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INDEX OF AUTHORS

Abbott, L J 63
Abdulla, A 38
Abidin, I Z 112
Acomb, C 44
Adams, D 40
Adegbola, B 72
Adusa-Amankwa, F 20
Ahmed, N T 127
Ahmed, S 23
Ahmed, S 84
Ahsan, M 50
Alcorn, M P 68
Alessa, A 149
Ali, K 95, 160
Allain, T J 151
Allen, S C 98
Allen, S J 128
Allerhand, M 140
Al-Shanti, N 7
Ambepitiya, G B 20
Ambepitiya, J 20
Amin, A 46
Andrews, N P 109
Angelova, T 124
Ashokkumar, Y 8
Ashraf, S 79
Asquith, P 18
Aston, S 151
Attenborough, A 9
Aye, L 54

Babic-Illman, G 150
Baczynska, A M 129
Bagshaw, S 53
Baharani, J 148
Bajaj, N 155
Balasubramaniam, R 109
Banda, N P K 151
Bansal, S 20
Barker, R 155
Barne, M 104
Barnett, M 71
Barry, J J 147
Barsaiyan, G 45
Barton, S J 7
Bata, B 79
Baulch, C 152
Baylis, D 96, 97
Beal, J 58
Belcher, R 154
Ben-Shlomo, Y 155
Bhatia, Z 94
Bhatti, S 86
Bhutta, T 125
Birch, D 21
Birns, J 117
Blundell, A G 8, 114
Bodenham, E 95, 110
Bracewell, N 114
Brashaw, L 136
Brayne, C 5
Breckenridge, A 75
Breeds, J 95
Bridge, D 125
Brodie, H 6, 150
Brown, C 15
Brown, H 46
Bunting, E 95
Burn, D 155
Burns, E 80, 81
Butchart, C 142

Campbell, C 40
Campbell, J 27
Cant, R  160
Carlson, E 70
Carroll, N 17
Chair, S Y 41
Catania, J 79
Challis, D 135
Chamberlain, H 67
Chan, M W M 24
Ghan, Y 67
Charlot, C 13
Chattopadhyay, T 79
Chilliala, J 77
Chin, A V 138
Chinai, N M 70
Chinna, K 126
Chionh, S B 113
Chiu, P C 24
Chowdhury, T 91
Chu, C 17, 18
Chughtai, M S 65
Clarkson, P 135
Cochrane, L 102
Colledge, N 22
Collins, O 147
Collinson, S L 113
Colquhoun, K 32, 33
Conroy, S  136
Cooper, C 7, 96, 97, 100
Copeland, R 103
Cosgrave, S 147
Costa, J 54
Crabtree, A 64
Cracknell, A 69, 80, 81
Crome, P 78
Cowie, M 147
Cuming, K 144, 145
Cunning, C 19

Datta, A 79
Datta-Chaudhuri, M 51, 79
Davenport, R 77
Davie, C 19
Davies, L C 7
Davies, D H J 5
Dawson, S 83
Day, R 30
Dayana, S M H 138
Deary, I J 140
Dervin, M 23
Dickie, D A 139
Djuma, S 46
Donnan, P T 4, 102
Doyle, A 15
Duraisingham, S L 150

Early, P  87, 88
Edmans, J 136
Edmonds, C 143
Ehsan, R 20
Eldarawy, M M 42
Ellis, A 94
Elahabani, S 12
El-Sharkawy, A M 141
Emmanuel, A 155

Ernst, T 117
Esmayel, E M 42

Fanea, G 160
Fields, P 6, 150
Fisken, S 23
Fleet, J 72
Fleming, J 5
Folleyne, T 155
Ford, I 4
Ford, M L 110
Forrester-Paton, C 114
Forrester-Paton, J 114
Fox, G 44, 80, 81
Fox, G C 142
Fox, J 57
Franklin, M 136
Frost, H 102
Funaki, A 154

Gammidge, T 160
Garbharran, U 91
Gardner, G 28
Gariballa, S E 149
Gaylard, J 160
Ghorani, E 99
Gill, A 51
Gillson, S 13
Gladam, J R F 114, 136
Goodbrand, J A 102
Gordon, A L 8, 9, 114
Goudie, C R 19
Gray, S 31, 87, 88
Green, D 31, 87, 88
Green, S 28
Griffiths, C 12
Griffiths, P 18
Grosset, D 155
Grounds, M D 7
Gunnaratna, N 68, 69

Hackett, R 35
Hadn, M 25
Hameed, Y 142
Harari, D 6, 150
Hardy, K 13
Harman, D 37
Harris, W 128
Hawkins, K R 159
Hayes, N 72
Hays, R 135
Heitz, E 25
Helme, G 51
Heskett, A 134
Heyderman, R S 151
Hindle, J 153
Ho, N F K 24
Holmes, J D 123
Holmes, S J 98
Holt, S G 110
Honney, K 121
Hood, C 78
Hope, S V 89
Hopkins, S A 95
Horsley, J 18
Howard, A 160
Howie, S 104
Hoyle, G E 144, 145
Hughes, G 147
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajeevan, T</td>
<td>38</td>
</tr>
<tr>
<td>Rajkumar, C</td>
<td>95, 110, 160</td>
</tr>
<tr>
<td>Ramasamy, K</td>
<td>138</td>
</tr>
<tr>
<td>Rankin, P</td>
<td>90</td>
</tr>
<tr>
<td>Rashad, N M</td>
<td>42</td>
</tr>
<tr>
<td>Reece, S</td>
<td>37</td>
</tr>
<tr>
<td>Rees, D</td>
<td>153</td>
</tr>
<tr>
<td>Renton, J</td>
<td>19</td>
</tr>
<tr>
<td>Richards, J A</td>
<td>30</td>
</tr>
<tr>
<td>Richfield, E</td>
<td>40</td>
</tr>
<tr>
<td>Richmond, N</td>
<td>35, 72</td>
</tr>
<tr>
<td>Rigby, S</td>
<td>71</td>
</tr>
<tr>
<td>Rippingale, C</td>
<td>34</td>
</tr>
<tr>
<td>Ritchie, S</td>
<td>101</td>
</tr>
<tr>
<td>Roberts, H C</td>
<td>96, 97, 98, 100, 129, 152</td>
</tr>
<tr>
<td>Robertson, L</td>
<td>64</td>
</tr>
<tr>
<td>Robinson, K</td>
<td>43</td>
</tr>
<tr>
<td>Robinson, L</td>
<td>3</td>
</tr>
<tr>
<td>Robinson, P</td>
<td>12</td>
</tr>
<tr>
<td>Robson, C</td>
<td>22</td>
</tr>
<tr>
<td>Rodriguez Gonzalez, D</td>
<td>139</td>
</tr>
<tr>
<td>Roffe, C</td>
<td>160</td>
</tr>
<tr>
<td>Romerto-Ortuno, R</td>
<td>122, 147</td>
</tr>
<tr>
<td>Roots, A</td>
<td>117</td>
</tr>
<tr>
<td>Ross, P</td>
<td>6, 150</td>
</tr>
<tr>
<td>Rostami, K P</td>
<td>60</td>
</tr>
<tr>
<td>Roughneen, S</td>
<td>17</td>
</tr>
<tr>
<td>Saedon, I</td>
<td>126</td>
</tr>
<tr>
<td>Saedon, N I</td>
<td>112, 126</td>
</tr>
<tr>
<td>Safdar, M</td>
<td>20</td>
</tr>
<tr>
<td>Safran, A</td>
<td>50</td>
</tr>
<tr>
<td>Sahota, H K</td>
<td>132</td>
</tr>
<tr>
<td>Sahota, O</td>
<td>9, 61, 62, 83, 84, 103, 105, 106, 124, 151</td>
</tr>
<tr>
<td>Salmon, D</td>
<td>10</td>
</tr>
<tr>
<td>Sands, R</td>
<td>109</td>
</tr>
<tr>
<td>Sayer, A A</td>
<td>7, 96, 97, 100, 129</td>
</tr>
<tr>
<td>Schiff, R</td>
<td>52</td>
</tr>
<tr>
<td>Settle, J</td>
<td>86</td>
</tr>
<tr>
<td>Shafique, A</td>
<td>17</td>
</tr>
<tr>
<td>Shamel, K</td>
<td>30</td>
</tr>
<tr>
<td>Sharif, M</td>
<td>20</td>
</tr>
<tr>
<td>Sheehan, K J</td>
<td>2</td>
</tr>
<tr>
<td>Shenkin, S D</td>
<td>23, 139, 140</td>
</tr>
<tr>
<td>Simms, J</td>
<td>52</td>
</tr>
<tr>
<td>Singh, N</td>
<td>104</td>
</tr>
<tr>
<td>Singh, S</td>
<td>58</td>
</tr>
<tr>
<td>Sit, J W H</td>
<td>41</td>
</tr>
<tr>
<td>Slocum, L</td>
<td>104</td>
</tr>
<tr>
<td>Smith, A</td>
<td>77</td>
</tr>
<tr>
<td>Smith, D P</td>
<td>9</td>
</tr>
<tr>
<td>Smith, H</td>
<td>44, 46, 101, 143</td>
</tr>
<tr>
<td>Snelson, C</td>
<td>74</td>
</tr>
<tr>
<td>Sohota, K</td>
<td>39</td>
</tr>
<tr>
<td>Soiza, R L</td>
<td>142, 144, 145</td>
</tr>
<tr>
<td>Sopher, M</td>
<td>109</td>
</tr>
<tr>
<td>Souza, R</td>
<td>78</td>
</tr>
<tr>
<td>Spector, T D</td>
<td>118, 119, 137</td>
</tr>
<tr>
<td>Sprenger De Rover, W</td>
<td>83</td>
</tr>
<tr>
<td>Stack, E</td>
<td>152</td>
</tr>
<tr>
<td>Stapley, S</td>
<td>37</td>
</tr>
<tr>
<td>Starr, J M</td>
<td>140</td>
</tr>
<tr>
<td>Steves, C J</td>
<td>118, 119, 137</td>
</tr>
<tr>
<td>Stewart, D E</td>
<td>7</td>
</tr>
<tr>
<td>Stewart, R</td>
<td>75</td>
</tr>
<tr>
<td>Stirling, S</td>
<td>30</td>
</tr>
<tr>
<td>Stokoe, D</td>
<td>21</td>
</tr>
<tr>
<td>Stone, A</td>
<td>11</td>
</tr>
<tr>
<td>Straheim, V</td>
<td>31</td>
</tr>
<tr>
<td>Strassheim, V</td>
<td>87, 88</td>
</tr>
<tr>
<td>Strickland, S R</td>
<td>85</td>
</tr>
<tr>
<td>Struthers, A D</td>
<td>4</td>
</tr>
<tr>
<td>Sturley, R</td>
<td>104</td>
</tr>
<tr>
<td>Sultanzadeh, S</td>
<td>121</td>
</tr>
<tr>
<td>Suresh, M</td>
<td>99</td>
</tr>
<tr>
<td>Sutton, B</td>
<td>53</td>
</tr>
<tr>
<td>Sword, J E</td>
<td>89</td>
</tr>
<tr>
<td>Syddall, H</td>
<td>96, 97</td>
</tr>
<tr>
<td>Sykes, I</td>
<td>13</td>
</tr>
<tr>
<td>Tan, K M</td>
<td>127</td>
</tr>
<tr>
<td>Tan, M P</td>
<td>112, 126, 127, 138, 146</td>
</tr>
<tr>
<td>Tan, P J</td>
<td>126</td>
</tr>
<tr>
<td>Tan, W</td>
<td>105, 106</td>
</tr>
<tr>
<td>Tellam, R L</td>
<td>7</td>
</tr>
<tr>
<td>Tencheva, A</td>
<td>67</td>
</tr>
<tr>
<td>Thomas, M</td>
<td>30</td>
</tr>
<tr>
<td>Thomas, P</td>
<td>74, 148</td>
</tr>
<tr>
<td>Thompson, M</td>
<td>49</td>
</tr>
<tr>
<td>Thompson, S</td>
<td>115</td>
</tr>
<tr>
<td>Tiernan, C</td>
<td>147</td>
</tr>
<tr>
<td>Timeyln, J</td>
<td>95</td>
</tr>
<tr>
<td>Tiwari, D</td>
<td>27, 146</td>
</tr>
<tr>
<td>Tiwari, S</td>
<td>83</td>
</tr>
<tr>
<td>Tong, J F S</td>
<td>113</td>
</tr>
<tr>
<td>Trepte, N</td>
<td>121</td>
</tr>
<tr>
<td>Trundle, H</td>
<td>31, 87, 88</td>
</tr>
<tr>
<td>Tsang, J</td>
<td>49</td>
</tr>
<tr>
<td>Tucker, S</td>
<td>135</td>
</tr>
<tr>
<td>Tulio, E</td>
<td>3</td>
</tr>
<tr>
<td>Vardy, E</td>
<td>31, 87, 88</td>
</tr>
<tr>
<td>Vass, C D</td>
<td>124</td>
</tr>
<tr>
<td>Vellodi, C</td>
<td>154</td>
</tr>
<tr>
<td>Vettasserii, M</td>
<td>8</td>
</tr>
<tr>
<td>Von Stempel, C</td>
<td>115</td>
</tr>
<tr>
<td>Wall, J</td>
<td>55, 131</td>
</tr>
<tr>
<td>Wallace, C</td>
<td>12</td>
</tr>
<tr>
<td>Waller, D</td>
<td>160</td>
</tr>
<tr>
<td>Wallis, S J</td>
<td>55, 131</td>
</tr>
<tr>
<td>Wang, Y</td>
<td>6, 150</td>
</tr>
<tr>
<td>Ward, G</td>
<td>77</td>
</tr>
<tr>
<td>Wardlaw, J M</td>
<td>139</td>
</tr>
<tr>
<td>Wareham, K</td>
<td>128</td>
</tr>
<tr>
<td>Wareham, N J</td>
<td>159</td>
</tr>
<tr>
<td>Watkins, A</td>
<td>79</td>
</tr>
<tr>
<td>Waugh, J</td>
<td>48</td>
</tr>
<tr>
<td>Weerasuriya, N</td>
<td>14</td>
</tr>
<tr>
<td>Wheeler, S</td>
<td>58</td>
</tr>
<tr>
<td>Whitney, J</td>
<td>35</td>
</tr>
<tr>
<td>Whyte, A</td>
<td>46</td>
</tr>
<tr>
<td>Wigmore, B J</td>
<td>12, 130</td>
</tr>
<tr>
<td>Wiles, J</td>
<td>82</td>
</tr>
<tr>
<td>Wilkinson, I</td>
<td>29</td>
</tr>
<tr>
<td>Williams, N</td>
<td>155</td>
</tr>
<tr>
<td>Williams, S</td>
<td>33</td>
</tr>
<tr>
<td>Wilson, A M</td>
<td>159</td>
</tr>
<tr>
<td>Wingate, H</td>
<td>8</td>
</tr>
<tr>
<td>Witham, M D</td>
<td>4, 102</td>
</tr>
<tr>
<td>Wong, E M L</td>
<td>41</td>
</tr>
<tr>
<td>Wong, K Y K</td>
<td>39</td>
</tr>
<tr>
<td>Wong, S M</td>
<td>61</td>
</tr>
<tr>
<td>Wong, S Y S</td>
<td>39</td>
</tr>
<tr>
<td>Wood, N</td>
<td>155</td>
</tr>
<tr>
<td>Woodard, J</td>
<td>53</td>
</tr>
<tr>
<td>Wou, F</td>
<td>136</td>
</tr>
<tr>
<td>Wright, K</td>
<td>11</td>
</tr>
<tr>
<td>Yau, C</td>
<td>54</td>
</tr>
<tr>
<td>Yeong, K</td>
<td>76</td>
</tr>
<tr>
<td>Yielding, R E</td>
<td>9</td>
</tr>
<tr>
<td>Zachariah, D</td>
<td>109</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

## Platform Presentations

- Thursday, Session H: 12.45-13.00 ........................................ 1
- Thursday, Session I: 11.45-12.00 ................................. 2
- Thursday, Session J: 12.25-12.40 ............................... 3
- Thursday, Session M: 14.00 - 15.00............................... 4-7

## Posters

- Clinical Effectiveness .................................................. 8-94
- Biology and Social Gerontology ................................. 96-106
- Cardiovascular ............................................................ 107-112
- Diabetes ................................................................. 113
- Education and Training .................................................. 114-117
- Epidemiology .............................................................. 118-123
- Falls, Fractures and Trauma ......................................... 124-126
- Gastroenterology .......................................................... 127-128
- Health Services Research ............................................ 129-136
- Neurology and Neurosciences ..................................... 137-140
- Other Medical Conditions ............................................. 142-151
- Parkinson’s Disease ..................................................... 152-155
- Pharmacology ............................................................ 156
- Psychiatry and Mental Health ....................................... 157-158
- Respiratory ............................................................... 159
- Stroke ................................................................. 160
MASKED HYPERTENSION IS COMMON AND IS ASSOCIATED WITH SIGNIFICANT MORTALITY

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Background
Ambulatory BP monitoring (ABPM) is used to identify white coat hypertension (WCH). Some individuals however have mean daytime BP >135/85 mmHg on ABPM despite office BP in normal range, so called “masked hypertension”.

Aim
To establish the proportion of older-people with masked hypertension and compare survival with normotensive and hypertensive participants.

Methods
330 adults aged ≥65 years had office BP recorded after 10 minutes supine, rest and underwent 24 hour ABPM. Participants were classified into 4 groups; normotensive (Office BP <140/90 mmHg and mean daytime BP<135/85 mmHg), WCH (Office BP>140/90 and mean daytime BP<135/85), masked hypertension (Office BP <140/90 and mean daytime BP>135/85) and persistent hypertension (Office BP >140/90 and mean daytime BP>135/85). Participants were followed up for 10 years. GP records and death certificates were reviewed to identify patients who had died. Cox regression modelling was used to compare survival among groups.

Results
300 participants had ≥10 daytime BP recordings and were included in the analysis. 32% were normotensive, 20% had WCH, 32% had persistent hypertension and 17% had masked hypertension. Kaplan Myers curves showed similar survival for the WCH and normotensive group. These participants were therefore combined together to form 1 group “ABPM normotension”

Cox regression analysis adjusting for age and sex showed borderline association between mortality and masked hypertension [HR 1.74 (95% CI 0.95, 3.17), 0.07] and persistent hypertension [HR 1.57 (95% 0.96, 2.57)] compared to the ABPM normotensive group.

After adjusting for, smoking status, diabetes, BMI and antihypertensive medication, masked hypertension showed a stronger relationship with ten year mortality than persistent hypertension [HR 1.85 (95% CI 1.01, 3.40), p = 0.05] and [HR1.62 (95% CI 0.98, 2.69), p=0.06] respectively.

Conclusion
Office BP measurements may miss individuals with masked hypertension. Masked hypertension shows stronger associations with mortality than persistent hypertension possibly due to poorer BP control.
CENTRAL ADIPOSITY IS AN INDEPENDENT PREDICTOR FOR THE DEVELOPMENT OF FRAILTY IN COMMUNITY DWELLING OLDER ADULTS

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Introduction
Two demographic trends have emerged worldwide which are of growing public health and economic concern, namely increased life expectancy and obesity. Frailty indicates those older adults who are susceptible to adverse health outcomes. The relationship between increased adiposity and frailty has yet to be explored longitudinally in older adults. This study aimed to determine if Body Mass Index (BMI) ≥30 kg.m² or central adiposity is a risk factor for the development of frailty in older adults.

Methods
Prospective follow up study. 2,258 community dwelling participants ≥ 65 years completed a baseline assessment and follow up assessment two years later. BMI was measured objectively. Central adiposity was defined as a waist circumference ≥ 88cm for women and ≥ 102 cm for men. A phenotypic definition of frailty including weakness, physical activity levels, gait velocity, weight loss and self-reported exhaustion was used. Ordinal regression was adopted to determine the predictive capability of BMI ≥30 kg.m² and central adiposity for the onset of frailty at follow up for previously robust older adults.

Results
BMI ≥30 kg.m² and central adiposity were predictive of frailty at baseline (p ≤ 0.05). For adults who were robust at baseline 321(49.61%) presented with at least one frailty indicator at follow up. Fully adjusted analyses indicated that central adiposity (Odds ratio 1.4; 95% Confidence interval:1.0,2.0) at baseline was an independent risk factor for frailty at follow up. BMI ≥30 kg.m² at baseline was not predictive of new onset frailty at follow up.

