging from 0 (absent) to 9 (most efficient) were calculated for each subject for one-minute periods before and after HUT by comparing actual CBFV responses to 10 model-predicted CBFV responses.

Results
Older subjects were a mean of 38 years older than young subjects (67 ± 10 v 29 ± 8 years). CBFV was lower in both groups after HUT (p<0.0001) and mean CBFV was lower in older subjects at all times before (49±13 v 61±14 cm/s; p<0.0001) and after (43±12 v 53±14 cm/s; p=0.0001) HUT. Indices of dynamic CA, however, were similar in young and older groups at all times before (5.7±2.1 v 5.4±2.1; p=0.54) and after (5.9±1.6 v 5.6±2.0; p=0.46) HUT.

Conclusion
Despite age-related decreases in CBFV, dynamic CA is preserved in older subjects during orthostatic stress and does not account for the increased prevalence of syncope syndromes in older subjects.

CHRONIC CARBON MONOXIDE POISONING IN ELDERLY PATIENTS

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Introduction
Chronic carbon monoxide (CO) poisoning is reported as an important and underdiagnosed cause of morbidity and mortality (www.open.gov.uk/doh/cmoh/cmoh.htm). Chronic low level CO poisoning can cause headache, confusion, weakness, nausea and vomiting, symptoms common in elderly patients. Diagnosis requires specific testing. In our hospital carboxy-haemoglobin (COHb) levels are rarely requested and during the previous year no patients were diagnosed with chronic CO poisoning. Our aim was to find out whether CO poisoning was an under recognized problem in our unit.

Methods
Staff were educated about CO poisoning by seminars. Between 1st November 2000 and 31st January 2001 patients were screened on admission to the geriatric unit for CO poisoning. Patients identified by questionnaire as having at least one risk factor for, and one symptom possibly attributable to CO poisoning proceeded to have blood tested for COHb.

Results
102 questionnaires were completed. Completion rate declined throughout the study. 32 blood tests were taken. In 22 (69%) the levels were greater than 1%. 9 blood tests (8 patients) revealed levels greater than 2%; these patients were followed up. Two were found to have correctable faults in their heating systems. Four reported no problems having had their gas boilers serviced. Two declined intervention.

Conclusion
CO poisoning was a possible contributor to ill health in 22 of 102 patients admitted over 3 winter months. 2 of the 32 blood tests lead to the correction of a problem. Admission to hospital is one point at which a diagnosis of CO poisoning should be considered. Education of hospital staff is required to improve detection rate.
CLINICAL PRACTICE

USE OF AN IMPLANTABLE LOOP RECORDER IN THE INVESTIGATION OF UNEXPLAINED SYNCOPE IN OLDER PEOPLE

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Introduction
REVEAL is a patient activated implantable loop recorder available to assist in the diagnosis of syncope or arrhythmias. We present our experience using this device in older subjects referred to a dedicated falls and syncope clinic in whose usual clinical assessment had not satisfactorily identified an attributable diagnosis but were a cardiovascular cause for syncope or falls was still suspected.

Methods
Subjects, over the age of 60 years, who had implantation of REVEAL between 1997 and April 2001 for investigation of syncope or unexplained falls were identified. Medical case notes were reviewed retrospectively.

Results
15 subjects had REVEAL implanted between 1997 and 2001. The mean age was 73 years (range 61-89), 87% being female. Despite extensive investigation including active stand, carotid sinus massage on at least one occasion, passive tilt testing and in the majority of cases GTN provocation tilt testing an attributable cause of syncope or falls was not found. Subjects were referred for implantation of REVEAL after a mean of 5 months (range 1-13 months). Of the 15 subjects 7 have activated the device with significant arrhythmias being present in 4 (3 bradycardia or asystole, 1 ventricular tachycardia). Time to activation was short at 4 months. Six people have not yet activated the device (mean duration of follow up 5 months). Two subjects did not activate the device during the 18 months it was in situ.

Conclusion
REVEAL offers additional diagnostic yield in complex elderly subjects with suspected cardiovascular causes of syncope or unexplained falls which have not previously satisfactorily diagnosed despite extensive investigations.