Conclusions
From the current findings central adiposity was an independent risk factor for the development of frailty in older adults. This was evident after a short follow up period of just two years. Waist circumference needs to be included in the clinical assessment of the older adult to identify those at risk of developing frailty.
COMPARATIVE PERCEPTIONS OF ACADEMICS AND MEMBERS OF THE PUBLIC ABOUT PUBLIC AND PATIENT INVOLVEMENT (PPI) IN AGEING RESEARCH

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Introduction
Public and patient involvement (PPI) in clinical research is increasingly advocated by funding and regulatory bodies. However little is known about the views of either academics or members of the public about perceptions of the practical realities of PPI, particularly in relation to ageing research.

Methods
This mixed-methods study aimed to compare the views of academics and the public about PPI in biomedical and clinical research about ageing. Groups of clinical and biomedical researchers (senior academics and PhD students) working on projects related to ageing were sent an electronic survey about their perceptions of PPI. Members of a local user group of older people were sent a similar survey, and asked to provide feedback on lay summaries written by academics. Comparative results were presented at a meeting for academics and members of the public to discuss and verify the findings.

Results
18 senior academics and 15 PhD students completed the survey (response rates 75% and 88% respectively). 54 members of the public completed the survey and provided feedback on lay summaries. Members of the public were more optimistic about active involvement in research about ageing than academics. The perceived benefits of and barriers to involvement in research were similar amongst all groups. The meeting between members of the public and academics allowed discussion about potential reasons for differences in opinions and exploration of areas of consensus about involvement. Academics valued the feedback on lay summaries provided by members of the public.

Conclusions
Academics and members of the public share some perceptions about PPI in ageing research, such as agreement about key benefits and barriers, but members of the public are more optimistic about active involvement. Further discussion between these groups would help to identify feasible involvement activities for older people and encourage collaborative research about ageing.
EFFECT OF VITAMIN D SUPPLEMENTATION ON ORTHOSTATIC HYPOTENSION – DATA FROM THE VITDISH TRIAL

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Introduction
Orthostatic hypotension is common in older people, and commonly accompanies supine hypertension. Existing therapeutic options lack robust evidence of efficacy and some may increase supine blood pressure.

Methods
Secondary analysis of data from the VitDISH randomised trial of vitamin D for isolated systolic hypertension. Patients enrolled in the trial were aged 70 and over, with office systolic blood pressure >140mmHg, diastolic blood pressure <90mmHg, and baseline 25-hydroxyvitamin D levels <75nmol/L. Participants were randomised to receive either 100,000 units oral vitamin D3 or placebo every 3 months for a year. Outcome measures including supine blood pressure and blood pressure at 0, 1 and 3 minutes after standing, were collected at baseline, 3, 6, 9 and 12 months. The change in orthostatic fall was calculated between groups at each timepoint and across the trial using repeated measures ANOVA.

Results
75/159 (47%) participants fulfilled criteria for baseline orthostatic hypotension and are analysed here. Mean age was 77.6 years (SD 5.1); baseline blood pressure was 162/76mmHg. Mean baseline orthostatic fall in blood pressure was 32/5mmHg. After adjustment for baseline age, 25-hydroxyvitamin D, systolic blood pressure and orthostatic fall, the fall in systolic blood pressure was less in the vitamin D group at 3 months (treatment effect 6mmHg, 95% CI 0 to 12), but repeated measures analysis showed no significant treatment effect (3mmHg for systolic fall, 95% CI -1 to 8; 1mmHg for diastolic fall, 95% CI -1 to 3).

Conclusion
Vitamin D supplementation did not lead to a sustained improvement in orthostatic hypotension in this analysis.
DELIRIUM MODIFIES THE RELATIONSHIP BETWEEN NEUROPATHOLOGY AND COGNITIVE DECLINE: RESULTS FROM 987 BRAIN AUTOPSIES FROM THREE POPULATION-BASED STUDIES

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4. MRC Biostatistics Unit, Cambridge (5) Department of Geriatric Medicine, University of Edinburgh

Background
Delirium is associated with accelerated cognitive decline. The pathological substrates of this relationship are not yet known, that is, whether they are the same as those associated with the dementias, independent or inter-related. Here, we examine the hypothesis that the accelerated cognitive decline observed following delirium is independent of classical dementia neuropathology.

Methods
In three population-based cohorts (Epidemiological Clinicopathological Studies in Europe Collaboration) we examined the effects of delirium episodes on cognitive change. We then analysed these associations in relation to the extent of neurofibrillary tangles, amyloid plaques, vascular lesions and Lewy bodies in neuropathological autopsies (N=987). Change in Mini-Mental State Examination scores (MMSE) over six years prior to death was modelled using random-effects linear regression, and interactions between delirium and pathology burden were assessed.

Results
Mean MMSE six years before death was 25 points. Individuals with delirium had worse initial scores (-2.8 points, p<0.01). Cognitive decline attributable to delirium was -0.37 MMSE points/year (p<0.01). Decline attributable to dementia pathology was -0.39 MMSE points/year (p<0.01). However, the combination of delirium and dementia pathology resulted in the greatest decline, where the interaction contributed a further -0.16 MMSE points/year (p=0.01).

Conclusions
Delirium in the presence of dementia related neuropathologies is associated with accelerated cognitive decline beyond that expected for delirium or the neuropathology itself. This suggests additional unmeasured but related neuropathological processes are initiated by the delirium. Age-related cognitive decline has many contributors and these findings at the population level support a role for delirium acting independently from classical dementia neuropathology.
VALIDITY & RELIABILITY OF A COMPREHENSIVE GERIATRIC ASSESSMENT SCREENING QUESTIONNAIRE (CGA-GOLD) IN OLDER PEOPLE WITH CANCER

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6. Cancer Services Innovation Directorate, Macmillan Cancer Support

Background
With a growing number of older people undergoing cancer treatment, identifying their wider needs is becoming increasingly important. CGA screening in non-UK studies have identified broader issues, but tools are too lengthy to implement in the busy NHS oncology clinic setting. We evaluated a briefer self-reporting CGA screening questionnaire (CGA-GOLD) which included evidence-based measures and a validated quality of life tool (EORTC-QLQ-C30).

Method
Participants completed the CGA-GOLD questionnaire in the POPS-GOLD (Geriatric Oncology Liaison Development) pilot project (LREC 11/LO/0695). Two clinicians (geriatrics specialist registrar (SPR) and clinical nurse specialist (CNS)) reviewed CGA-GOLD responses. Patients deemed with ‘no significant CGA needs’ received no input, ‘possible need’ received a telephone call to clarify, and ‘definite need’ were invited for an in-depth CGA assessment and management plan. We assessed questionnaire validity and reliability in identifying need.

Results
239 patients completed the questionnaire (mean age 76.6). Both clinicians independently reviewed the same questionnaires for 71 patients. The same decision regarding CGA need was made for 87.3% (62/71) with excellent inter-rater reliability (kappa = 0.80).

<table>
<thead>
<tr>
<th>SPR Decision</th>
<th>CNS Decision</th>
<th>No CGA need</th>
<th>Need CGA</th>
<th>Maybe needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>No CGA need</td>
<td>14</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Need CGA</td>
<td>1</td>
<td>29</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Maybe needs</td>
<td>1</td>
<td>1</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

The SPR and CNS reviewed the questionnaire against the clinical notes for 82 and 83 different patients respectively. Notes review changed decision-making for the SPR and CNS in 11.0% (9/82) and 9.6% (8/83) respectively. 55 telephone calls were made to clarify need, decision-making was altered for 38% (n=21/55), mainly towards no needs (n=16) with none towards increasing need.

Conclusions
The CGA-GOLD questionnaire is reliable for identifying need when reviewed by geriatrics specialists of different disciplines. Notes review only changed identification of need in 10%, indicating validity. Telephone calls reduced false positives, but confirmed that high needs were not being missed.
LEAN MASS, MUSCLE STRENGTH AND GENE EXPRESSION IN COMMUNITY DWELLING OLDER MEN

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6. Liverpool John Moores University

Introduction
Sarcopenia is associated with morbidity and mortality. Cellular pathways involved in the regulation of growth and atrophy affect myofibre size and subsequently, muscle strength. The objective of this study was to investigate whether skeletal muscle gene expression was associated with altered lean mass and grip strength in community-dwelling older men.

Methods
99 men (mean age 72 years) consented for detailed characterisation of muscle mass and strength as well as a muscle biopsy of the vastus lateralis. Tissue suitable for molecular analysis was available from 88 participants. PCR arrays on muscle tissue were used to determine the expression of 44 genes implicated in the cellular regulation of skeletal muscle. The relationships between gene expression, lean mass and grip strength were described.

Results
Participant groups with extreme values of lean mass (n=18) and grip strength (n=20) were used in the analysis of fold change in gene expression. Expression of VDR (vitamin D receptor) (fold change [FC] 0.52, standard error for fold change [SE] ±0.08, p=0.01) and INFG (interferon gamma) mRNA (FC 0.31; SE ±0.19, p=0.01) were lower in those with higher lean mass. Expression of IL6 (interleukin 6) (FC 0.43; SE ±0.13, p=0.02), TNF (tumour necrosis factor) (FC 0.52; SE ±0.10, p=0.02), IL1R (interleukin 1 receptor) (FC 0.63; SE ±0.09, p=0.04) and MSTN (myostatin) (FC 0.64; SE ±0.11, p=0.04) were lower in those with higher grip strength. No other significant changes in fold change were seen.

Conclusion
Lower expression of VDR and INFG associated with higher lean mass and lower expression of IL6, TNF, IL1R and myostatin associated with higher grip strength. These results suggest a role for inflammation in the regulation of muscle mass and strength. Replication studies in larger study samples of men and women are now needed.
USING CLINICAL AUDIT TO BUILD THE CASE FOR DISCHARGE
SUMMARIES THAT COMMUNICATE COMPREHENSIVE GERIATRIC
ASSESSMENT

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Evidence-base
High-quality transfer of care documentation, reflecting all domains of comprehensive geriatric assessment (CGA), is recognised as central to good clinical practice. In January-March 2011, we audited 199 consecutive discharge summaries from Health Care of Older People (HCOP) against the Clinicians Guide to Record Standards of the Academy of Medical Royal Colleges. Several deficiencies were noted but particularly in reporting of functional status and cognition. This was despite these being routinely assessed on HCOP wards.

Change Strategies
We designed a pro forma to reflect all domains of CGA – medical, psychological, social, functional and environmental. This was rejected by our trust in favour of a standardised electronic document shared across all departments based on the hypothesis that standardization would improve practice. In HCOP monthly discharge summary review and reflection sessions were organized to support good practice. We re-audited practice in 152 consecutive discharge summaries over a three month period from Sept-Dec 2012.

Change Effects
There was no change for domains previously completed in >90% of patients (discharge diagnosis, reason for admission, clinical narrative and inpatient investigations). There were improvements in basic admission documentation: responsible consultant increased from 38-100% and discharge destination from 48-98%. The inclusion of a compulsory “no intentional changes to medication” box, without which the pro forma could not be authorised, saw medication change documentation increase from 81-100%.

Reporting of functional status, or cognitive performance (<50% of discharge summaries) did not improve. Advice regarding ongoing referral or management in the community following discharge was documented in <60% of patients.

Conclusion
Standardised electronic documentation supported by review and reflection sessions improved completion rates for basic admission data and medication changes but did not improve communication of comprehensive geriatric assessment to primary care teams. We are using this evidence to introduce a multi-domain HCOP discharge document as initially planned.
Background
Recent service developments nationally have sought to improve pre-and peri-operative care of older patients undergoing elective surgery. Services have been described in orthopaedic, vascular, cardiovascular and urological – but not spinal – surgery. We were asked to develop a clinic to assess and manage frail older patients undergoing elective spinal procedures.

Innovation
Spinal surgeons and anaesthetists were encouraged to refer patients they identified as “frail” or with multiple comorbidities to a consultant geriatrician in addition to routine pre-operative assessment. After 18 months a retrospective audit of all clinic correspondence was undertaken.

Evaluation
82 (44 female) patients attended. Average age was 70.9 (SD 10.9; range 46-95). Investigations were requested in 44 (54%) patients: blood tests in 30 (37%), spirometry in 10 (12%), chest x-ray in 9 (11%) and ECG in 8 (10%) patients. New diagnoses were made in 43 (52%) patients: most commonly iron-deficiency anaemia in 8 (10%), orthostatic hypotension in 4 (5%), uterine prolapse in 3 (4%) and uncontrolled hypertension in 2 (2%).

Medications were started, stopped or altered in 28 (34%), 15 (18%) and 7 (9%) patients respectively. Most commonly prescribed were analgesics in 19 (23%), iron in 8 (10%) and antianginals in 5 (6%). Most commonly stopped were analgesics in 11 (13%), antihypertensives in 3 (4%) and proton pump inhibitors in 3 (4%) patients.

An opinion from another specialty was sought for 24 (30%) patients, most commonly from cardiology (12 patients). 17 (21%) patients had no change to their management. One patient cancelled their surgery post-consultation.

Conclusions
Attendance at the clinic changed management by making new diagnoses, changing prescriptions and making specialty referrals that would not have taken place otherwise. The broad age range and proportion of patients with no change to management suggests that pre-clinic screening for appropriateness of geriatrician input might be useful.
AN AUDIT OF THE ACCURACY OF GENTAMICIN PRESCRIBING

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Evidence Base
Due to the potential severe adverse effects of gentamicin, dosing must be carefully monitored. This is a time consuming and complicated process with a number of calculations including parameters such as the patient’s age, dose-determining weight, height and creatinine clearance. Monitoring of gentamicin levels is necessary if therapy is to continue beyond a single dose.

The initial audit demonstrated that the aforementioned parameters were poorly documented. Dose-determining weight was rarely calculated (8%). Using trust guidelines as the standard only two of 47 (4%) patients received the correct dose. For patients receiving multiple doses, levels were taken at appropriate times in 94% of cases, but levels were only documented in 32% of cases.

Change Strategies
A drug-chart sticker was introduced which included space to document weight (and dose determining weight), height and creatinine clearance, as well as initial levels and subsequent gentamicin doses. In addition, posters were placed on wards reminding staff of the trust guidance on gentamicin dosing, and audit findings were presented at the medical grand round.

Change effects
Re-Audit was performed four months after the change strategies were implemented. Results demonstrated a reasonable sticker uptake (68%). Documentation of key patient characteristics (weight, height and creatinine clearance) had improved, although some stickers though present were incompletely filled in. There was a moderate increase in exact correct doses of gentamicin prescribed to 4/20 (25%).

Conclusions
Poor adherence to gentamicin guidelines was a result to a lack of staff awareness of the resources available and the lack of a suitable place to document dosing strategies. Raising staff awareness and the provision of drug chart stickers helped to improve documentation of crucial patient information and an increase in correct doses prescribed. In addition, these interventions have made gentamicin prescribing safer and less time consuming.
AUDIT OF KNEE PAIN CONTROL IN ACUTE REHABILITATION

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Introduction
Acute rehabilitation on our acute older persons’ ward was often hampered by musculoskeletal pain. The physiotherapists in particular found stiff and painful knees made many movement strategies difficult.

Method
An initial audit to translate anecdote into number was carried out. Over a 4 month period, 227 patients were assessed for knee pain. After presentation this audit, the department decided to institute a policy of aggressive pain relief escalation for painful knees. When paracetamol and topical NSAIDs were ineffective (as per NICE guidance for OA knee ), intra-articular steroid and local anaesthetic were used. Timed up and Go (TUAG) scores were recorded by the attending physiotherapists. Pain scores were recorded using a standard visual analogue scale. Intra-articular injection was with triamcinolone 80mg and lidocaine 1% 5mls.

Results
First audit cycle: Significant pain was identified in 14 (6%), with a mean visual analogue pain score of 7.0 and a timed up and go of 82 seconds.

Re-audit of knee pain with aggressive strategy showed 34 painful knees in 384 patients seen over 5 months. The mean pain score (visual analogue scale) pre injection was 7.0 and mean score post injection was 2.2. The timed get up and go fell from 84 seconds to 36 seconds. No acute complications were observed. Laboratory analysis showed gout in 9% of aspirates and pseudogout in 33%. These knees were painful but clinically not suspected of crystal arthropathy, demonstrating that these conditions are more common than often thought.

Conclusions
The more aggressive approach was valued by patients and therapists. Crystal Arthropathy is commoner than clinically suspected.

References
3. Comorbidity, limitations in activities and pain in patients with osteoarthritis of the hip or knee, Gabriella M van Dijk et al , BMC Musculoskeletal Disorders 2008, 9:95

Abstract No. 11
# ACCEPTABILITY OF TELEHEALTH BY ELDERLY PATIENTS

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2. NHS Health Services

## Background
Telehealth is defined as the remote surveillance of patient’s health to aid in timely intervention. Its efficacy in elderly patients is well documented; however age has been reported as a barrier for accepting the new technology.¹

## Innovation
Telehealth uses equipment to remotely monitor people’s health in their own home, thus overcoming the challenge of distance and allowing timely care to be provided to patients while at home. A Primary Care Trust within South London has been providing telehealth services to elderly patients, with one or more long term condition including COPD and heart failure, for the past 14 months.

## Evaluation
A cross sectional survey of elderly patients to explore their perception, concerns and general satisfaction with telehealth service via a 4 point likert scale questionnaire was conducted. Out of 34 patients included, 27 participated (response rate 79%) with average age in years (±SD) 71.1 (±10.4). Overall, patients were very satisfied (weighted average 3.5 out of 4) with telehealth services. Patients didn’t find the use of necessary equipment to be difficult (1.7) or unreliable (2.1) and they had no concerns about confidentiality (2.0) or the absence of direct contact with GP/Nurse during a telehealth consultation (1.8). Finally, since being on telehealth, patients’ confidence in managing their own health increased from somewhat confident (2.0) to confident (3.1). One patient, in particular, commented that “Telehealth is very easy to use …. it is very reassuring to know that your health and well-being is kept updated by your nurse & GP.” Another added “I find it amazing that 3 little items can have such an impact on my health.”

## Conclusions
Age doesn’t seem to be a barrier for the adaption and use of Telehealth.

## Reference
MEASURES TO IMPROVE DOCUMENTATION OF DAILY PATIENT CARE NEEDS AT SOUTHAMPTON GENERAL HOSPITAL

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Background
Every patient should have a regular review of care needs. WHO Guidelines for Medical Records and Clinical Documentation and NICE Guidelines CG50 state that handover should include a summary of diagnosis and treatment, a monitoring and investigation plan and a plan for ongoing treatment.

Innovation
We conducted a retrospective audit of notes focusing on specific areas for patients on Elderly Care Wards with a length of stay over 1 week. Following education of medical teams we introduced weekly stickers for patient case notes as an aide memoire to ensure certain domains were considered on ward rounds. Those domains were considered at re-audit after stickers were introduced. Not all notes contained stickers at the time of re-audit due to a mislaid batch.

Evaluation
The first audit showed only 20% of patients had all domains assessed by the multidisciplinary team and only 5% by doctors. Re-audit demonstrated statistically significant improvement in several domains as shown in Table 1. This was more marked in notes with stickers than without.

Table 1

<table>
<thead>
<tr>
<th>Assessment</th>
<th>1st audit n=64</th>
<th>Re-audit N=67</th>
<th>1st audit</th>
<th>Re-audit</th>
<th>P-values</th>
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</thead>
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<tr>
<td>Bowels</td>
<td>MDT</td>
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<td>Drs only</td>
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<tr>
<td>Bladder</td>
<td>94</td>
<td>100</td>
<td>89</td>
<td>97</td>
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<tr>
<td>Mood</td>
<td>59</td>
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<td>45</td>
<td>51</td>
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<tr>
<td>Food</td>
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<td>100</td>
<td>52</td>
<td>82</td>
<td>&lt;0.001</td>
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<tr>
<td>Fluid Balance</td>
<td>89</td>
<td>96</td>
<td>56</td>
<td>73</td>
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<tr>
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<td>5</td>
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<tr>
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<td>82</td>
<td>58</td>
<td>58</td>
<td>0.963</td>
</tr>
<tr>
<td>Drugs</td>
<td>94</td>
<td>96</td>
<td>61</td>
<td>66</td>
<td>0.574</td>
</tr>
<tr>
<td>Mobility</td>
<td>75</td>
<td>73</td>
<td>70</td>
<td>60</td>
<td>0.203</td>
</tr>
</tbody>
</table>

Conclusions
Introduction of stickers improves the documentation of care domains within the multidisciplinary team and specifically by doctors, but this is not maintained if the stickers are not in the notes. We will trial a weekly ward round proforma sheet and re-audit.
EVALUATING THE EFFECT OF ORTHOGERIATRIC INTERVENTION ON BOWEL CARE AND ANALGESIA FOLLOWING HIP FRACTURE

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2. Department of Elderly Medicine, Nottingham University Hospital NHS Trust

Evidence Base
Constipation in elderly people with hip fracture is a common problem due to immobility, opioid prescription and lack of privacy. It can result in a numerous complications and ultimately an increased length of hospital stay. There is a dearth of meaningful evidence, both in the way that constipation is recognised and its subsequent treatment. The orthogeriatric team in this large University Hospital Trust investigated the effectiveness of bowel care for elderly inpatients following hip fracture. Each audit followed a cohort of 40 people aged 60 or above following surgical fixation of hip fracture.

Change Strategies
- Laxatives to be prescribed from the day of surgery.
- Stool charts for all patients; recording frequency and type.
- Review analgesia daily; promoting ‘as needed’ (prn) oral opiate prescription.
- Local dissemination of audit results and encouragement of change strategy implementation.

Change Effects

<table>
<thead>
<tr>
<th>Change Effects</th>
<th>2010</th>
<th>2011</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stool chart used?</td>
<td>0%</td>
<td>35%</td>
<td>100%</td>
</tr>
<tr>
<td>4 ≥days between bowel movements since admission?</td>
<td>92.5%</td>
<td>90%</td>
<td>37.5%</td>
</tr>
<tr>
<td>Laxative prescribed?</td>
<td>92.5%</td>
<td>90%</td>
<td>87.5%</td>
</tr>
<tr>
<td>PRN oral Opiate prescribed?</td>
<td>7.5%</td>
<td>85%</td>
<td>95%</td>
</tr>
<tr>
<td>Medical and Nursing staff aware of patients current bowel habit;</td>
<td>51%</td>
<td>60%</td>
<td>75%</td>
</tr>
<tr>
<td>Patient satisfied with current analgesia?</td>
<td>90%</td>
<td>95%</td>
<td>97.5%</td>
</tr>
</tbody>
</table>

Conclusion
- Patients with hip fracture are now significantly less constipated.
- The results are of national interest; the patient experience is greatly improved.
- The improvements demonstrate the vital importance of a combination of medical and surgical care for this group of frail vulnerable patients.
- All patients now have an accurate record of bowel movements.
- There is an increased awareness within the ward team. 75% now identify patients’ bowel habit without consulting charts.
- Whilst the prescription of laxatives is important, a motivated ward team encouraging their uptake is vital.
- Improved patient satisfaction of their pain relief, almost all patients now have a prn oral opiate prescription.
PATIENT MANAGEMENT FOLLOWING AN INPATIENT FALL; AN AUDIT

C Brown, A Doyle

Queen Elizabeth Hospital, Birmingham

Evidence Base

 During an observed 5-day period 25 falls occurred at the Queen Elizabeth Hospital, Birmingham (QEHB). 18% were witnessed and 22% had a history which reliably excluded head injury. However, when reviewed by a junior doctor, a Glasgow Coma Scale (GCS) or alternative was documented for only 56% of patients. Pupils were examined in 33%, and even a rudimentary neurological examination was only documented 22% of the time. Furthermore, in 28% of cases there was no documentation of a physical examination.

Change Strategies
Modifications were made to the Patient Information and Communications System (PICS); a computer management programme at the QEHB. These include changes to the way patients are risk assessed, and identification of those at risk of falling and those who have fallen using distinctive icons. Prompts have been integrated to inform medical staff of a recent fall, in particular when risk-factors such as anticoagulant use are present. Alerts activate when medications are prescribed for patients who have fallen within the last 72 hours and direct links between PICS and a post-fall proforma have been made available.

Change Effects
Junior doctors and other team members are assisted in providing better post-fall management. Resultantly, patient safety is enhanced in line with current available guidance (1).

Conclusion
Patients are often sub-optimally managed following a fall, a failing which can be improved by the introduction of a post-fall proforma and the use of a computerised system to prompt a superior management approach.
HAS THE PROVISION OF A GP LED LOCAL ENHANCED SERVICE TO A NURSING HOME REDUCED HOSPITAL ADMISSIONS? A COMPLETE AUDIT CYCLE FROM EASTERN CHERISHIRE

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Evidence Base
In recent years, inadequate health care provisions to nursing homes have been reported (British Geriatric Society, June 2011). One potential solution proposed is for GPs to be contracted to provide enhanced services to local nursing homes, aiming to improve areas such as hospital admissions. Early pilots into a weekly, proactive GP visit have shown promising results in this respect (PULSE, September 2011). Such services have recently been introduced in Eastern Cheshire. This audit aimed to demonstrate whether the provision of a GP Local Enhanced Service to a Nursing Home improved admission rates in our area.

Change Strategies
The implementation of a fixed, once weekly visit to the local nursing home by the same GP. The rates of hospital admission in one six month period before this intervention and two six month periods after this (2010-12) were compared with an optimal audit standard of 8% of nursing home residents (Yorkshire and Humber NHS, 2010).

Change Effects
A significant reduction in the rate of acute admissions to hospital was seen after the GP led visit and the audit standard was almost achieved. The percentage of residents admitted prior to the set visits was 28% in six months. This then reduced to 21% in the first re-audit and 8.8% in a subsequent six month period. This represents 68.6% (p= 0.034, Fisher’s exact test) reduction in hospital admissions after GP visits in the last six month audit period compared with the first.

Conclusion
Introduction of one dedicated GP session per week via a contracted Local Enhanced Service to a Nursing Home has shown a statistically significant reduction in admissions to hospital. If this trend can be replicated on a larger scale residents should benefit from having consistent care and avoid potentially distressing hospital stays. Additionally, fiscal and resource benefits should be seen.
TARGETING GERIATRICIAN SKILLS TO PATIENTS ON GENERAL SURGICAL WARDS

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Background
The NCEPOD report 'An Age Old Problem' 2010 identified a paucity of input from Geriatricians into the care of surgical patients aged 80+ with only 37% assessed as receiving good care. Routine daily input was recommended. The lack of one particular condition acting as a marker for frailty on surgical wards means careful targeting is required.

Sampling Methods
We are developing a surgical liaison service but with limited resources and 5 surgical wards, we needed to identify those most likely to benefit. We assessed all patients (n=118) within the bedbase (excluding orthopaedics) using frailty indicators including age, co-morbidities, presence of a Geriatric Giant, polypharmacy, standardised nursing risk assessment scores and post admission complications.

Results
The 5 surgical wards are divided into Breast / Opthalmology (shared), Vascular, Hepatobiliary, Upper (UGI) and Lower Gastrointestinal (LGI). The UGI ward had the highest proportion of emergency admissions (91%). Great variation in case mix was discovered between wards.

The vascular ward had an older population (mean age 74), most co-morbidities (mean 2.6), more with one or more geriatric giants (71%), higher Waterlow (mean 12.8), ASA (mean 3), falls risk score (mean 2) and more polypharmacy (92%).

Hepatobiliary had more patients with nutritional needs and the highest number with at least 1 event (71%) requiring medical input.

Conclusion
Patients with characteristics likely to benefit from Geriatrician input were most prevalent on the vascular ward but these had fewer "medical" complications. In contrast, hepatobiliary and UGI patients have fewer frailty features but more medical complications.

Geriatricians are uniquely able to provide both medical input and a comprehensive geriatric assessment. The latter may be more appropriate in some ward areas than others. Developing a liaison service requires knowledge of case mix to target Geriatrician time and activity (medical input and MDT work) most effectively.
Background
Frail elderly patients often present with non-specific symptoms and a common diagnosis made is urinary tract infection (UTI) based on a positive urine dipstick. The Royal College of Physicians acute care toolkit 3 recommended against performing a routine dipstick of urine in these patients unless they had clinical signs of sepsis or had urinary symptoms.

Method
Patients over the age of 75 who were admitted via the acute unselected take to Southport and Ormskirk NHS Trust were assessed at random. The presenting complaint and the diagnosis from the consultant post take ward round were included in our analysis with the biochemical and microbiology results.

Results
47 patients were reviewed. Presenting complaints included fever (14.9%), delirium (34%), collapse / falls (23.4%), urinary symptoms (6.4%), non specific symptoms (21.3%).

Dipstick urine was positive for nitrates and / or leucocytes in 70.2% of patients. 46/47 (97.8%) were treated with antibiotics for a presumed UTI. Trimethoprim was used in 47.9%, Cefuroxime in 39.1% and in 8.7% of patients, a variety of other antibiotics were used.

A midstream urine sample (MSSU) was sent in 39/46 (84.7%) of the patients who were given a diagnosis of a UTI. Of those, 14/39 (35.9%) were positive with a microorganism. However, only 7 of these patients had symptoms or signs of sepsis consistent with a clinically significant urinary tract infection (ie 15% of those treated).

Conclusion
Dipstick urine should not be used to diagnose UTIs as it leads to over-diagnosis and the over-use of antibiotics with the concomitant risk of multi-resistant organisms and clostridium difficile infection. Positive urine culture is obtained in only a small proportion of those with positive dipstick tests. It is very important to differentiate between a clinically significant UTI or asymptomatic bacteruria as other causes of sepsis or clinical deterioration could be missed.
ASSESSMENT FOR POSTOPERATIVE DVT IN OLDER PEOPLE WITH HIP FRACTURES

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Background
Deep vein thrombosis (DVT) is a common postoperative complication in patients who have sustained a fractured neck of femur. DVTs are difficult to differentiate clinically from postoperative leg swelling. We were interested to address what proportion of patients who underwent Doppler ultrasound scanning in this setting had a DVT.

Sampling Methods
We conducted a retrospective review of patients who underwent Doppler ultrasound scanning following hip fracture repair. Clinical records of all patients (204) who were admitted with hip fracture over a five month period were screened. Detailed information was collected for those who had a Doppler ultrasound scan following surgery using clinical notes and electronic patient records.

Results
30 patients (14.7%) underwent Doppler ultrasound scan. 5 out of 30 had a DVT. Those who had a DVT were scanned an average of 22 days post operation. The majority were diagnosed in rehabilitation. In the acute setting, zero (0/11) ultrasound scans ordered by orthopaedic or Medicine of the Elderly doctors led to a diagnosis of DVT.

<table>
<thead>
<tr>
<th></th>
<th>Acute Setting (n=11)</th>
<th>Rehabilitation Settings (n=19)</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>DVT present on Doppler US</td>
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</tr>
<tr>
<td>VTE prophylaxis</td>
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<td>2</td>
</tr>
<tr>
<td>Wells score or D-dimer used</td>
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<td>Swollen leg same side as operation</td>
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<td>8</td>
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<tr>
<td>Previous cancer, DVT, PE</td>
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</table>

Conclusions
Our survey demonstrated that swelling in an operated leg in this group is sometimes attributable to DVT, although more often is due to other causes, such as post-operative oedema. The yield from ultrasound scanning was low. This suggests that with more information and consultation, practice could be modified to request fewer Doppler ultrasound scans in the acute setting. A randomised prospective study would clarify the most appropriate, means by which to do this.
Background
An increasing number of admissions of frail older people attending emergency departments or accessing urgent care are reported to be unsafe, inappropriate and associated with increased costs. The multiple co-morbidities of these patients could often be managed in the community. However the current community care models have shown only modest impact and cost effectiveness in reducing Acute District General Hospital (DGH) admissions. (Silver Book, British Geriatrics Society, 2012).

Innovation
The Rapid Assessment Clinic (RAC) in St Margaret’s Hospital (SMH) Epping, West Essex, a semi-acute community hospital for older patients, is a doctor-led, one-stop, multidisciplinary team assessment unit. It operates within normal working hours. Referrals are accepted from General practitioners, Paramedics, community case managers, district nurses, mental health team, self and family. The aim of the unit is to prevent inappropriate referrals or admissions into acute hospitals.

Evaluation
Retrospective analysis of data, collected over 46 months of all 1880 patients seen in RAC, was done. Fifty-six percent were discharged back home or to previous care settings, 29% were admitted into community hospitals and only 15% were referred to the nearest acute hospital. The mean waiting time for a patient before review by a doctor was 28.3 minutes whilst about 93% of patients were seen within 60 minutes.

Conclusion
The majority of older people in the community who need urgent care do not require acute DGH facilities and its associated costs. Our analysis suggests that RAC in a local community hospital could provide an ideal multidisciplinary team setup to address varied multi-pathological needs of an older person in a cost-effective manner. It also has the advantage of being ‘care closer to home’ with patients being seen quicker in a more appropriate environment compared to Accident and Emergency.
INTRODUCING COMPREHENSIVE GERIATRIC ASSESSMENT TO THE MEDICAL EMERGENCY ASSESSMENT UNIT

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Background
In recent years Lincoln County Hospital (LCH) has experienced a 7% annual rise in frail older adults attending the emergency department and conversion of these attendances to admissions has been around 80% causing considerable bed pressures on the service.

Conroy, Carver, Johnston et al, Age & Ageing 2010; 39 (S2), ii40 demonstrated that a unit in the emergency department, specifically configured to provide services to frail older adults, can significantly decrease admissions. In LCH, a much smaller unit, this solution was thought unlikely to be cost-effective.

Innovation
An in-reach service into the medical emergency assessment unit (MEAU) was developed with the provision of a clinical nurse specialist and a geriatrician. The aim was to provide a rapid comprehensive geriatric assessment by coordinating their efforts with other health care professionals already working in the MEAU to form a virtual frailty unit. Referrals to the new service were made by nursing and medical staff working in MEAU. The objectives were to increase early discharges and to decrease length of stay.

Evaluation
During the 12-week prospective evaluation 587 patients were referred to the service. Time constraints allowed review of only 55% of referrals. The outcomes for this group were compared to the outcomes of the group of referred patients who were not reviewed. Statistically, the two groups were not demographically different.

The percentage of discharges in the first two days was 31% for the intervention group and 16% for the comparison group.

The mean length of hospital stay of the intervention group was 10.3 days compared with 13.7 days in the comparison group.

If the cost of the intervention is the in-reach team’s salaried hours then the cost of saving a bed day was £9.10.

Conclusions
The in-reach service is both effective and cost-effective.
STRATEGIES TO IMPROVE VISUAL ASSESSMENT IN PATIENTS ATTENDING A DAY HOSPITAL: A CLOSED AUDIT LOOP

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Evidence-Base
Visual impairment (VI) is a well-established risk factor for falls. Compared with normal-sighted people, people with VI are almost twice as likely to fall and have recurrent falls with subsequent fractures\(^1\). Poor vision is commonly under-recognised, and elderly patients often fail to attend for free NHS eye examinations. The NICE guideline on falls prevention recommends that all patients undergoing falls assessment are screened for visual impairment\(^2\).

Change-Strategies
The initial audit assessed current visual assessments and follow up in patients undergoing falls assessment in a day hospital, by prospective case note review over an 8 week period. Following this, an education session on a newly designed assessment tool, referral pathway guideline and provision of a standardised referral letter to optometry services, was delivered to the multidisciplinary day hospital team. A re-audit was then conducted over the same time frame and statistical analysis performed.

Change Effects
Following the intervention, significantly more patients underwent assessment of visual acuity (99% vs 87%, p = 0.0023). Of those identified with VI, there was a significant improvement in referral to optometry services (55% vs 33%, p = 0.0028) and less patients with VI were discharged from the day hospital without any follow-up (7% vs 33%, p = 0.0001).

Conclusions
The interventions that were introduced led to a statistically significant improvement in the assessment of visual acuity. More patients identified with visual impairment were referred for ongoing assessment by their optometrist and fewer patients were left without follow-up. These results were presented back to the day hospital team in order to reinforce the new protocols for assessment and onward referral.

References
MINERALOCORTICOID RECEPTOR ANTAGONISTS IN ELDERLY PATIENTS WITH HEART FAILURE: A SYSTEMATIC REVIEW

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². University of Edinburgh Information Services, Royal Infirmary Library, Edinburgh;
³. Edinburgh Heart Centre, Royal Infirmary Edinburgh

Scope
Heart failure (HF) is highly prevalent, especially in the elderly, and is associated with major morbidity and mortality. Mineralocorticoid receptor antagonists (MRAs) improve outcomes in patients with heart failure and reduced ejection fraction (HEFREF) but have not been studied specifically in elderly cohorts. We performed a systematic review to determine the efficacy and safety of MRAs in patients >65 years with HF.

Search Methods
Data sources: Medline, EMBASE, CINAHL, Cochrane. Two independent reviewers screened articles for eligibility. Selected trials were scored for Quality Assessment. Inclusion criteria comprised randomised, placebo-control trials of MRAs in patients >65 years (or pre-specified subgroup analysis in patients >65 years) with symptomatic heart failure. Efficacy outcomes: mortality, hospitalisations, symptoms, functional capacity. Safety outcomes: hyperkalaemia, renal dysfunction.

Results
655 articles were identified by the initial data search and a further six by other means. Of these, 625 were excluded on title/title plus abstract. Of the remaining 36, four met inclusion criteria. Spironolactone reduced mortality in patients >67 years with chronic severe HEFREF, whilst eplerenone reduced the composite of mortality and hospitalisations in patients >75 years with HEFREF and mild symptoms. In patients with HEFREF post-myocardial infarction, eplerenone reduced mortality with no difference, on sub-group analysis, in patients >65 years. In patients >67 years with heart failure and preserved ejection fraction (HEFPEF), spironolactone improved diastolic dysfunction but did not improve symptoms or functional capacity. The incidence of serious hyperkalaemia or severe renal dysfunction was not increased by MRAs in patients >65 years.

Conclusions
MRAs are effective and safe in selected patients >65 years with HEFREF, although these patients may not be representative of the typical elderly heart failure population. The effects of MRAs in HEFPEF and in very elderly patients with HEFREF remain uncertain and require further study.
THE IMPACT OF VIRTUAL WARDS ON FRAIL OLDER PATIENTS WITH CHRONIC DISEASES AT HOME: A PRE AND POST STUDY

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Background
Attendance in emergency department (ED) and subsequent hospital readmissions are common for frail older patients with chronic diseases. Reducing avoidable hospital readmissions among these patients has become a priority to improve patient outcomes and lower healthcare costs.

Innovation
A Virtual Ward (VW) service was piloted to deliver ‘hospital at home’ healthcare services for older patients who had chronic diseases. This service was delivered right after patient’s discharge by community nurses and geriatricians. Within the first week after patient’s discharge, the VW nurse conducted daily visits and depending on patient’s needs, the VW geriatrician might also conduct home visit. Thereafter, the VW nurse provided direct patient care, health education and psychosocial supports to both the patients and their carers on a needed-basis.

Evaluation
A total of 39 patients received the VW service and 27 were successfully followed up at 3-months from March 2012 to January 2013. Wilcoxon signed rank tests compared patient’s hospital utilisations in the past 90 days (n=39) and self-reported quality of life (n=27) before and after the implementation of the VW service. Significant reductions in hospital utilisations in length of hospitalisation via ED (15.03±17.5 days vs 3.41±8.09 days; p<0.001), number of admissions via ED (1.97±1.31 vs 0.56±0.72 days; p<0.001) and number of emergency attendance (2.15±1.27 vs 0.64±0.78; p<0.001) and a significant improvement in overall quality of life (2.75±0.57 vs 3.43±0.54; p<0.001) after receiving the service were observed.

Conclusions
The study results support the effectiveness of the VW service in reducing hospital utilisation via ED and improving perceived quality of life in older patients with chronic diseases. Provision of ‘hospital at home’ model of care may be useful for frail older patients with chronic diseases.
ASSESSING THE IMPACT OF SATURDAY TRAUMA OPERATING LISTS ON THE TIME TO SURGERY FOR PATIENTS WITH FRACTURED NECK OF FEMUR

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Introduction
Neck of femur fracture is common in the elderly population and is associated with high mortality, morbidity and healthcare cost. Delay to surgery is known to adversely affect outcome. Croydon University Hospital, South London, serves a population of 360,000 and has an Orthogeriatrican providing joint care for hip fracture patients over 60 years on a dedicated ward. In 2011 the Saturday trauma operating list was discontinued, leading to all weekend trauma cases subsequently being placed on the CEPOD list. In July 2012 the Saturday Trauma list was re-introduced.

Aim
To perform a retrospective interrogation of the database of patients with neck of femur fracture and assess the impact of Saturday trauma lists on time to surgery and mortality.

Method
Data were analysed retrospectively from the National Hip Fracture Database for all patients aged 60 years and over admitted and operated on with a fractured neck of femur for 2012.