CAROTID SINUS MASSAGE: ERECT RIGHT SIDED CAROTID MASSAGE - THE ONLY NECESSARY PROVOCATION?

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Introduction
Carotid sinus massage (CSM) is frequently undertaken as a diagnostic test in elderly patients. The complication rate for permanent neurological deficit however is not insignificant (1 in 1000 massages). Most patients undergo four separate massages, right and left, in both supine and erect positions. We examined data from 775 patients undergoing CSM in an effort to reduce the number of massages without reducing the symptomatic yield.

Methods
775 patients underwent CSM according to the Newcastle protocols as part of a syncope assessment using a tilt table and finger plethysmography apparatus. The responses to supine, erect, left and rightsided massage were compared.

Results
Supine CSM (right and left) was performed in 775 subjects and erect CSM in 736 subjects leading to 3022 massages in all. The results are tabulated below.

<table>
<thead>
<tr>
<th>CSM</th>
<th>No of massages</th>
<th>Fall in SBP &gt;30mmHg</th>
<th>Fall in SBP &gt;50mmHg</th>
<th>Pauses &gt;3 sec</th>
<th>Symptoms (No: %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supine</td>
<td>1525</td>
<td>178</td>
<td>35</td>
<td>4</td>
<td>4 (0.2%)</td>
</tr>
<tr>
<td>Erect</td>
<td>1437</td>
<td>358</td>
<td>76</td>
<td>8</td>
<td>52 (3.7%)</td>
</tr>
</tbody>
</table>

There were 56 symptomatic responses in all; 4 on right supine CSM, 0 on left supine CSM, 33 on right erect CSM alone, 3 on left CSM alone, and 8 on both right and left erect CSM. The four symptomatic responses to supine CSM were duplicated on right erect CSM. The 54 symptomatic responses were detected in 44 patients. Two neurological deficits were precipitated by CSM.

Conclusion
41 of 44 patients with symptomatic response to CSM would have been diagnosed if right erect CSM alone was performed. We propose that right erect CSM alone may suffice as an initial provocation test and may reduce the complication rate.
A TRIAL COMPARING STANDARD TRIMETHOPRIM THERAPY WITH NITROFURANTOIN IN THE TREATMENT OF UNCOMPLICATED URINARY TRACT INFECTIONS IN ELDERLY PATIENTS

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Introduction
Symptomatic urinary tract infections (UTIs) are a significant source of morbidity in later life. UTIs are the most common nosocomial infection in elderly patients. The aim of this study was to validate the reliability of urinalysis as a positive predictor for UTIs and to compare the efficacy of a standard course of trimethoprim with a standard course of nitrofurantoin in the treatment of uncomplicated UTIs.

Methods
A prospective, randomised study was performed. Patients with symptoms suggestive of a UTI and positive urinalysis for nitrite and leucocyte esterase on dipstick were randomised to a course of either trimethoprim or nitrofurantoin as “blind” treatment for UTI. Clinical evaluation, urine dipstick and urine culture were performed at study entry and following treatment. The primary efficacy parameter was eradication of the causative organism.

Results
40 patients were included in the study (mean age 82; 9 male and 31 female). Positive nitrite and leucocyte esterase on urinalysis had a positive predictive value of 95% for UTI (38 out of 40 patients had a confirmed UTI). Of these 38 patients, 22 and 16 patients were randomised to trimethoprim and nitrofurantoin respectively. Bacteriological eradication occurred in 59% of trimethoprim patients and 56% of nitrofurantoin patients. Symptom resolution correlated well with clearance of infection. Escherichia coli (84%) was the most frequently pathogen overall.

Conclusion
Positive nitrite and leukocyte esterase dipstick tests are highly predictive for UTI in symptomatic elderly patients. The efficacy of both antibiotics was relatively low. This study does not support the recent suggestion of superiority of nitrofurantoin in the treatment of uncomplicated UTI.