Results
260 patients were admitted over the audit period.
Post introduction of the Saturday list:
• Reduction in mean time to surgery 48.8 hours to 36.7 hours (p=0.05)
• Increase in the percentage of patients proceeding to surgery under 36 hours from 51.5% to 72% p=<0.05)
• Non significant reduction in the average length of stay from 26.8 days to 23.6(p=0.17).
• Non significant reduction in mortality 14.6% compared to 12.1% (p=0.56).
• No significant change in mean time to assessment by an Orthogeriatrician 40.5 hrs to 41.5 (p=0.87).

Conclusions
Introduction of the Saturday trauma list has shown a reduction in time to surgery, with an increased number of patients receiving surgery within 36 hours and reduction in length of stay. This supports the continuation of the Saturday trauma list as part of a strategy to improve patient care and compliance with hip fracture guidelines.
Withdrawn
AN AUDIT CYCLE INVESTIGATING THE INDICATIONS FOR AND ADEQUATE DOCUMENTATION OF THE INSERTION OF URINARY CATHETERS IN OLDER PATIENTS

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2. Department of Infection Control, The Royal Bournemouth Hospital, Dorset, UK

Evidence-based
Urinary catheters are commonly inserted in older hospitalised patients. Guidelines from the European Association of Urology Nurses (V Geng et al, Evidence-based Guidelines for Best Practice in Urological Health Care, 2012) state the indications for urinary catheter insertion and suggest that amongst other details, the indication for catheter insertion and complications of the procedure should be documented. These guidelines are important as inappropriate catheterisation can result in unnecessary complications and poor documentation can result in a failure to record useful information. We completed an audit cycle after previous audits had highlighted poor documentation of this procedure in our hospital.

Change Strategies
An initial audit was performed to identify the reasons for catheterisation and the adequacy of its documentation. Standards were sought from local guidelines consistent with the EAUN guidelines. Our first audit (n=50) showed that 72% of catheter insertions were clinically appropriate. We found poor documentation (10-38%) with regards to the indication for urinary catheterisation, complications of the procedure and a failure to legibly document name and designation. An intervention in the form of a urinary catheter insertion sticker was introduced throughout the hospital to improve documentation. It was required to be filled in and inserted into the patient notes each time this procedure was carried out.

Change Effects
A re-audit (n=162) showed that documentation of the indication for urinary catheterisation, complications of the procedure and legible documentation of name and designation improved substantially to between 78-100% (P<0.05).

Conclusion
In conclusion we have created a successful intervention that has resulted in a substantial improvement in the documentation of urinary catheterisation. This will hopefully aid further clinical decision making as useful information is available to medical staff.
Background
People with dementia have worse outcomes associated with hospital admission, are more likely to have interventions and are less likely to be offered palliative care than people without dementia. Advance Care Planning for care home residents has been shown to reduce hospital admissions without increasing mortality. Studies have shown that staff confidence in managing delirium, a common reason for admission, improves with training.

Innovation
The objective was to deliver a service which improved end of life care for residents with dementia by combining evidence-based interventions described above. Assessments were undertaken with reference to Gold Standard Framework prognostic indicators. Staff received education about delirium and end of life care. Advance care planning was undertaken, with plans sent to care homes, carers, general practitioners and secondary care.

Evaluation
Staff completed electronic questionnaires addressing confidence and knowledge about delirium before and after training. Carers' opinions were sought on how care planning was conducted. The Trust information department provided data for admissions. Data on deaths and place of death was collected from the care homes. Improvements in staff confidence were seen in recognition (20% v 79%), prevention (11% v 68%), management (11% v 61%) and in knowledge of factors associated with delirium. More than 92% carers rated the service ≥9/10. Admissions fell by 37% from baseline in the first year and 55% in the second year. All residents died in the preferred place of care during the service period.

Conclusion
This service has improved care home staff knowledge about delirium. It has offered care home residents with dementia an alternative to hospital admission, allowing them to die in their or their carers' preferred place of care. The positive feedback suggests this service model delivers effective communication about end of life issues in residents with dementia, which is highly valued by carers.
THE DEMENTIA AND DELIRIUM TEAM – AN EXAMPLE OF ACTIVIST PROFESSIONALISM

I Wilkinson, C Lee
Kingston Hospital NHS Foundation Trust

Evidence Base
The assessment of patients for dementia and delirium in the acute hospital setting is a national CQUIN. In many hospitals this assessment is performed by the junior doctors but imposed and led in a top down manner. This can lead to a sense of depersonalisation of the junior medical doctors who feel they have little control over the system they work in and it may not encourage their active participation. Observed activist professional movements allow the focus shift from an individual’s actions to those of the group as a whole; harnessing trust, obligation and solidarity.

Change strategies
1) Creation of a Dementia and Delirium (DaD) team prompted junior doctors (mostly FY1) to volunteer to be ‘dementia champions’.
2) Monthly audit and review meetings were performed and results emailed to each team.
3) As the dementia champions rotated around the hospital new champions were recruited by them to continue their work.
4) Junior doctors implemented a ‘forget-me-not’ dementia awareness scheme in all the wards.

Change effects
AMTS recorded in the first 72 hours: July 2012 68%, October 2012 85%, April 2013 99%
Screening Question asked: October 2012 64%, April 2013 98%
Referral to memory services (via GP): October 2012 59%, April 2013 100%

The junior doctors felt that they had championed a change in the culture of the hospital likely to give lasting changes affecting the care of patients. Feedback from relatives was very positive.

Conclusions
Allowing a group of junior doctors ownership and active involvement in the project has fostered a sense of activist professionalism where the driver for change is now from the bottom up to improve care for this vulnerable group of patients. This is much more likely to produce the needed culture change than a more traditional top down approach to management.
**THE RACE UNIT: RAPID ACCESS AND CONSULTANT EVALUATION**

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**Background**  
The process of admission of patients, their assessment, treatment and discharge was reinvigorated in June 2010 when the RACE Unit was opened.

**Innovation**  
The changes to practice implemented were:

- Dedicated Elderly Medicine admissions ward.
- Specific Consultant-led “triage” ward round each morning for patients who are felt to be appropriate for discharge within 48 hours.
- Referrals to the Unit are taken by a Consultant or Specialist Registrar, involving early senior assessment of the patient, and facilitation of early supported discharge.
- Daily multi-disciplinary meeting, involving medical and nursing staff, occupational and physiotherapists, a pharmacist, and Social Services representatives.
- Integration with community services and Intermediate care.
- Specialist nursing staff, with interest and expertise in Geriatric care.
- Daily Rapid Access clinic for assessment of patients, with early access to specialised investigations such as ultrasound and CT scans.

**Evaluation**  
The mean length of stay fell from 13.5 days to 11.6 days, a reduction of 14%. There has been a sustained, consistent reduction in the length of stay over the three years that the RACE Unit has been in operation, which in 2012 stood at 8.1 days.

The proportion of patients discharged within 48 hours rose from 20.8% to 36.5%. The average monthly occupied bed days in the Department of Elderly Medicine fell from 6078 prior to RACE to 4726, a reduction of 22%.

However, the readmission rate has risen from 12% to 16%.

**Conclusion**  
The introduction of the RACE Unit has led to significant, sustained improvements in length of stay, discharge within 48 hours, and number of Elderly Medicine bed days. The three main factors felt to be responsible for these improvements are: increased Consultant involvement in the admission and discharge process; the daily, focused multi-disciplinary meeting; and strong nursing leadership and expertise in Geriatric care.
IDENTIFICATION OF BENIGN PAROXYSMAL POSITIONAL VERTIGO IN PATIENTS ATTENDING A COMMUNITY BASED FALLS PREVENTION SERVICE

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2. Institute for Ageing and Health, Newcastle University and Falls and Syncope Service, Newcastle Hospitals NHS Foundation Trust;
3. Age UK, North Tyneside

Introduction
Benign paroxysmal positional vertigo (BPPV) is a significant risk factor for falls in older persons but under diagnosed. The North Tyneside Falls Prevention service (NTFPS) aims to identify and modify risk factors for falls in a large community based population working as an integrated care model with primary and secondary care, GP based IT expertise and the third sector- AGE UK.

Methods
An audit of GP computerized records followed by simple postal questionnaire identified all older persons over 60 living independently with recognized risk factors for falls. This group underwent a comprehensive community based assessment per NICE guidelines.

All patients in whom BPPV was suspected (history of postural or positional dizziness / vertigo, dizziness lying or turning over in bed, injurious falls with postural change) underwent Dix-Hallpike testing.

Results
2450 patients assessed in first 2 years
95 new diagnoses of posterior canal BPPV were made as a result of a positive Dix-Hallpike test - 3.8% prevalence.
Mean age 74.3 years; Range 60-89; 76 females; 48 had fallen; 50 right BPPV; 37 left BPPV; and 8 bilateral.

Of this BPPV cohort, additional diagnoses made were:

- lower level gait disorder in 45, - 20 referred to Age UK balance group
- 5 required osteoporosis medication as per guidelines
- 14 referred on for DEXA on basis of FRAX tool,
- 7 orthostatic hypotension,
- 3 bradycardia requiring medication review,
- 1 new atrial fibrillation ,
- 1 new cognitive impairment
- 3 depression.

Conclusion
Active identification and treatment of BPPV must be part of falls prevention services. Any service seeing older persons with BPPV should consider additional modifiable risk factors for falls including gait disorders, osteoporosis screening and cardiovascular diagnoses with the aim of reducing falls and falls related hospital admissions .

Abstract No. 31
A SYSTEMATIC REVIEW LOOKING AT EFFECTIVE METHODS OF WEIGHT LOSS IN THE OBESE OLDER ADULT

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Scope
Scottish Government Statistics have shown that approximately 25% of those aged between 65 and 80 are obese, this age group also has a higher prevalence of obesity-related health risk compared to the younger population. Intervention trials show benefits of weight reduction with regards to obesity related health problems (Bales and Buhr, JAMDA, 2008, Vol 9, page 302 - 312). Guidelines exist for childhood and adult obesity management, but not for elderly obesity management, despite a difference in pathophysiology. This systematic review looked into effective methods of weight loss in this population.

Search Methods
Electronic databases (Medline, Embase, Medline in Process, Cochrane) and references of included papers were searched up to September 2012. Effective weight loss was defined as at least 5% of body weight, as per SIGN guidelines. All study types were included which had percentage weight loss as an outcome. Best data came from randomised control trials (RCT’s). Quality was analysed using a checklist from the Cochrane Handbook.

Results
8 papers were included. A calorie restricted diet of at least 500kcals/day, a calorie restricted diet combined with at least 3 x 60 minutes of cardiovascular and resistance training per week and partial meal replacement combined with exercise as above, all achieved effective weight loss in RCT’s.

Interventions had to be delivered centrally, by health professionals, over at least 6 months. Retrospective data showed bariatric surgery was both effective and safe. Pharmacotherapy, exercise alone, or interventions delivered by lay persons did not achieve effective weight loss.

Conclusions
Effective weight loss is most likely achieved in the obese, older person, when a calorie restricted diet is combined with exercise and delivered by health professionals, however, data is limited and more research is needed in this area.
MANAGEMENT OF RECURRENT URINARY TRACT INFECTIONS IN ELDERLY INPATIENTS

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Evidence Base
SIGN guidelines and Cochrane 2008 advise that women with recurrent urinary tract infections (UTIs) consider using cranberry products. Evidence shows that they significantly reduce UTI incidence at 12 months (relative risk, 0.65). The only reported adverse event was an interaction with warfarin. Cochrane 2004 showed that antibiotic prophylaxis for 6 to 12 months reduced the incidence of UTIs compared to controls; however, with more adverse events. This suggests that cranberry juice is preferable to prophylactic antibiotics. SIGN also recommends that men with recurrent UTIs should be referred to urology.

Change Strategies
We worked with our urology colleagues to develop a care of the elderly, departmental guide, into the management of recurrent UTIs. This included investigations and the use of cranberry products and prophylactic antibiotics. This was presented, together with first loop audit results in a departmental meeting. The guide was emailed to all medical staff and included in induction material.

Change Effects
Pre-intervention, 16% [32/200] of our elderly, inpatient population had recurrent, symptomatic, UTIs, post-intervention, 13% [26/200]. The use of cranberry products increased from 0% to 12% [3/26], in the female population. The use of prophylactic antibiotics fell from 3% to 0%, perhaps because people were appropriately tried on cranberry products first. The referral rate of males to urology increased from 6% to 11%.

Conclusion
We have shown that the incidence and management of recurrent UTIs are a significant problem amongst our elderly, inpatient, population. The reluctance to prescribe prophylactic antibiotics is understandable due to their adverse effects. Our change strategy did improve both the use of cranberry products and referral rate to urology but there is still scope for improvement. Improving the identification of patients with recurrent UTIs, developing clear guidelines on the delivery of cranberry products and improving its availability should also improve compliance with guidelines.
ASSESSMENT OF FLUID MANAGEMENT AND IT'S RELATION TO OUTCOMES FOLLOWING FRACTURE NECK OF FEMUR

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*East & North Hertfordshire NHS Trust, Department of Elderly Care*

**Introduction**

The fluid management in older patients undergoing fracture neck of femur repair tends to be poorly managed and has a significant impact on intra & peri-operative hypotension leading to prolonged length of stay, morbidity & mortality. More education of fluid balance in this group of patients is required including the proposal of protocol driven guidelines to outcome.

**Methods**

A prospective study was carried out in 45 patients aged between 60-96 who underwent surgery in September and October 2012. Data was collected such as: amount of intravenous fluid (IVF) pre-operatively, blood pressure (BP) on admission, pre-operative BP, intra & post-operative BP, BP in recovery, time frame back to BP on admission, type of anaesthesia and antihypertensive medication.

**Results**

Significant intra-operative hypotension (IOH) can be due to insufficient fluid management. 33 patients (73.33%) received 1 litre IVF and 12 patients (26.66%) received 1.5 litre of IVF pre-operatively. 12 patients received 1 litre of IVF and 33 patients received 1.5 litre of IVF intra-operatively. 34 patients (76%) recovered back to BP on admission within 2 days but 11 patients (24%) recovered between 3-7 days. Although there was no significant change in the length of stay in hospital between two groups, among the delayed recovery group, 1 patient died and 2 patients needed to upgrade their discharge destination.

**Conclusion**

The finding showed that appropriate adequate IVF needs to be prescribed pre-operatively. Monitoring BP during surgery using oesophageal doppler, adding IVF protocol in fracture neck of femur pathway, and continuing education of junior doctors, nurses, and health care assistants could also help to improve the outcome.
IS THERE A BETTER WAY TO ASSESS INPATIENT FALL RISK?

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**Background**
Approximately 152,000 falls are reported in acute hospitals every year causing significant morbidity and mortality with an estimated cost of £15 million per annum (NPSA, 2007). Existing methods for identifying those at risk are poor, preventing appropriate targeting of resources.

**Innovation**
We identified seven risk factors for falls in care home residents. These were MMSE < 17, impulsive behaviour, poor standing balance, use of a walking frame, fall in the previous year and use of antidepressants and hypnotics/anxiolytics. This pilot study evaluated whether these risk factors remained predictive in the acute hospital setting. Delirium was also assessed.

All new admissions to the Health and Ageing Unit in a one month period were assessed for these risk factors. Routinely collected STRATIFY scores were also recorded for comparison. Falls during admission were followed up using hospital reporting systems and electronic patient records.

**Evaluation**
After excluding re-attenders, data was collected on 69 consecutive admissions with 16 fallers identified. Only impulsivity was a statistically significant determinant of falling in multivariate analysis (OR 7.29 95% CI 1.62-32.79). This remained significant when adjusted for length of stay. Compared to STRATIFY, the care home tool had a greater area under the curve (0.61 (95%CI 0.44-0.78) vs. 0.81 (95%CI 0.67-0.96)).

**Conclusion**
This pilot study found that the care home tool was more effective at identifying fallers than STRATIFY. This provides proof of principle for a larger study, powered to demonstrate the superiority of the new tool over existing tools and to detect whether any differences in the risk factors collected other than impulsivity exist.

**References**
### LITERATURE AS AN INTERVENTION TO IMPROVE THE PATIENT EXPERIENCE AND FACILITATE THE BUILDING OF RAPPORT

R Press  
*Department of Elderly Care, Watford General Hospital*

#### Background
The patient journey through the acute hospital setting can be, amongst other things, an isolating and boring one. One issue is the lack of mental stimulation afforded on wards where there are no televisions or radios available, another is the amount of time available outside the clinical setting for ‘normal’ conversation (especially with patients who have few visitors).

#### Innovation
A patient library service was started across the open bays of two geriatric wards (n=24), providing a selection of fiction and non-fiction books for the duration of the patient’s admission. The books are taken around the wards on a library trolley which is restocked daily. Importantly, the books are offered to patients by one of the junior doctors, allowing an opportunity for conversation and rapport to be built outside of the confines of clinical management. It also affords increased opportunities to uncover and treat reversible sensory issues (myopia, hyperopia and hearing impairment) which may confer benefit regarding reducing rates of delirium (Inouye SK et al, NEJM 1999 340(9):669)

#### Evaluation
The service was evaluated using a survey administered before (n=12) and two weeks after (n=24) commencement. It demonstrated a reduction in subjective levels of boredom and an improvement in satisfaction with the patient experience. In addition, patients were glad of the opportunity to have a conversation unrelated to their medical care even if they did not borrow a book. Several patients were noted to have significant visual impairment, leading to interventions. Junior doctors appreciated the service as a forum for building rapport.

#### Conclusions
The provision of an inpatient library service on a small scale has been shown to improve the patient experience whether or not a book is borrowed. By increasing opportunities for communication we have subjectively improved rapport and enabled sensory impairments to be noted and appropriate action taken.
AN AUDIT TO EVALUATE THE USE OF A DEMENTIA DIAGNOSTIC ASSESSMENT (DDA) TOOL TO IMPROVE IDENTIFICATION, ASSESSMENT AND REFERRAL OF PATIENTS WITH UNDIAGNOSED DEMENTIA IN SECONDARY CARE

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Department of Medicine for the Elderly, Hull Royal Infirmary

Evidence-base
It is estimated that up to a quarter of cases of the 700,000 people suffering with dementia in the United Kingdom are still undiagnosed. The recent introduction of the national commissioning for quality and innovation (CQUIN) for dementia aims to promote improved screening for dementia of patients over 75 years of age admitted to secondary care and to ensure a subsequent comprehensive assessment and referral to specialist services where appropriate for all cases of cognitive decline.

Change Strategies
Following an initial audit, a DDA tool was introduced into the standard admission proforma for the hospital, with the aim to facilitate the identification of possible cognitive decline on admission with subsequent assessment and referral of appropriate patients.

A re-audit was performed comparing the results of 34 patients admitted to the elderly short stay unit prior to the DDA tool implementation, to 33 patients admitted to the same unit following implementation. The data was collected retrospectively using case note retrieval.

Change Effects
Prior to the implementation of the DDA tool, only 82% were screened for cognitive decline compared to 94% after implementation. Of identified patients requiring further assessment, only 37% had a complete assessment compared to 55% after the tool was introduced. For those patients with no organic cause attributed to their cognitive decline with suspected dementia diagnoses, 11% were appropriately referred before use of the tool and 52% after.

Conclusion
Overall the implementation of the DDA tool has improved performance in screening patients for dementia over 75 admitted to secondary care with subsequent complete assessment and referral for appropriate patients. Additional developments to the DDA tool are being employed to improve functionality, alongside a dementia awareness campaign with recruitment of dementia champions and targeted training for involved staff. We intend to complete a further audit cycle in one year.
MANAGEMENT OF PRIMARY HYPERPARATHYROIDISM (PHPT) IN OLDER PEOPLE: A SERIES REVIEW

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Introduction
Primary hyperparathyroidism is a common cause of hypercalcemia in older people. Surgery is generally recommended to prevent end organ damage. However it is not the favoured treatment for many older people due to co morbidities. We describe our experience with medical treatment of PHPT in older patients for a period of up to 7 years.

Method
Our database showed 12 patients with PHPT. Following data were extracted: Demographics, serial serum calcium levels pre and post treatment, serum creatinine and parathyroid hormone levels, hyperparathyroid/ hypercalcemic crisis, fracture details, duration and frequency of follow up, comorbidities and treatment choice.

Results
- All patients were female, mean age was 84 yrs and mean duration of follow up was 3.5 yrs (range 7 yrs)
- Sodium clodronate (between 800mg and 3200mg per day) adequately controlled serum calcium level - mean pre-treatment calcium 2.9mmol/l and mean post treatment calcium 2.5mmol/L
- One patient did not require any treatment (intermittent mild hypercalcemia)
- Renal function remained unaltered in 11
- Fractures occurred in 5 patients and 4 of them were prior to commencement of treatment
- 1 underwent parathyroidectomy due to persistent hypercalcemia
- During the follow up period 6 patients died, none of the death was due to parathyroid related aetiology
- Success rate with medical treatment of PHPT was 91%

<table>
<thead>
<tr>
<th>Complications/ End organ damage</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypercalcemic crisis</td>
<td>0</td>
</tr>
<tr>
<td>Uncontrolled hypercalcemia</td>
<td>16</td>
</tr>
<tr>
<td>Fracture whilst on treatment</td>
<td>8</td>
</tr>
<tr>
<td>Uncomplicated renal stones</td>
<td>16</td>
</tr>
<tr>
<td>Parathyroid related death</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion
This study shows that hypercalcemia and end organ damages in PHPT can be successfully treated with medications in older people as long as appropriate monitoring strategies are adopted according to their comorbidities.
OPTIMISING BONE HEALTH IN FALLERS AT THE FALLS CLINIC

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2. Department of Academic Cardiology, Hull and East Yorkshire Medical Research and Teaching Centre (Daisy Building) Castle Hill Hospital, Castle Road, Cottingham, East Yorkshire, HU16 5JQ, UK

Introduction
Bone health assessment is a cornerstone of a multidisciplinary falls assessment. The current assessment approach (history, FRAX assessment, appropriate DXA), may include checking vitamin D. Vitamin D insufficiency is prevalent among fallers (72%). Evidence supports vitamin D replacement to improve bone health. Emerging evidence for cardiovascular and non-cardiovascular mortality from the Whitehall study and meta-analysis of 12,000 deaths supports optimal vitamin D levels of 75 -100nM (Tomson, Eur Heart J 2013;34:136).

Method
An initial pilot audit of new patients (Oct-Dec 2011) showed 2/46 had vitamin D level checked, both were deficient (<30nM). A repeat retrospective audit of 58 new patients consecutively seen at the falls clinic (Mar-Aug 2012) assessed the extent of vitamin D deficiency in fallers. Data collected included demographics, osteoporosis and fracture history, bone medications, FRAX assessment, vitamin D level.

Results
The cohort was a high risk population with an average age of 79, predominantly female (74%), 33% already suffered fragility fractures, 45% intermediate/high risk on FRAX assessment, 50% have >1 risk factors for osteoporosis. Vitamin D levels were checked in 43/58. 60% was low (<50nM), and a significant proportion (17/43, 40%) deficient (<30nM). Bone profile, nor any single or combination of clinical risk factors predisposing to fractures predicted vitamin D deficiency in the cohort or the subgroup NOT on calcium/vitamin D supplements.

Conclusion
Low dose calcium and vitamin D supplementation frequently prescribed for fallers or co-prescribed for osteoporosis would sub-optimally treat vitamin D deficiency, predisposing fallers to future fractures. The presence of a high proportion of asymptomatic vitamin D deficiency among fallers raises the question whether recurrent fallers without contraindications should be routinely considered for high dose vitamin D replacement to optimize bone health without vitamin D testing. High dose vitamin D is well tolerated without toxicity even in frail older people. Hypercalcaemia should still be monitored with this approach.
SPECIALIST PALLIATIVE CARE FOR PARKINSON’S DISEASE: EXPERIENCES OF A NOVEL INTEGRATIVE SERVICE

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2. St Catherine’s Hospice Scarborough

Background
Parkinson’s disease (PD) is a common neurodegenerative condition. Despite the recognised need for palliative care in PD, access to either generic or specialist palliative care (SPC) remains poor. Integrated SPC models of care have been described in other conditions. We report the experience of a novel service integrating SPC services for people with PD.

Innovation
The Scarborough integrated PD SPC service is a joint venture between St Catherine’s hospice and the movement disorder clinic at Scarborough General Hospital. Patients with potential palliative care needs are discussed at a monthly multi-disciplinary team meeting with representation from Elderly and palliative care teams.

Evaluation
We retrospectively reviewed the case notes of all 47 patients (34 Male, Ave. Age 77 years) referred for SPC since the service started (30 months). At referral average disease duration was 85 months (range 5-321), mean L-dopa dose was 482mg and 34% of patients were in 24 hour care. Common triggers for referral included; complex symptoms (81%), future care planning (79%) and aspiration pneumonia /dysphagia (30%). Most carers had evidence of strain (88%) and most patients did not retain capacity for complex decision making (81%). 23 patients died and place of death was known for 22; with only 13% of deaths occurring in acute hospital beds (Care home 34%, Hospice 26%, Own home 13%, Hospital palliative care bed 8%).

Conclusions
Access to SPC for PD is achievable in a district general setting. Experience so far indicates a dramatic reduction in death in hospital and increased deaths at home/hospice compared with previous UK data (Snell K et al. Age and Aging 2009; 38(5): 617-19). Cognitive impairment and 24 hour care were common, suggesting referral late in disease. Important triggers to consider referral for SPC include; carer support, future care planning, management of complex persistent symptoms and terminal care.
CAN AN E-HEALTH HOME BASED EDUCATION PROGRAM INCREASE SELF EFFICACY FOR EXERCISE AND TOTAL EXERCISE TIME FOR CORONARY HEART DISEASE ADULTS- A PILOT STUDY

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The Nethersole School of Nursing, Faculty of Medicine, 8/F Esther Lee Building, The Chinese University of Hong Kong, Shatin, Hong Kong

Background
Coronary heart disease (CHD) is the leading cause of death worldwide. Health education that feature regular physical exercise as a secondary preventive measure are rarely incorporated in routinely prescribed practice of care despite persistent international evidence of the importance of regular exercise. The overall aim of the study is to test the effectiveness of an e-health home based educational programme for CHD patients.

Innovation
CHD patients were recruited in a follow up clinic. Usual care included a written pamphlet and brief verbal information regarding the CHD. Patients in the intervention group received an additional health education via an e-health link. E-health link content covered the general knowledge of CHD and walking exercise promotion and suggested regimen. Data were collected at baseline and 2 months after recruitment. Measures included total exercise per week, self efficacy for exercise, demographic and clinical data.

Evaluation
70 patients completed the study with 48 (69%) male. The mean age was 61.7 years old (SD= 8.19). There was no significance at baseline demographic and clinical data. The increase in total exercise time per week in the intervention group was significantly greater than the control group (intervention: 36.4±41.8, control: 8.6±152.7; P=.003). However, both groups reported a small reduction in self efficacy for exercise (intervention: -0.19±1.6, control:-0.25±2.7; P=0.817). Positive perception of the usefulness of the e-health link was found in the intervention group.

Conclusions
The e-health home based education program appear to be effective in increasing total exercise per week leading to higher exercise adherence rate for patients with CHD.
PREVALENCE OF FRAILTY AND ITS ASSOCIATIONS WITH BLOOD PRESSURE AND ANTHROPOMETRIC MEASUREMENTS IN ELDERLY EGYPTIANS

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Introduction
Frailty is a dynamic state of increased vulnerability to stressors and its level depends on several interrelated factors. This work was conducted in order to determine the prevalence of frailty in a sample of Egyptian elderly, and to evaluate the associations between frailty and each of blood pressure and anthropometric measurements.

Methods
One hundred elderly (≥65 years old), men and women, selected from those referred from Surgical Departments for pre-operative assessment, and found to be free from chronic diseases and disability, were included. Comprehensive geriatric assessment was done for every participant. The five criteria of Fried et al., were used for identification and classification of frailty (weight loss, weak grip strength, exhaustion, slow gait speed and low physical activity). Blood pressure was measured for each participant, and some anthropometric measurements were determined [body mass index (BMI), mid upper-arm circumference (MUC), and mid calf circumference (MCC)].

Results
Thirty six participants were non-frail (had no Fried et al., criteria) (36%), 35 were pre-frail (had 1 - 2 criteria) (35%), and 29 were frail (had ≥3 criteria) (29%). Gender and blood pressure measurements differed insignificantly among non-frail, pre-frail and frail groups of elderly, while anthropometric measurements (BMI, MUC, and MCC) were significantly lower (p<0.001) in frail group compared to both pre-frail and non-frail groups.

Conclusions
In this study, the prevalence rates of frailty and pre-frailty were 29% and 35%, respectively. The significant associations noticed between frailty and low anthropometric measurements reveal the importance of this, frequently neglected, part of clinical examination. Further studies are required to unravel these interrelationships for better management of this vulnerable group of population.

Abstract No. 42
IMPACT OF EARLY COMPREHENSIVE GERIATRIC ASSESSMENT IN PATIENTS ADMITTED TO WIGAN INFIRMARY

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Department of Elderly Care, Royal Albert Edward Infirmary (RAEI)

Background
Previous research has demonstrated the benefit of an early (within 24 hours) Comprehensive Geriatric Assessment (CGA) amongst elderly patients presenting to hospital (Caplan et al, J Am. Geri Soc, 2004, 52(9). CGA should encompass all aspects of the patient’s health in a single process and allow for advanced care planning. This process has been shown elsewhere to reduce length of stay (LOS) (Nikolaus et al, Age & Ageing, 1999, 28(6).

Innovation
Previous research has been based within large clinical settings with many resources. This project aimed to assess whether the early CGA process could be effectively delivered within a small DGH environment with limited resources and Geriatricians. The project was carried out by a single Geriatric trainee and Nurse Practitioner whilst continuing with their usual clinical commitments, reflecting the limited resources of many DGH’s. All CGA’s were performed within twenty-four hours of admission to RAEI using a pre-piloted CGA document. The results and recommendations from the CGA were communicated to the patient’s medical team for on-going care.

Evaluation
20 patients were assessed over an 8 week period. Each CGA led to recommended acute interventions and advanced care planning. Acute interventions recommended included further medical investigations, social care planning, medication review, falls assessment and the need for rehabilitation. Advanced care planning requirements were identified for increased social care, psychogeriatric services, community matron support, respite care, and referral to specialist heart failure, palliative care, diabetes, continence and falls teams.

Mean LOS amongst the CGA group was to 5.9 days compared with 12.2 days amongst the general Geriatric admissions to the RAEI.

Conclusion
Despite limited time and skilled resources the early CGA can be effectively delivered within the DGH setting and reduces length of stay. It enables early speciality Geriatric involvement in care to allow early and effective advanced care planning.
**REVIEW OF PATIENTS RE-ADMITTED POST IMPACT PHARMACIST INTERVENTION DESIGNED TO REDUCE MEDICINES-RELATED RE-ADMISSIONS**

H Smith, G Fox, I Khan, C Acomb, U Laverty  
*The Leeds Teaching Hospitals NHS Trust*

**Background**  
The Integrated Medicines oPtimisAtion on Care Transfer (IMPACT) project aimed to enhance assessment of post-discharge needs for patients on the acute older people admission wards at Leeds Teaching Hospitals NHS Trust. Post-discharge needs e.g. clinical follow up or medicines support were communicated to healthcare professionals in primary care and patients/ carers were educated about their medicines.

**Innovation**  
We aimed to determine if IMPACT prevented patients from being re-admitted to hospital with medicine-related problems. Therefore, IMPACT patients who were re-admitted within 30 days of discharge had their cases reviewed by a Consultant Physician for Older People and a Consultant Pharmacist. The cases of 3 additional patients were reviewed after feedback from practice pharmacists in primary care.

**Evaluation**  
Of the 33 cases reviewed, 11 patients were admitted due to a medicines-related problem. Of the 30 patients who were re-admitted within 30 days, 6 were re-admitted with medicines-related problems. The types of medicines identified as a cause of admission or re-admission are shown below.

<table>
<thead>
<tr>
<th>Medicine causing admission</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotic</td>
<td>1</td>
</tr>
<tr>
<td>Anticoagulant</td>
<td>2</td>
</tr>
<tr>
<td>Antidepressant</td>
<td>2</td>
</tr>
<tr>
<td>Antidiabetic</td>
<td>1</td>
</tr>
<tr>
<td>Antiepileptic</td>
<td>1</td>
</tr>
<tr>
<td>Antipsychotic</td>
<td>1</td>
</tr>
<tr>
<td>Benzodiazepine</td>
<td>1</td>
</tr>
<tr>
<td>Calcium channel blocker</td>
<td>1</td>
</tr>
<tr>
<td>Diuretic</td>
<td>1</td>
</tr>
<tr>
<td>Laxative</td>
<td>1</td>
</tr>
<tr>
<td>Opioids</td>
<td>5</td>
</tr>
</tbody>
</table>

The causes of the other re-admissions were multi-factorial and included chest infection, mechanical fall, heart failure, urinary tract infection and reduced mobility/ increased confusion. The overall 30 day re-admission rate for the older people admission wards was 20% over the course of the 6 month project. The re-admission rate for IMPACT patients was 17%.

**Conclusions**  
The review of re-admissions as part of the IMPACT project found a 3% reduction in overall 30-day re-admission rate, although due to the multi-factorial nature of admissions in this population, it was not possible to attribute this reduction to the project intervention.

Abstract No. 44
POSTURAL HYPOTENSION MEASUREMENT – A PROSPECTIVE OBSERVATIONAL STUDY IN A DISTRICT GENERAL HOSPITAL

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Background
Falls in the over 65s cost the NHS £4.6 million per day. Orthostatic Hypotension (OH) is one of the most common causes of falls in older people. It is easily diagnosed with simple measurements but often missed if the measurements are inaccurately done. This may lead to increased morbidity and mortality. We observed discrepancies in the recording of in-patient postural blood pressure (BP) and decided to investigate it further.

Sampling Methods
A prospective observational study was done over a period of two months (September – October 2012). From the general medical wards, we identified 10 patients who were admitted with a fall and who were having postural BPs recorded. We observed the technique used by nursing staff for measuring the BPs, examined patients BP charts and noted the postural BP recordings including the timing of the ‘lying’ and ‘standing’ BPs.

Results
The age range of the patients was 71-90 years with an equal gender distribution. OH was identified as the cause of fall in 8 of the 10 patients. All patients were able to stand for ‘standing’ BPs. Out of a total of 23 postural BP measurements recorded:

- 52.2% were unpaired (only one reading, either ‘lying’ or ‘standing’)
- 34.8% were ‘sitting’ instead of ‘lying’ or ‘standing’
- 21.7% had no ‘lying’ BP
- 1 showed a ‘sitting’ before a ‘lying’ BP
- Only 9.5% were correctly done and recorded.

Conclusion
Inaccuracies were observed in both technique of measuring postural BPs and the recording of the time and/or position of the patient. This study identified an urgent need for training of nursing staff, which is currently on-going. Doctors have also been made aware of the need to check and clarify postural BP recordings. We propose the auditing of this significant finding in a few months.
CLINICAL EFFECTIVENESS

IMPROVING THE ELECTRONIC DISCHARGE LETTER (EDL) ON AN OLDER PERSONS’ UNIT

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Department of Physiotherapy, Older Persons’ Unit, St Thomas’ Hospital, Guys and St Thomas’ NHS Foundation Trust

Evidence Base
NHS Connecting for health has developed a discharge summary toolkit (2008) to assist care providers in meeting national EDL standards. A comprehensive EDL correlates with reduced re-admissions, safe transitions and quality of care after discharge. A recent study into the quality of written communication about older adults was found to be insufficient and represented a potential health hazard for older patients with no information on social and physical abilities; including ADL knowledge and home care services (Garesen & Johnsen 2007 BMC Health Research).

Change Strategies
Our pilot study in Jan 2012 (n=20) identified that the accuracy and quality of information conveyed in EDL’s by our medical colleagues regarding physical condition was either missing (60%) or inaccurate (30%). Our aim was to improve the quality of information about the physical and social condition in the EDL. Five standards were set for inclusion of specific information by the physiotherapists; 1. Accommodation Information 2. Mobility Status 3. Elderly Mobility Scale and Gait Speed 4. Onward therapy referrals 5. Use of abbreviations. An audit cycle was undertaken in June (Cycle 1) and following root-cause-analysis and change implementation a re-audit in Dec (Cycle 2). A proposal was submitted through the Trust’s Clinical Governance Forum.

Change Effects
Total compliance and individual standard compliance of EDL improved between cycle 1 and 2 for the above 5 standards; see Table 1 below.

Table 1: Proportional Compliance Comparisons

<table>
<thead>
<tr>
<th></th>
<th>Total Compliance</th>
<th>Individual Standard Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle 1 (n=33)</strong></td>
<td>69%</td>
<td>76%</td>
</tr>
<tr>
<td><strong>Cycle 2 (n=56)</strong></td>
<td>89%</td>
<td>95%</td>
</tr>
</tbody>
</table>

Conclusions
Our audit provides evidence of a change in practice between cycle 1 and 2 contributing to improvements in the quality of the EDL supporting NHS Connecting for health toolkit and National Standards. Subjective feedback from Physiotherapists, Geriatricians and acute teams suggest that access to accurate and complete patient information in the EDL improved quality and efficiency.
ASSESSMENT OF OSTEOPOROSIS RISK IN PATIENTS WITH PARKINSON’S DISEASE AND A FRACTURED NECK OF FEMUR

H Kerss, M O'Neill

Wirral University Teaching Hospital

Background
Osteoporosis is 3 times more likely in patients with Parkinson’s Disease (PD) compared to age matched controls due to a range of factors including immobility, decreased muscle strength and low body weight. Hyperhomocysteinaemia is an independent risk factor for osteoporosis and is common in PD secondary to levodopa use.

Innovation Assessment of osteoporosis risk can be made via the FRAX & NOGG or Q fracture methods but it is not yet clear which is the most accurate method for assessing risk in patients with PD.

Evaluation
All patients between 1/1/2011 to 31/12/2012 with a fractured neck of femur and Parkinson’s Disease were identified (N=24). 2 patients notes could not be located and one patient died within two weeks and thus were excluded from the study group (N=21). Data was collected from the patient records. FRAX/NOGG and Q fracture risk assessment scores were calculated for each patient and comparison of the management advice suggested by each score was made.

There were 21 patients in total (7 male and 14 female). 13 had complex and 8 had maintenance stage Parkinson’s Disease.

<table>
<thead>
<tr>
<th>Treated</th>
<th>Not Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q Fracture</td>
</tr>
<tr>
<td>Identified High Risk</td>
<td>13 (62%)</td>
</tr>
<tr>
<td>Identified Low Risk</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion
Q fracture risk assessment identified an additional 19% (N=4) of patients with Parkinson’s Disease who were at risk of osteoporotic fragility fracture in comparison to the use of the FRAX/NOGG assessment tool. 18 patients were not on any osteoporosis treatment pre-fracture suggesting there is a cohort of patients who might be at risk of osteoporosis who are not currently being adequately assessed and managed. Routine screening for osteoporosis should be undertaken in patients with Parkinson’s Disease and this is best done with use of the Q fracture assessment tool.
MULTI-SITE AUDIT OF ANTICIPATORY CARE OF IMPULSIVE AND COMPULSIVE DISORDERS IN PARKINSON’S DISEASE

H V Morgan¹, G J A Macphee², J Waugh³, on behalf of Greater Glasgow and Clyde RAD Movement Disorder Group

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2. Department of Medicine for the Elderly, Southern General Hospital, NHS Greater Glasgow and Clyde
3. Clinical Governance Support Unit, Victoria Infirmary, NHS Greater Glasgow and Clyde

Evidence Base
SIGN guideline 113 (Diagnosis and Pharmacological management of Parkinson’s Disease) states that “patients should be warned about the potential for dopamine agonists (DA) to cause impulse control disorders (ICD)”. A retrospective case note audit into practice in this area was undertaken between August and December 2010 across four Scottish Health boards. The aim was to identify if there had been a documented discussion with patients and carers on the risk of ICD prior to commencing and continuing on DA.

Results
Documentation was suboptimal, with only 62% (104/167) of patients having recording at some point during their clinic attendance. Sub-analysis from Greater Glasgow and Clyde (GG&C) showed 81% (75/92) had documentation at some point during attendance. Only 10% patients had documentation of written information being provided, and 16% had documentation that carers were involved in discussion.

Change Strategies
Following the initial audit, a patient agreement form for starting/continuing DA was designed and implemented in April 2011 across GG&C. This contained information on ICD, with signature space for patient, health professional and carer/relative. The audit was then repeated in July 2012 in GG&C, looking at the previous 12 months of practice.

Change Effects
The repeat audit was based across 6 sites in GG&C. 94% (61/65) patients now had documented evidence of a discussion on ICD during their clinic attendance. 63% (41/65) had documentation of relatives being involved, 63% (41/65) receiving written information and a signed patient agreement was found in 35% (23/65).