CLINICAL PRACTICE

AN INVESTIGATION INTO THE INCIDENCE OF CARBON MONOXIDE POISONING IN ACUTELY ILL OLDER ADULTS

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Introduction
There is concern that a significant number of cases of carbon monoxide (CO) poisoning are missed because of the associated non-specific symptoms [Department of Health 1998 (Pl/CMO/98/5)]. Low level exposure has also been implicated in the exacerbation of existing diseases such as congestive cardiac failure or COPD.

Methods
This was a descriptive cohort study investigating acute elderly medical admissions over the winter. Patients with symptoms compatible with CO poisoning from a predefined list were eligible.

Carboxyhaemoglobin levels were measured using a portable breathalyser. High levels were confirmed on a blood sample. Where arterial blood gases were part of the medical assessment, levels from this were used. A carboxyhaemoglobin level of greater than 2% was considered abnormal for non-smokers, and greater than 5% for smokers.

The main outcome measure was the level of carboxyhaemoglobin. Secondary outcome measures were the ability to perform the breath test and the remedial actions taken where high levels were detected.

Results
725 patients were admitted to the department. 451 had symptoms compatible with carbon monoxide poisoning. 212 of these were enrolled to the study. 4 of whom had abnormal carboxyhaemoglobin levels. 30 patients were unable to use the breath device. An environmental change resulted in one case.

Conclusions
The majority of patients admitted acutely to hospital had non-specific symptoms that were compatible with being poisoned by carbon monoxide but on testing very few actually were.
APPROPRIATENESS OF 'DO NOT ATTEMPT RESUSCITATION' DECISIONS IN ELDERLY IN-PATIENTS USING PREDICTIVE SCORING SYSTEMS

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Introduction
Prediction models like Pre Arrest Morbidity (PAM) index and Prognosis After Resuscitation (PAR) score have been used to ascertain the likelihood of survival following in-hospital cardiopulmonary resuscitation (CPR). We have audited the appropriateness of 'do not attempt CPR' decisions in acutely ill elderly in-patients using these predictive scoring systems.

Methodology
Fifty-three consecutive elderly in-patients deaths were audited. In none of these CPR was attempted. A decision to not to attempt CPR was taken beforehand in all cases. Retrospective study of their case notes was undertaken to calculate the PAM and PAR scores. 'Do not attempt CPR' decision was considered appropriate if PAM index was $\geq$6 and/or PAR score of $>5$. Documentation of the reason for withholding CPR and the involvement of the relatives in CPR decision-making (keeping patient confidentiality) were also audited.

Results
Mean age of study population was 85.8 years. Fifty-one (96.2%) of the 'do not attempt CPR' decisions were appropriate. Fifty-one (96.2%) had a PAR score of $>5$ and 35 (66%) had both PAR $>5$ and PAM $\geq 6$. Mean PAR score and PAM index of the appropriate decisions were 11.2 and 6.4 respectively. Reasons for withholding CPR were not documented in 14 cases (26.4%). Relatives were not involved in CPR decision-making in 21 cases (39.6%).

Conclusion
Most DNAR decisions in our unit were on the grounds of futility.

AUDIT OF SURVIVAL WITH RENAL REPLACEMENT THERAPY AND RENAL REFERRAL PATTERNS IN ELDERLY PATIENTS

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Introduction
Renal replacement therapy (RRT) may be rationed in elderly people under the pretext of poor survival and hesitation for renal referral (RR). This audit studied the acceptance and survival on RRT in a DGH.

Methods
Five-year survival in 97 patients with renal failure who were started on RRT (dialysis), between 1994 and 1996 was studied (Group A).

Case notes of 26 patients with a creatinine $>600$ micromols/l in 1998, who did not undergo dialysis and died (Group B), were also reviewed to identify reasons for non referral.

Results
In group A there were 32 patients in the 55-65 years range, 49 between 65 to 75 years and 16 in the over 75 years. At two years the survival of patients over 75 years was similar to the 55-65 year group. At five years patients above 65 years had a mean survival of 26.5% compared to 60% in the 55 to 65 years group.

In group B, the cause of death were as follows: carcinomatosis, n=12 (46%); cardiovascular n=3 (11.5%); sepsis n=7 (27%); others n=4 (15.4%). Ten patients, including one with sepsis, were referred to renal physicians. None of them were suitable for RRT.