Conclusion
In summary, the level of compliance with the SIGN guidelines has improved from 62% to 94%. Documentation of carer involvement is still suboptimal as is the percentage of patient agreement forms signed. The latter may be explained by the short time from development and implementation and follow up audit is planned.
EARLY REMOVAL OF URINARY CATHETERS IN PATIENTS WITH HIP FRACTURE USING THE HOUDINI(B) CHECKLIST

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2. Royal Liverpool Hip Fracture Service
3. Continence Specialist Services
4. Infection Prevention and Control, Royal Liverpool and Broadgreen University Hospitals, Liverpool

Background
Urinary catheters are used peri-operatively for patients with hip fracture. Complications include discomfort, haematuria, infection and bypassing. Catheter associated urinary tract infections (CAUTI) are an increasingly important issue with the identification of multiresistant bacteria which can have serious consequences. The risk of complications occurring increases with the duration of catheter. To reduce the risk of CAUTI and other complications, early catheter removal is important.

Innovation
HOUDINI1 checklist is an evidence-based protocol for the assessment and timely removal of urinary catheters. HOUDINI is an acronym for haematuria, obstruction, urological surgery/intervention, decubitus ulcer, input/output monitoring, nursing care and immobility.

With agreement of the Infection Prevention Society Research and Development group we modified the original HOUDINI protocol with the addition of ‘B’ for ‘bowels moved’ to make the criteria more specific to patients with hip fracture. Nursing staff were trained in the use of the HOUDINI(B) checklist, the risks of CAUTI and continence care before the checklist was introduced.

Evaluation
Data was collected on length of time to catheter removal following implementation of the HOUDINI(B) checklist and compared to previously collected catheter removal data. Prior to the use of the HOUDINI(B) checklist 45% (10/22) catheters were removed within one week of insertion. After implementing the HOUDINI(B) checklist an 82% (23/28) increase in the removal of catheters within one week of insertion was demonstrated. Fisher’s exact test: p-value=0.015.

Conclusions
The results demonstrate that use of the HOUDINI(B) checklist in association with staff education assists in the early removal of urinary catheters in patients with hip fractures. Ongoing data collection is required to demonstrate the impact of the HOUDINI(B) checklist on infection and other complication rates.

References
AUDIT OF THE IMPLEMENTATION OF A DEMENTIA CQUIN DIAGNOSTIC SCREENING TOOL: A DISTRICT GENERAL HOSPITAL EXPERIENCE

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Evidence-Base
An estimated 44% of people with dementia in England have been formally diagnosed (Alzheimer’s Society, www.alzheimers.org.uk, 2012). Diagnosis brings the benefit of enabling community services, with the intention of reducing emergency hospital admissions and carer pressure. The aim was to audit the implementation of a three stage dementia CQUIN diagnostic screening tool at Mid Essex Hospital Trust (Department of Health, www.gov.uk, 2013).

Change Strategies
Cycle 1 involving a retrospective audit of 27 patients aged 75 years and over on the Elderly Care wards, during November 2012, found poor compliance with the screening tool. The following changes were implemented prior to cycle 2: initial audit findings were publicised within the Trust audit meetings and email, a Dementia Multi-Disciplinary Team was established and a band 5 Dementia Nurse was employed to aid in publicising and completing the tool.

Change effects
In cycle 2, a retrospective audit was conducted for all eligible patients admitted to Broomfield Hospital during February 2013. Out of 570 patients 271 were excluded.

Compliance with stage 1 of the tool (identification) improved by 60% (initially 28% and repeat 88%). Stage 2 (assess and investigate) showed an increase of 79% (initially 15% and repeat 94%). Stage 3 (referral) increased 85% (initially 15% and repeat 100%).

Conclusion
Results demonstrate the interventions increased compliance. To meet the dementia CQUIN payment threshold 90% compliance for three consecutive months is required. A small increase in compliance in part 1 at Mid Essex Hospital Trust is still required.
IMPROVING SPEED OF ACCESS TO CAROTID ULTRASOUND FOR PATIENTS WITH ACUTE STROKE AND TRANSIENT ISCHAEMIC ATTACK: A PLAN-DO-STUDY-ACT (PDSA) CYCLE AUDIT

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Evidence-base
Significant carotid stenosis increases stroke risk. Early carotid imaging in the high-risk period following Transient Ischaemic Attack (TIA) or stroke is fundamental to optimising benefit from carotid endarterectomy. NICE 2008 and Intercollegiate Stroke Working Party 2012 recommend that all patients suitable for endarterectomy have carotid imaging within one week of non-disabling (anterior circulation) stroke or TIA.

Change Strategies
This retrospective audit analysed time from request to carotid ultrasound (CUSS) during September 2012 in Tauranga Hospital; 8 patients were post-stroke, 10 had a TIA. Mean wait for inpatients was 6.2 days (range 1-19 days) and outpatients 13.4 days (8-21 days). Strategies to reduce delays were multi-faceted: an online TIA pathway was introduced for GPs and hospital doctors, with guidance on timely CUSS requesting. An acute Stroke unit was opened in January 2013 with a team dedicated to managing inpatient stroke and TIA. The radiology department helped develop a new CUSS request form to improve scheduling prioritisation. Educational meetings on management of cerebrovascular disease were held with Radiologists, GPs and Hospital Doctors. These changes were made without any additional funding.

Change effects
The second audit cycle was completed for all CUSS patients in March 2013; 8 post-stroke, 20 with TIA. Inpatient waiting time fell to 1.2 days (range 0-4), low risk outpatient TIA referrals waited 7.1 days (1-12).

Conclusion
This audit demonstrated a significant reduction in waiting times for CUSS in acute stroke/TIA patients after implementing a number of changes in a District General Hospital. Demand for CUSS has increased, with greater numbers of requests for TIA patients, perhaps reflecting increased clinical vigilance in aggressively addressing risk factors following TIA. PDSA cycle audit is the model for achieving targets set by evidence based guidelines.
HEART FAILURE IN THE OLDER PERSON: IS THERE STILL A PLACE FOR THE GERIATRICIAN?

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Background
The National Heart Failure UK Audit (2011/2012) recommends cardiology services should manage in-hospital heart failure, demonstrating better survival outcomes. However frail older peoples’ needs were not reflected; cognitive impairment and multi-morbidity were excluded. Our objective was to survey our older patients’ characteristics and management for acute heart failure admission.

Sampling Methods
We sampled forty-five patients admitted to the Older Persons’ Unit with heart failure (January-March 2013) collecting data from case notes and discharge summaries, adapting the National Heart Failure Audit tool adding domains including cognition, non-cardiac co-morbidities and dependency.

Results
Mean age 86yrs old, mean length of stay 22 days, 62% (28/45) had heart failure with preserved ejection fraction. Most lived alone 62% (28/45). 32% (14/44) scored less than 24/30 on mini-mental state examination. Non-cardiac diseases were common; dementia 22% (10/45), chest disease 22% (10/45), diabetes mellitus 24% (11/45), stroke 18% (8/45), chronic kidney disease 31% (14/45). Admission echocardiography performed in 67% (30/45), brain natriuretic peptide level in 71% (32/45). In patients with reduced ejection fraction, 85% (11/13) were discharged on a beta-blocker. Only 38% (5/13) were discharged on an angiotensin-converting-enzyme inhibitor; of those who were not 50% (4/8) had significant hypotension, 38% (3/8) had significant acute kidney injury.

Key conclusions
Cognitive impairment and co-morbidity burden was common. Not everyone received evidence-based medical therapy, mostly clinically justified. Without considering co-morbidity, frailty and medication intolerance, streamlining services to a specialist approach may be detrimental to the complex frail patient. The National Heart Failure Audit should incorporate these aspects to reflect older patients’ needs.
FRAILTY IDENTIFICATION IN ACUTE MEDICAL ADMISSIONS

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**Background**
Frailty and its associated health outcomes are well documented. Ideally frailty should be identified early in the patients interface with secondary care to allow targeted Comprehensive Geriatric Assessment (CGA). This requires a short, simple validated tool for the identification of frailty which does not exist in the literature. We developed a quick pragmatic screening tool based on the known evidence, the Frailty Identification Tool (FIT) test.

**Innovation**
We introduced the FIT test without any additional training for staff. If 1 or more of the criteria were met then it suggested frailty.

1. Over 65 and a care home resident
2. Over 75 with confusion
3. Over 75 with falls or reduced mobility
4. Over 85 with >4 co-morbidities

We collected data for 170 consecutive patients referred to AMU. We recorded hospital number, age, presence of frailty, admission observations and the clinical opinion of the senior medic regarding the patients’ frailty status.

**Evaluation**
170 patients had data recorded with 73% being over the age of 65. Frailty was identified in 35% (60/170) of the patients as defined as having at least one criterion from the FIT test. Correlation between the FIT test and clinical judgement was good at 82% for those identified as frail. Prevalence of each frailty criterion identified is displayed below.

<table>
<thead>
<tr>
<th>Frailty Criteria</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of times identified</strong></td>
<td>7</td>
<td>15</td>
<td>30</td>
<td>17</td>
</tr>
</tbody>
</table>

**Conclusions**
The frailty criteria used showed a good correlation in frailty status between patients identified as being frail by the tool and the opinion of the senior clinician reviewing the patient. This tool also identifies a similar proportion of patients as being frail as previous studies. Based on this information we intend to pilot the tool in routine use with agreed Key Performance Indicators (KPIs) to identify appropriate patients for CGA.
SCREENING FOR COGNITIVE IMPAIRMENT IN PATIENTS OVER 65 YEARS OLD BY USING COGNITIVE SCREENING TOOLS SUCH AS ABBREVIATED MENTAL TEST SCORE (AMTS) FOR EARLY DIAGNOSIS AND MANAGEMENT OF DELIRIUM

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Evidence-base
As per Royal College of Physicians national guidelines, delirium affects up to 30% of older patients admitted to hospital. Patients with delirium have high mortality (6-18%), institutionalisation and complication rates as well as increased length of hospital stay. Recent evidence demonstrates that improved understanding of delirium by early diagnosis using AMTS screening tool and attention to at-risk patients can both prevent the onset of delirium and reduce future episodes.

Change Strategies
Audits were carried out in 3 cycles (first, second in 2010, and third in 2012). These looked onto the completion rates of AMTS on 1st clerking of medical and trauma patients. In the interval between the first two audit cycles, local change strategies included educational meetings at both departmental and hospital-wide levels, emails, posters, AMTS stickers and red marker circling on medical admission booklet. After second cycle a new medical booklet was introduced highlighting use of AMTS in over 65 year olds.

Change Effects
In first audit cycle in 2010 retrospective case note reviews of 83 patients 65 years or older found AMTS completion at 54%. Of these 60% were completed by house officers. 64% of these patients were reviewed by geriatrician consultant in post take ward round. The second audit cycle found marked improvement, with 75% AMTS completion by all grades of doctors and no difference between Geriatricians and General Physicians. In the third audit cycle with the new admission booklet 78% patients had AMTS completed on admission with no variation in grade of doctors and speciality.

Conclusion
The development of new admission booklet with highlighted AMTS together with improved education concerning early diagnosis of delirium and identifying at risk patients over the past years have led to more awareness and better detection of cognitive impairment. We postulate that this will translate into improved patient outcomes by early management of delirium.
FRAILTY IN THE EMERGENCY DEPARTMENT: ARE BED ALLOCATION PRESSURES PRIORITISED OVER PATIENT FRAILTY IN THE ALLOCATION OF GERIATRIC BEDS?

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Background
Clear frailty criteria are rarely used in assessing elderly patients for admission to geriatric wards from the Emergency Department (ED). This means frailty may often be a secondary consideration in an allocation system where time pressures and bed occupation pressures are paramount. These pressures particularly apply to elderly patients (Mason, S., Weber, E.J., Coster, J. (2012) Annals of Emergency Medicine 59 (5) pp.341-349). We aimed to evaluate whether, given these pressures, frail patients are being triaged appropriately to geriatric wards in our university teaching hospital.

Sampling methods
We sampled all 118 patients over 75 admitted from ED to geriatric and non-geriatric medical wards on weekdays over two-weeks. Patients with greater subspecialty needs were excluded i.e. Intensive / Intermediate / Coronary Care Units, Infectious Diseases.


Results
Using each tool, distribution of frailty is similar between geriatric and non-geriatric wards.

<table>
<thead>
<tr>
<th>Tool</th>
<th>p-value</th>
<th>Mean (Geriatric) (n=56)</th>
<th>Mean (Non-Geriatric) (n=62)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS</td>
<td>0.58</td>
<td>4.93±1.84</td>
<td>5.13±2.10</td>
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<tr>
<td>PRISMA-7</td>
<td>0.5277</td>
<td>3.43±1.37</td>
<td>3.60±1.50</td>
</tr>
<tr>
<td>ISAR</td>
<td>0.35</td>
<td>2.88±1.32</td>
<td>2.66±1.61</td>
</tr>
<tr>
<td>rEFS</td>
<td>0.75</td>
<td>7.91±2.86</td>
<td>7.73±3.35</td>
</tr>
</tbody>
</table>

Conclusions
The results suggest that patient frailty is not driving bed allocation in geriatric wards. Instead, it is likely that other factors are prioritised in the bed allocation process. Introduction of clear frailty criteria at ED may improve the prioritisation of frailty in geriatric bed allocation.
COGNITIVE IMPAIRMENT PREDICTS INADEQUATE ANALGESIA IN THE ACUTE SETTING FOLLOWING FRACTURE NECK OF FEMUR

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2. Department of Orthopaedic Surgery, Wythenshawe Hospital, Southmoor Road, Manchester

Background
Research suggests individuals who suffer from dementia are less able to vocalise pain than the cognitively intact population. This feature of cognitive impairment may be leading to a chronic under-detection of pain as current assessment tools, especially in the acute setting, rely heavily on the participation of the patient.

Methods
To explore inconsistencies in pain management within the acute setting we conducted a retrospective assessment of 224 patients presenting with fractured neck of femur over 12 months at the A&E department of a large tertiary referral centre. These patients were split into either a dementia or a non-dementia cohort based on their abbreviated mental test score.

Results
Significant differences were observed between the management of the two cohorts. In the ambulance 45% of dementia patients were prescribed no pain relief whatsoever compared with just 8% of the cognitively-intact patients. After arrival at A&E these inconsistencies continued with 69% of the non-dementia cohort receiving the strongest opioid analgesia compared with just 37% of the cognitively impaired patients. Strikingly, the dementia cohort would also wait on average an hour longer before receiving this initial pain relief.

Conclusions
We believe that these differences stem from dementia patients being unable to vocalize their pain through traditional assessment tools. We recommend the development of a tool which can be applied in the acute setting which relies less on vocalization and more on objective features of pain.

Abstract No. 56
HOW DO WE REDUCE READMISSIONS?

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Evidence-Base

Emergency readmissions within 30-days of hospital discharge are used as a performance indicator and since 2011 have imposed a financial penalty for NHS Trusts.

Penalties for readmissions are predicted to cost Trusts £4 million in lost income annually (Sg2 'Service Kit: Reducing 30-Day Emergency Readmissions' July 2011). The current financial climate provides strong impetus to reduce readmissions, but how to achieve this is unclear as systematic reviews have failed to conclude risk factors for readmission, rates of preventable readmissions and solutions (RAND 2012).

Change Strategies

Historical audits suggest that readmission rates in our department are stable despite many system changes.

We introduced a key to standardise case-note review and 2 Consultant Geriatricians used it to review 6 readmitted patients’ case-notes independently each month for 1-year. They discussed their findings to identify modifiable causes of readmission and presented these along with directorate readmission figures at 2-monthly clinical governance meetings.

After 4-months, it became apparent that readmissions occurring more than 7-days after discharge were rarely linked to the index admission. Only those within 7-days were reviewed thereafter.

Change Effect

Readmission rates were not reduced by this intervention.

The majority of readmissions were felt to be predictable but without an identifiable modification that might have prevented readmission.

Interventions

to reduce readmissions on an individual case basis were identified but none that could inform systematic changes at directorate or trust level.

Conclusions

Reviewing case notes and presenting findings to our department did not reduce readmissions.

Readmissions occurring greater than 7-days after discharge were rarely related to the original admission.

In some cases, a longer length of inpatient stay might have prevented readmission. Length of stay is also a performance indicator and addressing one factor may adversely affect the other.
# Clinical Effectiveness

## Patients and Physicians Reporting of Non-Motor Symptoms in Parkinson’s Disease Clinic Attendees

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### Background
Non-motor symptoms (NMS) in Parkinson’s disease (PD) are associated with poor quality of life yet they are poorly recognised by physicians. The primary aim of this project was to assess the prevalence and recognition of NMS in our PD patient population.

### Sampling Methods
Between June and November 2012 we prospectively surveyed 100 idiopathic PD patients via the movement disorder clinic. Patients or their carers completed the 30 item Non Motor Symptom Questionnaire (NMSQ). A trained assessor performed the Montreal Cognitive Assessment (MoCA). We retrospectively reviewed the clinic letters for reported NMS identified by the clinic physicians.

### Results
The patients’ average age was 78.8 years (range 63-91) and age at onset was 72.6 years (range 53-87). 67% were males.

On average patients reported 11 NMS and physicians reported 2. The most common NMS reported by patients were nocturia (66%), memory impairment (57%), urgency (54%), dribbling of saliva (52%), constipation (50%) and depression (50%); and by the physicians were hallucinations (49%), sleep disturbance (43%), falls (34%), memory impairment (25%) and autonomic symptoms (20%).

Sexual problems were reported by 33/100 of whom half were over the age of 80.

Cognitive impairment (MoCA<26) was noted in 90% of patients with average MoCA of 17.9.

### Conclusions
Physicians under-reported urinary incontinence, constipation and depression but over-emphasised psychotic symptoms. NMS including sexual problems were reported as frequently in the older patient population as with their younger counterparts.

Despite the high prevalence of cognitive impairment, this was under-reported by both patients and physicians and, importantly, it did not correlate with age or duration of illness.
HOW CAN WE IMPROVE ‘DO NOT ATTEMPT CARDIOPULMONARY RESUSCITATION’ (DNACPR) AND END OF LIFE CARE (EOLC) DECISION MAKING?

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². Leeds Teaching Hospitals NHS Trust

Evidence-Base
DNACPR and EoLC decision making is challenging. The recent NCEPOD report (Time to Intervene, 2012) has highlighted the need to make such decisions as regularly and early as possible. A previous audit at our institution (Harkness et al; Q J Med 2006;99:683-690) demonstrated significant improvement was required in the consistency and number of CPR decisions being made.

Change Strategies
A revised DNACPR form, decision making tools, and updated CPR guidelines have since been introduced. A prospective case note audit on Elderly and Acute medical inpatients was carried out over four days. This assessed CPR decision making, ceiling of care, EoLC preferences and patient capacity against best practice, then compared results to the audit performed in 2006.

Change Effects
There was no improvement since 2006. In the 210 patients included, only 76 (36%) CPR decisions were made, of which 96.1% were DNACPR. Of these patients, 40.2% of the patients in Elderly Medicine compared to 8.3% in Acute Medicine had a CPR decision made. Only 9 cases had a ceiling of care documented, all of which were within Elderly Medicine. 17 decisions were made <24 hours of admission but 30 were made after 7 days. In only 61% of cases was a DNACPR decision discussed with either the patient or next of kin. Capacity was documented in 18 cases and end of life preferences in 15 cases.

Conclusions
Geriatricians were more likely than Acute Physicians to make CPR and EoLC decisions. The lack of improvement in CPR decision making, despite a clear policy and pathway, suggests a novel approach to this issue is required.

We are currently piloting a mandatory Consultant-led Post Take Ward Round checklist to include CPR decision-making and Ceiling of Care. This has been piloted on the stroke wards, the results of which are being reported separately.
# A MULTI-DEPARTMENT AUDIT EVALUATING DOSE ADJUSTMENT IN RENAL IMPAIRMENT

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Medical Student at Newcastle University  
Audit undertaken in the Freeman Hospital, The Great North Children’s Hospital and Bewick Road Surgery, Gateshead

## Introduction and evidence-base

In renal impairment, prescribing drugs at their typical doses leads to toxicity or reduced drug efficacy. A 2010 geriatrics audit found an 87.6% compliance rate to the dose adjustments detailed in the British National Formulary, the commonest used guideline. Its adjoining survey highlighted poor confidence in junior doctors in identifying the necessary drugs. A 2013 audit in renal paediatrics found 96.0% compliance.

This audit aims to assess prescribing compliance and explore the potential for an education/reference tool to improve accuracy.

## Methods

The active prescriptions for 20 geriatric inpatients and 18 primary care patients over aged 70 were compiled from online databases and paper records. These were compared with the BNF and pre-admission prescriptions. A multiple-choice questionnaire was issued to doctors involved in prescribing in renal impairment.

## Results

Of the total 386 prescriptions, 367 (95.1%) complied: 226/234 (96.6%) in geriatrics and 141/152 (92.8%) in primary care. 6 (75.0%) non-compliant prescriptions in hospital were present pre-admission. The survey (n=15) again found poor confidence in newly-qualified doctors. 80% requested access to The Renal Drug Handbook or more training.

## Conclusions

Harmful doses remain inappropriately prescribed, particularly of short-course antibiotics. A significantly lower compliance rate and the high number of non-compliant hospital prescriptions present pre-admission suggests increased awareness is needed in primary care. Despite an improvement in geriatrics since the 2010 audit, thorough review of pre-existing prescriptions is required when admitting a patient. The most newly-trained doctors remain poorly confident-improved training at an undergraduate level as well as ward-access to The Renal Drug Handbook is recommended.
Background
The number of osteoporotic fractures continues to increase in the UK, and although there are effective oral treatments, their long-term persistence remains poor. Intravenous bisphosphonates offer an attractive alternative although administration often requires a day-hospital or day-case admission.

Innovation
We are one of the first in the country to have developed an innovative intravenous zolendronic acid at home service. A formal contractual agreement was undertaken with Healthcare at Home. The patient pathway comprised of assessment in the outpatient clinic, consent and routine blood tests. A prescription is then sent to Healthcare at Home, who administered the 1st and subsequent infusions, directly in the patient’s home, within 4 weeks. A system re-call ensured appropriate follow up.

Evaluation
A telephone questionnaire was undertaken in 52 patients who had attended the day hospital the previous year for their 1st infusion and who had been referred to Healthcare at Home for their 2nd infusion. On a scale of 1-not convenient to 5-very convenient, when asked how convenient was the service, day-hospital median score was 3 and at home service, 5. On rating the service 1-very poor to 5-excellent, the median score for the day hospital service was 3 and at home, 5 and given the choice 51/52 patients preferred the at home service. There were no reported adverse events and overall cost savings of £ 292 per patient (day hospital tariff + drug cost minus Healthcare at home service + drug cost).

Conclusion
This services offers an innovative, safe and cost-effective delivery of intravenous bisphosphonate at home. Patient preference and patient satisfaction was high. Clearly as generic intravenous zoledronic acid becomes available this year, drug delivery will become an important issue.
LOW TRAUMA FRACTURES IN THE ELDERLY: THE NOTTINGHAM FRACTURE LIAISON SERVICE

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2. Department of Elderly Medicine Nottingham University Hospitals NHS Trust

Background
Epidemiological data and incidence of non-hip fractures are less well described compared to hip fractures, particularly in the elderly. Clearly with limitations in healthcare resources accurate demographics are important for future healthcare planning. Having information on it will aid the use of limited health care resources. We aim to describe fracture incidence using prospective data from the Nottingham Fracture Liaison Service.

Sampling methods
Prospective data was collected from the Nottingham Fracture Liaison service (population catchment 640,000 – Nottingham city, Broxtowe, Gedling and Rushcliffe district) over 4 years (2008-2011). ICD-9 codes were used to classify the types of fracture. Using population figures from the Office of National Statistics, fracture incidence rates were calculated per 10,000 populations.

Results
7767 patients (5860 female and 1907 male); mean age (SD) of 68.3(11.7) with 7806 fractures presented over this time period. The average annual incidence of non-hip fractures was 98/10,000 population. The overall incidence in men was 24/10,000 and in women 73/10,000. For women, the incidence of fracture increased with age (r = 0.95, p=0.01) with an incidence of 121/10,000 in the over 75s, however in men remained the same (r = 0.24). The over 75s were more likely to fracture their wrist (OR 1.36, 95% CI 1.24-1.50, p<0.01); humerus (OR 1.87, 95% CI 1.65-2.12, p<0.01); and clavicle (OR 1.34, 95% CI 1.07-1.69, p=0.011) compared to other fractures. There was linearity with radius/ulna and humerus fracture with age (r=0.96, r=0.98 respectively, p<0.01), but not for other fractures.

Conclusion
The incidence of non-hip fractures is high in the elderly population, with fractures of the upper limb more common. With an ageing population this numbers are projected to increase and therefore effective strategies to prevent falls and osteoporosis are clearly necessary.
A SURVEY OF DECISION MAKING AT THE END OF LIFE IN A DISTRICT GENERAL HOSPITAL

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2. Department of Geriatric Medicine, Frimley Park Hospital, Frimley, Surrey

Background
As Doctors with an interest in end of life care, we wanted to explore practice at a District General Hospital. We observed that many patients lack capacity at the end of life and there is often a missed opportunity for Advanced Care Plans (ACP).

General Medical Council guidance recommends that Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) orders should be made in a timely fashion, by a senior Doctor and discussed with the patient or family as appropriate.

The Liverpool Care Pathway (LCP) is used to support dying patients (31% in the National Care of the Dying Audit) to ensure that the best quality of care is provided.

We aimed to identify what proportion of patients lacked capacity and how many had ACP. We recorded the circumstances surrounding DNACPR decisions and the proportion of patients supported with the LCP.

Sampling Methods
We reviewed 212 available notes for patients that died in the first quarter of 2011. Data was collected using a proforma.

Results
28% of patients had capacity to make decisions. 37% of patients lacked capacity and we could not comment on 35%. 1% had an ACP.

60% of DNACPR orders were made on admission. 61% were made by a consultant. The decision was discussed with the patient or family in 82% and no one in 18%.

51% of patients died on the LCP. This was started during working hours in 78%. It was unknown why 34% were not on the LCP.

Conclusions
Many patients lacked capacity and only two patients had ACP, highlighting an area for development.

Although it can be improved, we identified that there are areas of exemplary practice regarding DNACPR orders that must be maintained.

Our survey shows that LCP usage is above the national average, suggesting good quality care for dying patients.
A CONSULTANT DELIVERED POST TAKE WARD ROUND (PTWR) CHECKLIST IMPROVES CARDIOPULMONARY RESUSCITATION (CPR) AND CEILING OF CARE (COC) DECISION-MAKING ON THE HYPERACUTE STROKE UNIT (HASU)

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Department of Stroke Medicine, Leeds Teaching Hospitals NHS Trust, Leeds

Evidence-base
A recent audit of CPR and CoC decision making at our institution demonstrated poor practice within Geriatric and Acute Medicine, with no improvements since 2006 despite development of a clear policy and pathway. The recent NCEPOD report (Time to Intervene, 2012) has highlighted the need to make such decisions as regularly and early as possible. A more robust method to ensure such decisions are made was piloted on our HASU in the form of a PTWR checklist.

Change Strategies
Retrospective data was collected from clinical notes for the pre-intervention audit (26/10/12 to 24/01/13), after which a PTWR checklist designed to improve decision making was introduced. Doctors were educated at a departmental meeting and encouraged to include the sheet in the clerking proforma. A post-intervention audit was completed two months later (25/01/13 to 27/03/13).

Change effects
Pre-intervention audit: n=184 patients (mean age 72 years) with Post-intervention audit: n=136 patients (mean age 74 years). The PTWR sheet was completed in 61% (83/136) of patients. There was a significant increase in the number of CPR decisions (48/184 versus 84/136, p<0.0001), with over twice as many patients having a decision made <24 hours (31 versus 67). Significant consultant variability in decision-making still occurred (15-37% versus 21-92%). There was a significant increase in documentation of CoC (32/48 versus 73/85; p<0.05). There was no significant difference in the reason for DNACPR decisions, or documentation of discussions with patient and/or next of kin.

Conclusion
Introducing a PTWR checklist significantly increased the number of CPR and CoC decisions being made. Consultant variability remained an issue. Documentation of discussions around DNACPR could be further improved. We plan to improve compliance with the PTWR checklist by fully integrating it into the admission clerking proforma, followed by a further audit.
DELAY OR CANCELLATION OF SURGERY FOR HIP FRACTURE PATIENTS

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Russells Hall Hospital, Dudley

Introduction
Early surgery for hip fracture is associated with reduced pain and decreased mortality and length of stay.

Method
An audit of delay/cancellation of operative management of hip fracture in a UK teaching hospital during 24 months period. Delay/ Cancellation causes were divided into avoidable and unavoidable categories. Avoidable causes include full operative list, bed unavailability, awaiting pacemaker checks, consent not taken, and delayed group & save. Unavoidable reasons included medical unfitness, chest, cardiac reasons and advanced malignancy.

Results
Total number of hip fracture patients admitted was 977, 6 were excluded because of incomplete documentation and 971 were included. 15% (147/971) of patients were delayed/cancelled; 103 females and 44 male. The mean age was 84.9 and 81.5 years respectively. 54% (80/147) of the delay/cancellations were potentially avoidable. 20% (30/147) were due to full list/ lack of theatre time. Further investigations were requested but could not be done in a timely fashion in 9% (13/147) of cases. Decision for surgery was changed in 7% (11/147) of cases but this was too late to add other cases on the list. 5% (7/147) were delayed due to raised INR that was not recognised earlier or not given antidote in time. In 12 (16/147) reasons were related to delayed group and save lack of consent and bed availability.

46% (67/147) of delay/cancellations were unavoidable. 16% (23/147) were medically unstable; 9% (13/147) had chest infections, 4% (6/147) had cardiac disease, 5% (7/147) had fast atrial fibrillation. 7% (10/147) were due to raised INR that was not normalised despite vitamin K injection. 4% (6/147) had, extensive metastasis in which prophylactic fixation was not possible.

Conclusion
More than 50% of the causes of delay of operative management of hip fracture were avoidable. We suggest early orthogeriatrician involvement and use of a checklist to remind and guide juniors to reduce the delay of surgery.
SIMULATION FOR FOUNDATION YEAR SURVIVAL SKILLS (SIM-FYSS) - USING SIMULATION TO TEACH MEDICAL UNDERGRADUATES TO CARE FOR ELDERLY INPATIENTS BEFORE ENTERING THE UK FOUNDATION PROGRAMME

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Medical Education Department, NHS Lanarkshire

Background

Innovation
A questionnaire sent to local Foundation Year 1 doctors established the need for further learning in Geriatric Medicine prior to commencing the UKFP. We designed an educational intervention, using immersive simulation with reflective feedback and small group workshops. This was run for 16 final year students from Glasgow University and evaluated with pre- and post-course questionnaires assessing candidates confidence levels in dealing with common medical problems in elderly inpatients.

Evaluation
Using a two-tailed unpaired t-test to compare pre- and post-course self-rating scores for the question “How well do you feel prepared to assess and manage the following...?”, we demonstrated statistically significant improvement for the following domains: Dementia (p=0.0023), Parkinson’s Disease (p=0.0093), Falls (p=0.0470), Poor Mobility (p=0.0126), Multiple Co-morbidities (p=0.0141) and End-of-life Care (p=0.0009). The only domain that was not improved significantly was Confusion (p=0.1790). 100% of candidates felt the course was beneficial and would recommend it to a colleague.

Conclusions
The new course has evaluated well both in terms of immediate educational benefit and acceptability. We now plan to follow this cohort of students up after they have started their UKFP posts, to assess whether there is any persistence of the measured benefit. In light of our experience so far, we aim to offer the course to a larger cohort of students in 2014 with further evaluative measures planned.
ASSESSING FRAILTY IN THE ACUTE MEDICAL ADMISSION OF ELDERLY PATIENTS

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Background
Managing acute admission of frail older patients is a big challenge in hospitals. Length of in-patient stay, in-patient mortality and 90-days readmission are significant in this group of patients. The Comprehensive Geriatric Assessment (CGA) is the best approach in acute geriatric care.

Methods
A survey on the records of older patients aged 75 and above, acutely admitted to a district general hospital, England from the 15th March 2012 to 16th April 2012 was conducted. A frailty assessment tool was implemented and then validated. Using this assessment tool frailty screening was undertaken and provision of CGA was evaluated in the group of patients who fulfilled criteria of frailty. All data of patients were processed and analyzed using STATA 11 software (Statistical package for data analysis).

Results
A total of 232 patients with mean age of 84.25±5.8 years were involved. 129 out of a total of 232 patients (55.6%) fulfilled frailty criteria of the survey. Among 129 frail patients 80.6% presented with lack of mobility over 24 hours, 69.8% admitted with falls, 47.3% had known dementia or delirium and 45% admitted from care homes. Patients aged above 85 years were more likely to have frailty compared to patients aged 75-85 years old (OR: 4.78, 95% CI: 2.6-8.6, P-value <0.001). Patients assessed by a front door geriatric team were more likely to receive CGA than those not seen by the front door geriatric team (adjusted OR 2.8, 95% CI: 1-7.6, P-value 0.04).

Conclusion
Prevalence of frailty is high in acute admissions of older patients. Therefore it is imperative to conduct frailty screening and deliver CGA to these frail older patients in hospitals.
INTRODUCTION
The Gold Standards Framework (GSF) has been shown to be effective in improving care for people nearing the end of life. The GSF Prognostic Indicator Guidance (PIG) helps target adult patients predicted to be in the final 6-12 months of life who might be in need of palliative care and advanced care planning.

METHODS
59 casenotes were randomly reviewed to establish how often markers of decline (from the PIG) are found in patients dying within 30 days of hospital discharge, and whether the GSF best practices were applied to their hospital care. We also recorded how frequently an increase in dependency (ID) occurred prior to death.

RESULTS
- Mean patient age was 84 years (range 25-96), 57% were males.
- Mean Hospital Length of Stay (LOS) was 14.81 days, (median: 12.00, range: 1-84).
- Markers of decline were found in 40/59, with general performance and specific cancer related decline being most common.
- Mean discharge to death interval (DDI) was 11.5 days (range 1-28).
- ID occurred in 23.7% with a trend toward increased LOS (17.29 vs 13.64 days) although DDI was longer (15.1 vs 10.6 days).
- 91.5% of patients were discharged with increased support or to a care home.
- GSF was suggested in only 62% of discharge letters, DNACPR decisions made in 82% and end of life preferences were only discussed with the patient or proxy in 46% of cases.

CONCLUSIONS
Most patients were elderly, frail and discharged to care settings. These data suggest that even where death is not unexpected within 12 months, hospital teams are missing opportunities for advanced care planning and admission avoidance strategies. Using ID as a flag for functional decline, and formal use of the GSF PIG toolkit may help hospital teams initiate care planning discussions needed to improve high quality end of life care.
**DOES A FRONTLINE MULTI-PROFESSIONAL QUALITY IMPROVEMENT PROGRAMME ON A GERIATRIC ASSESSMENT UNIT RESULT IN A REDUCTION IN CARDIAC ARREST CALLS AND SERIOUS INCIDENTS?**

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**Evidence Base**
Reconfiguration of Trust Acute Geriatric Services led to concerns about the ability to prioritise patients on the Admissions Unit, highlighted by serious Incidents (SIs) and unacceptable delays in assessment and treatment. We evaluated the outcomes of a patient safety improvement project, focused on the recognition, prioritisation and assessment of critically ill patients.

**Change Strategies**
In August 2011, a frontline team of doctors, nurses and healthcare assistants designed and delivered interventions to optimise the response to acutely ill patients using the Modified Early Warning Score (MEWS).

The interventions included:

- A "Priority Response Team" (nurse coordinator and Medical Registrars)
- MEWS documented on all patient boards
- Multi-professional team training on the escalation policy

Weekly outcome measures from August 2011-December 2012 were:

- Adherence to the escalation policy
- Crash calls
- Reported incidents
- Qualitative staff feedback

**Change effects**

1. Accurate documentation of MEWS within 15mins of arrival improved; 62% pre-intervention versus 89% post-intervention.
2. Adherence to the escalation policy improved; 85% of patients received prompt review by the appropriate doctor (36% pre).
3. Resuscitation data indicated that crash calls increased slightly.
4. There were two SIs pre-intervention and none post-intervention. Five level 1or 2 incidents were reported post-intervention, none pre-intervention.
5. Qualitative information shows an ethos of improved quality of care, built on foundations of better team-working, responsibility and awareness.

**Conclusions**
The results demonstrate a sustained improvement in process measures, engaging appropriate and timely action. Incident reports increased, but appear less serious. We feel this demonstrates an increased awareness of the appropriate steps in care and a culture of accountability. The increase in crash calls represented greater appreciation for prompt escalation of peri-arrest patients. The project has improved the care of unwell patients and a culture of patient safety has been embedded into the working practices of all team members.
# MOTIVATING THE ELDERLY TO INITIATE AND PURSUE EXERCISE

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## Background
Participation in a regular exercise programme improves health and maintains independence in the elderly. As part of a project on whether exercise training reduces mortality and complications following major surgery, we explored the barriers to exercise in elderly patients.

## Sampling Methods
One hundred patients on our abdominal aortic aneurysm surveillance programme, who may need major surgery soon, were sent a questionnaire on physical activity and motivation.

## Results
Ninety-seven patients (97%) (median age 76 range 54-94 years) completed and returned the questionnaire. Forty-four (45%) responders currently exercise regularly; sufficient to increase heart rate, breathe more heavily and to induce sweating, for >30 minutes, three or more times/week.

Only 48 of 97 (50%) patients were prepared to participate in a trial on supervised exercise training at a local facility to improve fitness. This was not associated with current levels of exercise ($X^2=0.67, p=0.41$).

Barriers to exercise included: (i) pain in 32 (33%), (ii) co-morbidities in 33 (34%) and (iii) a belief that exercise would not contribute to well-being in 19 (19%). Thirteen patients (13.9%) cited age as a barrier to exercise even though those taking regular exercise were older (median 78 years). Chronic health conditions such as arthritis (7), peripheral vascular disease (3), cardiac disease (4) including previous MI were thought by 21 patients to prohibit regular exercise; participation was not limited by symptoms but rather by the diagnosis itself.

Motivating factors included advice to exercise from healthcare professionals ($n=7$), supervised exercise ($n=6$) and local facilities ($n=15$).

## Conclusions
Elderly patients mistakenly believe that cardiac, pulmonary or degenerative diagnoses prevent them from exercising.

Older people, regardless of age, need encouragement and information before they will participate in exercise training.
THE LIVERPOOL CARE PATHWAY-AN AUDIT OF ITS USE

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Introduction
There has been adverse publicity surrounding use of the Liverpool Care Pathway (LCP) in hospitals, with many claims that the pathway is being used inappropriately, without the consent of patients or relatives.

In order to assess whether we are using the LCP appropriately at Warwick Hospital, we undertook an audit of medical patients. 30 patients were identified (November 2012 - March 2013) who were receiving end of life care, of which 24 were started on the LCP, ages from 69-104 (average 84 yrs). In all, criteria for using the LCP were met as per LCP guidance.

Method
Most patients had end stage chronic illness such as dementia, COPD and 6 had metastatic cancer. Thirteen patients were nursing home residents. In 18 patients there was clear documentation of discussion with relatives regarding starting the pathway. We also reviewed whether the management adhered to LCP guidance-including prescribing of palliative care medications and ceasing inappropriate interventions. We also looked at reason for admission, how soon patients were started on the LCP after meeting commencement criteria, outcome of patients, whether PEG feeding was discontinued, and whether patients had a do not resuscitate order and any advanced planning in place.

Results
Seven recommendations were made from our audit, including further training of staff on when and how to start LCP. We created a practical check list to help doctors commence the LCP, and created an intranet link to LCP guidance. Our palliative care team published information for patients about advanced care planning and the LCP. We propose that introducing advanced care planning discussion by patients own physicians before end of life is reached, and further palliative support in the community to prevent inappropriate admission, and facilitate early discharge will also greatly improve the management and quality of life of patients who are reaching the end of life stage.
ADVANCE CARE PLANNING FOR CARE HOME RESIDENTS IN HOSPITAL USING PEACE (PROACTIVE ELDERLY ADVANCE CARE): PATIENT PRIORITISATION AND SELECTION, READMISSION AND PLACE OF DEATH

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Background
Advance Care Planning (ACP) using PEACE documentation combines recommendations on clinical management planning with records of mental capacity and resident preferences. Pilot studies identified potential to reduce inappropriate readmissions and to raise community awareness of ACP (Hayes N et al 2011; Kalsi T et al 2011).

Innovation
PEACE is used on our Health and Ageing Unit (HAU) for patients transferred to nursing homes. Patients judged to be on a palliative trajectory are prioritised. This study compared outcomes for patients discharged with or without PEACE. It also sought to refine selection criteria.