Conclusions
RRT should not be rationed on the basis of age alone.
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Introduction
In a study to determine the prevalence of malnutrition in older institutionalised people aged 60 years or more, three different screening scales were compared; body mass index (BMI), Mini Nutritional Assessment (MNA) and Malnutrition Advisory Group (MAG) score.

Methods
119 individuals (median age 82.6 years) living in nursing or residential homes in Liverpool (n=24) were assessed initially using the MNA and BMI. Weights were repeated after 8 weeks and a MAG score calculated.

Results
BMI: 20 (17%) people classified “at risk” (score <20).
MNA: 61 (51%) people classified “at risk” (score 0 to 23.5).
MAG: 31 (26%) people classified “at medium to high risk”.

All individuals classified “at risk” by BMI were also found to be at risk by the MNA and MAG. 4/11 people classified “at medium to high risk” by MAG score but with normal BMI at baseline had a recorded weight loss over 8 weeks of 6, 8, 10 and 41kg.

Although the MNA identified most residents at risk of malnutrition, it took the longest time to complete and many residents had difficulty in answering some questions. The MAG scale relies on two weights that may be difficult to measure accurately in a nursing home environment, as illustrated in this study. The BMI was easy and quick to carry out requiring only one visit.

Conclusion
The BMI should be the first choice when screening for those at risk of malnutrition in this population.


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Introduction
Conflicting views exist regarding the level of formality health care professionals should use while addressing patients. Though it is argued that physicians and patients should address each other by the same level of formality, little data exists on older patient’s views in this matter. This study was undertaken to evaluate how young and old hospital in-patients expected to be addressed to by doctors and nurses.

Methods
Mentally competent and clinically stable in-patients above and below 70 years of age were interviewed. They were asked how they wished to be addressed by their physicians and nurses and how they would prefer addressing a doctor and a nurse. Responses were analysed and compared.

Results
34 patients below and 36 above 70 years of age (53% males) were interviewed. 77% preferred to be addressed by their first name when meeting a physician for the first time. When addressed by a physician with whom they were acquainted, 96% preferred first name. Almost all the patients (98%) preferred to be addressed informally by a nurse. 100% wished to address a physician formally compared to 57% preferring to address a nurse formally. These preferences were similar in the two age groups.

Conclusion
Over 75% of the hospital patients expected to be called by the first name by their physicians even at the first meeting. Even higher proportion expected to be addressed informally by the nursing staff and by the physician with whom they were acquainted. These preferences were similar in young and old patients. Physicians may thus feel comfortable in addressing majority of their in-patients by the first name, especially after getting acquainted.
OVERUSE OF STEROIDS WHEN MANAGING POLYMYALGIA RHEUMATICA

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Introduction
Polymyalgia Rheumatica (PMR) and Temporal Arteritis (TA) represent a spectrum of disease commonly presenting between age 60-75. Current guidelines recommend prednisolone at a starting dose of 15mg daily for PMR and 20-40mg for TA. Most patients are expected to remain on steroids for 2-4 years.

Methodology
We compared the management of incident and prevalent cases seen in our unit to that advised by the guidelines.

Results
35 patients with PMR/TA were identified in 2000. 12 of these were new cases (10 PMR, 2 TA). 11 of these met diagnostic criteria and 6 were aged over 80. The mean starting dose for the PMR patients was 29.5mg. The mean daily dose over 6 months was 13mg, whereas from the guidelines it should be 10.2. All subjects were weaned too quickly, 11 had steroid side effects, and 10 received osteoporosis prophylaxis.

In the prevalent cases - on admission steroids had been taken for between 1-11 yrs, steroid dosage was mean (range) 5mg (1-30). On review of medical notes 12/23 [52%] prevalent cases were admitted due to steroid side effects.

Conclusions
The diagnosis of PMR in those over 80 is not unusual. Two factors predisposing to steroid side effects; starting and cumulative dose of steroids, are high compared to current guidelines. Steroid side effects are more common in this group than previously described and may be associated with admission.

LIMITATIONS OF APACHE II SCORES IN PREDICTING OUTCOMES IN THE ELDERLY

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Introduction
APACHE II is a widely used scoring system to assess disease severity and predict the prognoses of acutely ill patients. It was validated using data on 5815 intensive care patients. One third were over 65 years, 17% had chronic health problems and 53% were post-operative. The maximum score is 71points, 60 of which relate to physiological variables, 6 to age and 5 to chronic health problems. This study asks whether APACHE II scores accurately predict mortality for elderly patients in critical care units.

Methodology
The data used is from the South Wales study of population requirements for critical care beds. APACHE II variables were collected on all sick adult patients in 5 hospitals every 12th day for one calendar year. The scores were used to calculate standard mortality ratios (SMRs) for different age groups.

Results

<table>
<thead>
<tr>
<th>Age group</th>
<th>No. of patients</th>
<th>% risk of death from APACHE II score (average for age group)</th>
<th>Expected deaths (no. of patients x risk of death)</th>
<th>Observed deaths</th>
<th>SMR (observed + expected x 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;55y</td>
<td>507</td>
<td>22.65</td>
<td>114.84</td>
<td>55</td>
<td>47.89</td>
</tr>
<tr>
<td>55 – 64y</td>
<td>274</td>
<td>22.26</td>
<td>60.99</td>
<td>44</td>
<td>72.14</td>
</tr>
<tr>
<td>65 – 74y</td>
<td>537</td>
<td>27.71</td>
<td>148.80</td>
<td>119</td>
<td>79.97</td>
</tr>
<tr>
<td>75 – 84y</td>
<td>379</td>
<td>29.94</td>
<td>113.47</td>
<td>107</td>
<td>94.30</td>
</tr>
<tr>
<td>&gt;85y</td>
<td>71</td>
<td>28.53</td>
<td>20.26</td>
<td>20</td>
<td>98.72</td>
</tr>
</tbody>
</table>

Conclusion
SMRs are less than 100 for all age groups but increase with age, implying that older patients benefit less from critical care services. APACHE II may underestimate the risks of death for elderly people because of its emphasis on physiological variables rather than chronic health problems.
**CLINICAL PRACTICE**

### QUANTIFYING PREMORBID DISEASE STATUS IN PATIENTS WITH A DO-NOT-RESUSCITATE DECISION

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**Introduction**

Withholding cardiopulmonary resuscitation (CPR) from patients is a matter of continuing controversy. As part of an audit reviewing do-not-resuscitate (DNR) decisions we wished to examine CPR status in relation to age and pre-morbid medical condition. There is a public perception that older patients are excluded from CPR because they are old. The aim of this study was to investigate whether DNR decisions relate to increased co-morbidity in older patients or true ageist attitudes.

**Methodology**

A cross-sectional case-note audit was conducted to include all adult medical in-patients. An audit tool was designed and piloted for face validity. Data were collected pertaining to patient demographics, CPR status and medical condition. We used the Prognosis After Resuscitation (PAR) score to quantify pre-morbid disease status. Although originally designed as an aid in formulating DNR decisions, we used the PAR score in this context as a tool for standardising medical assessment.

**Results**

All medical in-patient notes, 99 patients (62 female, 37 male, mean age 77.9 years), were audited. 17 had a documented DNR decision. The mean ages of the ‘for CPR’ and DNR groups were 75.9 years (95% CI 73.0-78.9) and 87.0 years (95% CI 84.7-89.6) respectively. The mean PAR scores for the ‘for CPR’ and DNR groups were 6.3 (95% CI 5.3-7.4) and 11.6 (95% CI 9.9-13.3) respectively.

**Conclusion**

Physical health status is important to physicians making DNAR decisions.

### RELATIONSHIP BETWEEN CONSULTANT CARDIOPULMONARY RESUSCITATION (CPR) DECISIONS AND PREDICTIVE SCORES OF SURVIVAL

**G. THOMAS, L. CAUCHI, P. DIGGORY, D. GRIFFITH, V. JONES, E. LAWRENCE, J. MESSENGER, A. MEHTA AND P. O’MAHONY**

Department of Medicine for the Elderly, Mayday University Hospital, Croydon

**Introduction**

Our departmental policy has been to recommend CPR only for patients with a possibility of surviving it. Morbidity scores can be used to predict unsuccessful outcome. We compared three predictive morbidity scores with CPR decisions.

**Methodology**

CPR decisions and clinical details for morbidity scores were taken from the notes of all 140 elderly care inpatients on one day in February 2001. CPR decisions were compared to Pre-Arrest Morbidity score (PAM), Prognosis After Resuscitation score (PAR) and Modified PAM index (MPI). Patients with PAM or PAR scores >6 or MPI score >7 were defined as identifying patients who would not survive CPR (Bowker L, Stewart K. Resuscitation 1999; 40: 89-95.)

**Results**

Consultant CPR decision was documented in 138 (99%) of cases. Thirty were documented for CPR without discussion and 24 were offered CPR.

<table>
<thead>
<tr>
<th>CPR Decision</th>
<th>MPI</th>
<th>PAR</th>
<th>PAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤6</td>
<td>≥7</td>
<td>&gt;6</td>
<td>&gt;6</td>
</tr>
<tr>
<td>For (n = 54)</td>
<td>53</td>
<td>1</td>
<td>42</td>
</tr>
<tr>
<td>Not for (n = 86)</td>
<td>72</td>
<td>14</td>
<td>50</td>
</tr>
</tbody>
</table>

Association of decision & score* P=0.007 P =0.017 P=0.023

*Chi Square

**Conclusions**

A few patients were documented for CPR who had scores incompatible with survival. Most of our patients with DNAR decisions did not have prognostic scores that predicted non-survival.
CLINICAL PRACTICE

STROKE AND CORONARY HEART DISEASE (CHD) PATIENT’S KNOWLEDGE ABOUT THEIR DISEASES

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Introduction
Making informed decisions about stroke and CHD prevention depends on awareness of risk factors and knowledge of behaviors to prevent or detect these conditions. The aim of this study was, therefore, to measure the knowledge of stroke and CHD patients admitted to a stroke unit, coronary care unit (CCU) and general medical wards, about stroke and CHD.

Methods
We studied 95 stroke patients (mean age [SD] 75 [10] yr.; 57 men); and 98 age-matched CHD patients (57 men). A face to face interview was conducted on suitable patients by a single observer using a validated questionnaire (Postgrad Med J 1996; 72: 605) on day 5 (range 3-9) following hospital admission. The questionnaire was designed to test the patient’s knowledge of risk factors and consequences of stroke and CHD.

Results
Eighty-six stroke patients were admitted to the stroke unit and 63 CHD admitted to the CCU. Their knowledge about their respective diseases was significantly better than that of patients admitted elsewhere (stroke unit vs other wards [p<0.001]; CCU vs other wards [p<0.001]). After controlling for years of education, occupation, car ownership, housing and days from admission to the interview stroke and CHD patients admitted to the stroke unit and CCU respectively were likely to be more knowledgeable about their diseases compared with other patients admitted to other wards (r=0.4, p<0.001; r=0.3, p<0.001 respectively).

Conclusion
Stroke and CHD patients admitted to a stroke unit and CCU respectively have a better knowledge about their diseases compared with those admitted to other wards.

UNDIAGNOSED DEPRESSION IN ELDERLY MEDICAL IN PATIENTS

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Introduction
Inspite of high prevalence of depression in hospitalised elderly patients, detection is poor and treatment is offered to only a small proportion of cases. Co-existing physical illness can make the diagnosis difficult. A high degree of suspicion in needed and screening tests like Geriatric Depression Scale(GDS-15) is simple to use and can improve the diagnosis.

Methods
We screened 60 elderly medical patients, over 70 years (45 from acute medical wards and 25 from elderly rehabilitation wards) for depression using GDS-15. Patients with Abbreviated mental test score(AMT) less than 6 were excluded. Diagnosis of depression by treating physicians as recorded in the medical records were noted. Physical health was assessed using Physical health rating scale. Relationship between physical illness severity and depression was assessed using chi-square test.

Results
Mean age was 78.6 years with males 36% and females 64%. 22/60 patients (37%) had a GDS score of greater than 5 indicating depression. Of the depressed patients, in only 3/22(13%) were the diagnosis of depression made by treating physicians. 16/22(73%) had physical health score of 4 to 6 (moderate to totally physically impaired), indicating a significant association between depression and physical health status (p less than 0.05).

Conclusion
There is high prevalence of undiagnosed depression in elderly medical inpatients. Poor physical health is significantly associated with depressive symptoms. Screening using GDS-15 improves detection in these high risk groups and should be used more widely.
CLINICAL PRACTICE

MEDIAL TEMPORAL LOBE ATROPHY AND RISK OF MALNUTRITION IN MEMORY CLINIC SUBJECTS


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Introduction
Malnutrition is common in subjects with dementia but the reasons for this are unclear. Some authors have suggested an association between low body mass index (BMI) and atrophy of the medial temporal lobe (MTL) (Grundman et al Neurology 1996;46:1585-1591). This area of the temporal lobe is thought to control feeding behaviours and degeneration of this area could potentially impact on nutrition. The aim of the present study was to examine the relationship between MTL atrophy and nutrition in community dwelling subjects attending a memory clinic.

Methods
Seventy subjects, 66 (94%) with cognitive impairment, underwent assessment of cognitive, social and physical behaviours using standardised protocols. Nutritional assessment included anthropometric measures and screening for risk of malnutrition using the Malnutrition Indicator Score (MIS) from the Mini Nutritional Assessment scale. All subjects underwent temporal lobe - orientated CT scanning. Minimum MTL thickness was measured and compared to demographic factors in a stepwise multiple linear regression.

Results
Forty-four (63%) subjects were female. Mean (s.d.) age 74.4 (6.7) years, MMSE 21 (5.3), BMI 25.4 (3.8) and MIS 23 (3.5). Two factors were independently associated with temporal lobe atrophy: male gender (t=-2.23, p=0.03) and risk of malnutrition as defined by the MIS (t=2.75, p=0.008). Disease severity and anthropometric measures were not associated (all p>0.1).

Conclusions
The association between MTL thickness and risk of malnutrition supports a role for temporal lobe pathology in this complication. The association with male gender is novel and worthy of further study though it may be a chance finding.

REPORTED BREATHLESSNESS AMONG 70-80 YEAR OLDS IN NORTHERN IRELAND

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Introduction
The aim of this study was to estimate the prevalence of breathlessness and obstructive lung disease in 70-80 year olds in Northern Ireland.

Methods
Questionnaires concerning respiratory symptoms were sent to 1996 (41% male) non-institutionalised men and women aged 70-80 selected randomly from urban (Belfast) and suburban (North Down).

Results
1296 responded (70%, excluding 148 deceased or changed address). Respondents were 41% male. Breathlessness hurrying on level ground or walking up a slight hill was reported by 46%. 28% reported breathlessness walking with other people of their own age on level ground. 33% reported breathlessness performing routine work around the house. Overall 52% reported some degree of breathlessness. Emphysema and/or chronic bronchitis had been diagnosed in 10% and asthma in 6.3%. A further 5.2% reported a diagnosis of both asthma and emphysema/bronchitis. Females were more likely to report asthma (p<0.01). Current or past smoking was reported by 41%. Those living in urban Belfast were more likely to report breathlessness (p<0.01), bronchitis or emphysema (p<0.05), or asthma (p<0.01). There was no significant difference in reported smoking between the two areas. 77/196 (39%) with a diagnosis of bronchitis and/or emphysema reported never smoking while 75/147 (51%) of those reporting asthma reported past or current smoking.

Conclusion
There is a high prevalence of dyspnoea in this 70-80 year old age group which is not explained by diagnosed obstructive lung disease. This may be due to underdiagnosis of obstructive lung disease and/or dyspnoea related to non respiratory factors.
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Introduction
Decision on cardiopulmonary resuscitation (CPR) in the elderly is a sensitive subject receiving much media attention recently. Most concerns have centred on the lack of prior communication with the patient and/or family members. Discussing CPR with elderly patients soon after admission to hospital may be misunderstood and time constraints among junior staff often means that insufficient time is available to discuss patient concerns in order to come to a decision on CPR.

Method
We produced a patient information leaflet explaining resuscitation in detail. Patients were asked to state whether they wished to be resuscitated or not, or alternatively leave the decision to the medical team. The leaflet was given to patients on admission and 2 days later subjects were interviewed. Patients with MMT <7 were excluded.

Results
28 patients were enrolled; 3 were non-responders, 12 (43%) wished to be resuscitated, 2 did not and 11 (39%) left the decision to the medical team. The pilot was terminated pre-maturely because of anxieties from senior nursing management who felt that this was too sensitive an issue to be studied.

Conclusion
We have provided a patient focused method of dealing with a charged issue. Although the vast majority of patients were happy with the procedure, hospital managers were not. As carers we need to be able to confront sensitive clinical problems for the benefit of our patients.

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Introduction
Patients’ rights are central to decision making about cardiopulmonary resuscitation (CPR). Patients’ knowledge of what CPR involves and its expected outcome are therefore paramount. We aimed to assess patients’ knowledge and preference relating to CPR.

Methods
A semi-structured questionnaire was administered to in-patients in the Directorate of Geriatric Medicine. Patients with a Mental Test Score of less than seven and those unwilling or unable to discuss CPR were excluded.

Results
We studied 91 patients - 42 males (53.8%) and 49 females (46.2%), median age 81 years. Fifty-one patients (56%) knew what CPR involved and the mean estimation of survival after CPR was 71.7%. Seven of the 91 patients felt that they could not make any estimate of survival. After full explanation to all 91 patients about CPR, 51 (56%) stated that they wished to be resuscitated in the event of cardiopulmonary arrest and 27 (29.7%) did not want CPR. Thirteen patients were unsure of their preference. 55 patients (60.4%) expressed a wish to discuss CPR on admission to hospital and 38.5% declined this. In the event of patients being unable to discuss their CPR status, 51 patients (56%) wanted a senior doctor to decide their CPR status and a further 38 patients (41.8%) wanted their next of kin to make that decision.

Conclusion
Less than half the patients studied fully understood what CPR involved and the chance of survival was over-estimated. Even after education, not all patients felt able to decide on their CPR status and senior doctors were favoured as the person who should act as proxy.
ACQUISITION AND SHORT-TERM RETENTION OF TURBOHALER TECHNIQUE REQUIRES INTACT EXECUTIVE FUNCTION IN ELDERLY SUBJECTS

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Introduction
Some elderly patients are unable to learn to use the Turbohaler™ despite its operative simplicity. In many cases this is due to overt cognitive impairment; however, some subjects with apparently normal cognition cannot master the technique. This could be because they have impaired executive (frontal lobe) function.

Methods
We studied 30 inhaler-naïve inpatients, mean age 85 (75-94). All had an abbreviated mental test (AMT) score of 8/10 or more, adequate vision and hearing and no neurological deficit or confusion. All received standard Turbohaler training and were scored as competent or not immediately after (day 1) and the next day (day 2). Separate observers performed the mini-mental test (MMT) and a test of executive function, the Executive Interview (EXIT).

Results
25/30 subjects had a competent technique on day 1, 21/30 on day 2. All 21 patients who retained the technique had an MMT of more than 22/30 and an EXIT score in the range associated with minimal or no impairment of executive function (less than 10/50). Of the 9 subjects with an incompetent technique on day 2, all had EXIT scores of more than 15 and 5/9 were in the range associated with definite executive dysfunction (20/50 or more), 3/5 of whom had MMT scores of 24 or higher (minimal or no impairment).

Conclusion
Elderly subjects with a normal AMT who cannot learn Turbohaler technique have impaired executive function and sometimes an abnormal MMT. Patients with an MMT of less than 23/30 and/or EXIT of more than 15/50 are unlikely to learn to use a Turbohaler.