Evaluation
From 11.2011 to 02.2012, 24 patients were discharged with PEACE and 39 without (controls). 6 month mortality was 21 (87.5%) for PEACE, vs 10 (25.6%) controls (p<0.01). 19 (90.4%) PEACE patients died in care homes according to their wishes vs 6 (60%) controls (p=0.067) 6 month readmission was 22 (56.4%) for controls vs 4 (16.7%) PEACE.

Of controls, 8 (20.5%) were retrospectively judged by 2 independent reviewers to be on a palliative trajectory. PEACE was not offered to 4 of these, and was refused by 4 patients. 62.5% were readmitted within 6 months.

Conclusions
When PEACE is used for patients judged to be on a palliative trajectory, readmissions are significantly reduced and patients are more likely to die at their nursing home than patients discharged without PEACE. For longer survivors, further development of community ACP is indicated in order to promote end of life care in the right place.

We recommend that all patients discharged to care homes are assessed for palliative trajectory and offered PEACE.

References

INAPPROPRIATE PRESCRIPTION OF LEVOTHYROXINE AND FERROUS SALTS IN THOSE REQUIRING CO-ADMINISTRATION A CROSS-SECTIONAL SURVEY

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Background
Hypothyroidism and iron deficiency are commonly occurring states, particularly in older patients. Co-morbidity of these conditions is frequent. In isolation, timing of iron or levothyroxine replacement is unimportant. However, if given simultaneously, malabsorption of levothyroxine can result (Liwanpo L, Hershman JM, Best Pract Res Clin Endocrinol Metab. 2009;23(6):781-92). This may lead to hypothyroidism on commencement of iron replacement, dose alteration of levothyroxine and potential thyrotoxicosis on cessation of oral iron (Campbell NR et al, Ann Intern Med 1992;117:1010-3, Leger CS, Ooi TC, Endocrinologist 1999;9:493-5). The British National Formulary (BNF) recommends a minimum interval of two hours between levothyroxine and later ferrous salt administration.

Our aim was to assess whether levothyroxine and ferrous salts were prescribed according to BNF recommendation.

Sampling Methods
A cross-sectional survey of medical inpatients was undertaken at a district general hospital to assess whether levothyroxine and ferrous salts were prescribed according to BNF recommendation. An expectation of 100% concordance with BNF recommendation was set.

Results
Data was collected from 291 inpatients, 5.5% of these patients were prescribed levothyroxine and a ferrous preparation. The mean age was 81 (44-101). 1/16 (6.3%) of patients were prescribed levothyroxine and a ferrous preparation with an adequate time gap.

Conclusions
Co-prescription of levothyroxine and ferrous salts was poorly adherent to recommendations creating potential for under-replacement of levothyroxine and clinically significant loss of euthyroid status in some patients. The mean age of patients requiring both drugs was in the geriatric range, a group more likely to suffer morbidity when experiencing a dysthyroid state. Errors at prescription were not corrected on medicines reconciliation. After raising awareness of the clinical problem at a local clinical governance meeting, we have devised an education programme directed at junior pharmacists and doctors in order to increase awareness of this well-established but little-known drug interaction reducing this simple prescription error.
**USE OF SEDATIVES IN THE EXTREME ELDERLY ADMITTED TO THE INTENSIVE CARE UNIT**

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**Background**
The Intensive Care Unit (ICU) can be both a frightening and disorientating experience for patients. In the awake patient, sedative medications are often used to treat agitation and delirium or sleep disturbance. There are at present no widely accepted guidelines on oral sedative use in the ICU. This study assessed how oral sedatives are being used and whether their use resulted in an increased incidence of falls after discharge to the ward.

**Sampling Methods**
We analysed sixteen months (1st January 2011 – 30th April 2012) of admissions data to the ICU of a large teaching hospital in the West Midlands. Patients aged 80 years or older at the time of admission to intensive care were identified using the Intensive Care National & Research Centre (ICNARC) database. Prescribing information and falls data were collected using the hospital's Patient Information & Communication System (PICS).

**Results**
We collected data for 187 patient episodes. Data was analysed according to admission type (Surgical emergency 56, Medical emergency 71, Elective 60). In the study population as a whole, 56/187 (29.9%) received a sedative medication during their ICU stay. The highest sedative burden was seen in the medical emergency group with 31/71 (44%). Benzodiazepines were the most commonly used agents accounting for 44/95 (46.3%) of all sedative prescriptions. Antipsychotic use was also commonplace with 42/95 (44.2%) of patients being prescribed one. In the medical cohort of patients, 17/27 (63%) had their benzodiazepine continued on discharge from ICU. This group had the highest incidence of falls 11/46 (23.9%).

**Conclusion**
This study demonstrates that the use of oral sedative medication in the extreme elderly admitted to ICU is commonplace. Medical patients were more likely to be prescribed these medications and the majority have their benzodiazepine prescription continued on discharge to the ward. This was associated with a higher incidence of falls in the medical emergency group.
CAN WE IMPROVE THE QUALITY OF OUR ADMISSION DOCUMENTATION IN OUR GERIATRIC MEDICINE ASSESSMENT UNIT?

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Evidence Base
Poor quality record keeping by health care professionals has been repeatedly criticised. Indeed, it is often said legally ‘if something is not documented, then it did not happen.’ We aimed to improve our documentation by creating a new admission proforma with prompts to further assessment in key areas in keeping with the standards set by the Royal College of Physicians and NHS Scotland.

Change Strategies
In May 2012 admission documentation was assessed in thirty case notes from a geriatric medicine assessment ward in Gartnavel Hospital. A new proforma was subsequently created based on the first loop of audit and consultation with the senior medical staff. The documentation was re-audited in a further thirty cases during April 2013 using the same data collection tool.

Change Effects
Introduction of the new proforma improved documentation within a number of areas. Medicines reconciliation accuracy improved from 43% to 67%, with prompts improving subsequent senior review of medications from 13% to 70%. Cognitive assessment increased from 73% to 93% with a delirium prompt improving recognition from 40% to 62.5%. Assessment of capacity increased from 23% to 77%, whilst documentation of DNACPR decisions in appropriate patients also rose from 16% to 66%.

Our new document also prompts assessment in other areas including continence and anticoagulation of patients with atrial fibrillation, although these have not been analysed in this audit.

Conclusion
We have demonstrated an improvement in the quality of our record keeping by enhancing the content and structure of our admission proforma. The use of specific prompts has also improved assessment of key areas relevant to the care of older adults.
GERIATRICIAN INPUT INTO 12 CARE HOMES REDUCED EMERGENCY HOSPITAL ADMISSIONS WHICH WAS MAINTAINED WITH EDUCATION & TRAINING OF GPS AND CARE HOME STAFF

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Background
The Nursing Home Project (Lisk et al, poster BGS spring 2011) was started in April 2010 with 3 nursing homes following an audit which showed which showed 1247 admissions from care homes in 2008-09. Due to its success, the project was expanded to 12 nursing homes from April 2011 – Oct 2012.

Innovation
Four interventions were carried out to reduce hospital admissions.

- Monthly Medical Advisory Meetings with GPs by a Consultant Geriatrician.
- Available for telephone advice on a daily basis.
- Medihome – A healthcare company that can provide intravenous antibiotics and fluids in nursing homes.
- End of Life Care discussions with advance care planning

During the period April 2011- Oct 2012, we agreed only 1 GP per care home. This allowed for education and training of the GP and care home staff.

From Oct 2012, the GPs took the lead role in carrying out the above interventions with telephone advice as necessary from geriatricians.

Evaluation
There were 432 admissions from these 12 nursing homes prior to the start of the project (April 2009-March 2010). During the intervention (April 2011-March 2012), admissions were reduced to 282 (35% reduction) with potential savings of £369,750.¹

This reduction has been maintained (April 2012 – March 2013) this financial year as only 303 residents admitted despite the GPs taking the lead from Oct 2012.

Overall trend in rising admissions from care homes were also reversed despite covering only 12 out of 60 care homes.

Conclusion
The results show that geriatrician input into nursing homes had a significant impact on admissions. It is important that initiatives such as this, which focus on partnership working across primary and secondary care interface, are adopted more widely to enable older patients to be treated in the most appropriate environment for their social and medical needs.

1. Non-elective in-patient stays (long stays) £2465 - PSSRU data

Abstract No. 76
A SURVEY INTO TOILET FACILITIES ACCORDING TO NATIONAL AND LOCAL SAFETY STANDARDS IN A DISTRICT GENERAL HOSPITAL

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Background
Falls in hospitals are common, 152,000 occur per year. They account for increased mortality, morbidity, length of stay, rate of placement into 24 hour care and cost. Via our multi-disciplinary falls forum, we noticed that a high proportion of falls take place in toilets and bathrooms. The aim of the survey was to assess toilets in all wards at Trafford General. Standards were devised from Department of Health building standards, alongside local standards devised in collaboration an Occupational Therapist.

Sampling Methods
Data was collected by a team who assessed a sample of in-patient toilets in one day. Four toilets were assessed on each ward, apart from wards where either there were fewer toilets or where it was not possible for clinical reasons.

Results
80% of standards were achieved (410 of 516). The poorest performing standard was the number of frames over toilets, with 95% (41 of 43) failing this standard. There was also a high number of toilets that could not be negotiated in a wheelchair, 28% (12 of 43). Finally 23% (10 of 43) did not have call bells accessible when seated. The remaining results were proportionally spread.

Conclusion
The majority of toilets met our standards. However a significant minority did not, contributing towards the risk of falls. The authors believe that in some instances adaptations could be made that would increase adherence to standards and be cost neutral. For example there were a number of toilets where the call bell cord was very long and thus in itself a falls risk. Therefore to reduce this the cord was effectively deactivated by wrapping it round the side of the toilet. This cord could easily be trimmed thus solving the problem. We have discussed the results at our multi-disciplinary falls forum and intend to make adaptations and re-audit.
Evidence-base
At any one time, a quarter of acute hospital beds are in use by people with dementia. Concerns have repeatedly been expressed about the quality of inpatient care that people with dementia receive. It is recommended that frail older people admitted to general hospitals receive a comprehensive assessment which focuses on their medical and psychological conditions and functional capacity as part of a holistic treatment approach.

Change Strategies
The National Audit of Dementia was established in 2008 to examine the quality of care received by people with dementia in general hospitals in England and Wales. Two rounds of audit took place in 2010 and 2012. Each collected data from 210 hospitals in England and Wales, (99% of Trusts and Health Boards in 2010 and 100% in 2012).

Each hospital was required to audit 40 case notes of patients with a diagnosis or current history of dementia. Information on physical and mental health assessments recorded was collected. Hospitals were asked if they had a care pathway for dementia.

Change Effects

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Round 1 (n=7934)</th>
<th>Round 2 (n=7987)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>87</td>
<td>94</td>
</tr>
<tr>
<td>Pressure sore</td>
<td>87</td>
<td>94</td>
</tr>
<tr>
<td>Nutritional status</td>
<td>70</td>
<td>89</td>
</tr>
<tr>
<td>Patient asked about continence needs</td>
<td>81</td>
<td>87</td>
</tr>
<tr>
<td>Patient asked about any pain</td>
<td>76</td>
<td>87</td>
</tr>
<tr>
<td>Mental status test (standardised test)</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td>Functioning (standardised instrument)</td>
<td>26</td>
<td>44</td>
</tr>
<tr>
<td>All assessments</td>
<td>7</td>
<td>23</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Round 1</th>
<th>Round 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care pathway in place</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>Care pathway under development</td>
<td>44</td>
<td>51</td>
</tr>
</tbody>
</table>

Conclusion
Results overall show improvements in physical health assessments, with room to improve further, particularly in assessment of functioning. Mental health assessment also requires improvement. Fully comprehensive assessment is not yet in place for the majority of people with dementia, and hospital care pathways are yet to be fully implemented in most hospitals.
Background
Management of Older people in Care Homes (CH) requires some basic understanding and knowledge by CH staff. There is no requirement for those working with older people to gain specialist knowledge. Access to such education remains scarce. In Stockport we have been running a care home education project and have experienced at first hand the effects of austerity measures on care homes and its negative influence on our education programme.

Innovation
A structured CH education programme has been running in Stockport since 2008 with the aim to improve knowledge of staff in comprehensive assessment and management of older people. It is organized in liaison with Stockport Social Services and CH managers are encouraged to sign up staff. The course curriculum covers both general and disease-specific modules and assessment of knowledge is under-taken pre and post completion. It is run on a voluntary basis with no funds.

Evaluation
The course has completed its 4th cycle of teaching. Unfortunately sign up to the 2012 course was significantly down due to:

1. Loss of our main contact with Social Services due to redundancy of the Contract and Performance manager resulting from austerity measures by the local Social Services.
2. Austerity measures by CH management resulting in reluctance for filling the gap created by staff coming to attend the course.

We have been able to sustain our CH project for 2013 by:

1. Holding meetings with the local authority and independent sector
2. Reducing the frequency of education sessions
3. Change to a more accessible venue site
4. Greater advertising of our education programme

Conclusion
The negative effects of austerity has resulted in a marked drop in attendance. This is despite the high satisfaction of staff participating in the course. We will continue to review our strategy for delivery of our CH project. Such education programmes need to be made mandatory.
INTERFACE GERIATRICS AND NEW WAYS OF WORKING: AVOIDING ADMISSIONS BY IMPLEMENTING EARLY SPECIALIST ASSESSMENT BY INTERFACE GERIATRICIANS IN THE EMERGENCY DEPARTMENT (ED)

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Background
An initiative to transform health and social care across the Leeds Healthcare Economy has developed in response to recent demographic, political and economic challenges. Two Interface Geriatricians were appointed to perform various innovative roles across the boundaries of primary and secondary care and to improve patient experience by moving care closer to home.

Innovation
Interface Geriatricians provide early Comprehensive Geriatric Assessment (CGA) by consulting in ED for four sessions per week. We aim to reduce unnecessary admissions from the ED by accessing alternative pathways where appropriate e.g. Intermediate Care or early Geriatric outpatient review. Referral criteria include medically stable frail older people experiencing a change in physical or cognitive function and/or complex co-morbidities. Cases are identified by ED clinicians, the Geriatrician, or the Early Discharge Assessment Team (EDAT) – a team of senior nurses and therapists experienced in arranging complex discharges.

Evaluation
During the first year of the service, 534 patients were assessed during 146 sessions

- **58%** of selected patients were discharged from ED – this compares favourably with previous discharge rates from ED for frail older people of 20-33%.
- A further **12%** of patients were suitable for discharge but were admitted due to delays accessing community services or investigations.
- Only **27%** of selected patients needed admission for medical reasons.
- The readmission rate was similar to the departmental rate of **20%**.
- A small reduction in the time waiting to be seen in ED for patients of all ages was demonstrated.

Conclusions
Our innovative, high quality service is avoiding unnecessary admissions with their associated risks and cost. Feedback from ED staff, EDAT and patients regarding our service has been extremely positive. We are developing strong relationships with the ED team and EDAT, extending our influence outside of our allocated sessions and championing the individualised care of frail older people.
INTERFACE GERIATRICS AND NEW WAYS OF WORKING: AVOIDING ADMISSIONS BY PROVIDING RAPID ACCESS TO SPECIALIST ADVICE AND ARRANGING ALTERNATIVES TO ADMISSION

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Background
An initiative to transform health and social care across the Leeds Healthcare Economy has developed in response to recent patient demographic, political and economic challenges. Two Interface Geriatricians were appointed to perform various innovative roles across the boundaries of primary and secondary care and to improve patient experience by moving care closer to home.

Innovation
In Leeds, community staff including General Practitioners (GPs) access admission to hospital via the Primary Care Access Line (PCAL) – a team of senior nurses trained to triage and signpost appropriate patient pathways. One Interface Geriatrician role is working with PCAL to provide rapid access to specialist advice. Alternative pathways such as Intermediate Care, early Geriatric outpatient review or prompting advance care planning, are suggested and arranged.

Evaluation
During the first year of the service, 174 patient discussions took place

- In 19% of patients, an admission was avoided altogether.
- A further 7% of patients were admitted within 30 days, usually for unrelated reasons. This is substantially less than the current departmental readmission rate of 18%.
- 12% of patients were redirected to Intermediate Care, attended hospital for an assessment only or had urgent Geriatric outpatient appointments arranged.
- GP feedback indicates they value the ease of access to a Geriatrician for clinical advice.

Conclusions
Our innovative service is avoiding unnecessary admissions with their associated risks and cost. Patients in whom an admission is avoided are less likely to be admitted later than patients recently discharged from hospital. One limitation is the availability of the Interface Geriatrician to participate in a discussion during other clinical sessions. We believe that ring-fencing Geriatrician time to provide and extend this service may confer larger benefits. We are developing strong relationships with local GPs and the senior PCAL nurses, thereby extending our influence beyond these patients.
'KEEP TAKING THE TABLETS': DOES BRIEF TELEPHONE NURSE-LED INTERVENTION IMPROVE ADHERENCE TO OSTEOPOROSIS THERAPY?

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Background
Poor adherence to oral osteoporosis medication is well recognised. We designed a study to explore the impact of brief, nurse-led, telephone follow-up as a potential aid to adherence to osteoporotic therapies.

Innovation
Patients with osteoporosis were randomised into two cohorts. The 'active management' group received a brief, proforma-based, nurse telephone intervention at three and nine months, exploring adherence; the control group received no such intervention. All patients received a final nurse telephone contact at 12 months to explore adherence to therapy.

Evaluation
A total of 110 patients were randomised. 13 patients were lost to follow-up leaving 96 patients available for analysis (n=50 active; n=46 control).

Initial therapies in the active group were alendronic acid (36), strontium ranelate (7), risedronate (4) and ibandronate (3) whereas in control group Alendronic acid (40), Ibandronate (3) and Risedronate (3).

At 12 months, in the active group, 37/50 (74%) patients continued with therapy vs 33/46 (72%) in the control group. Further analysis of the nature of nurse contact at 3 and 9 months' time points revealed that at the 3 month point, 13 patients were subject of an active nurse intervention (defined as advice on dosing, need to restart previous or commence alternative therapy). 9/13 such interventions resulted in a positive benefit to treatment (assessed at subsequent point of contact). At 9 months, 9 active interventions were suggested leading to positive treatment outcomes in 5/9 cases.

Conclusion
In this study, although brief, nurse-led telephone contact at two points over 12 months failed to directly improve the single outcome of adherence to therapy. However, it was apparent that a significant minority of telephone contacts did produce an active intervention, suggesting that brief interventions of this type might be associated with therapeutic benefits.

Reference
AUDIT OF INPATIENT MRI WAITING TIMES FOR SUSPECTED OCCULT FEMORAL NECK FRACTURE

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2. Department of Health Care of older People, NUH
3. Department of Trauma and Orthopaedics, NUH

Evidence-Base
The timely management of hip fractures is now underpinned by NICE Guidance, June 2011. This includes a statement that magnetic resonance imaging (MRI) should be offered if occult femoral neck fracture is suspected and that MRI should be made available within 24 hours.

We conducted a full cycle audit to: 1) analyse the time taken for inpatient MRI to be performed for occult femoral neck fracture 2) identify remediable reasons for delay 3) develop and implement changes 4) re-audit.

Method
Data was collected from the computerised radiology information system on consecutive patients between 01/04/2010 and 31/03/2012. This data was presented at a number of directorate audit meetings. Following the development and implementation of targeted improvements, a prospective re-audit was carried out from 01/08/2012 to 31/07/2013.

Results
Baseline audit and re-audit results are tabulated below. The remediable causes for delay were 1) duty radiologist not directly contacted by clinician to request urgent scan 2) slow vetting and protocolling of electronic requests 3) resistance to weekend scanning 4) delay in completing MRI safety questionnaire.

After enacting strategies to address these remediable causes of delay, the re-audit showed a 16% improvement in patients scanned within 24hrs. The mean waiting time to get an MRI was 2025.4 minutes (SD 2406.4) for the baseline audit and 1374 minutes (SD 1635.7) for the re-audit. Mean difference 651.4 minutes (95% CI 85.21, 1217.5, p=0.0243).

<table>
<thead>
<tr>
<th></th>
<th>Total number of patients</th>
<th>Scans done within 24 hrs (%)</th>
<th>Scans done within 36 hrs (%)</th>
<th>Average waiting time in hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT (2 yrs data)</td>
<td>167</td>
<td>56</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>RE-AUDIT (12 months data)</td>
<td>87</td>
<td>72</td>
<td>81</td>
<td>23</td>
</tr>
</tbody>
</table>

Conclusion
MRI is a useful and sensitive tool to investigate occult femoral neck fracture (FrihagenF, Acta Orthop2005Aug;76(4):524-30). Inpatient MRI waiting times can significantly be reduced by a targeted approach which embodies improved team working.
THE IMPACT OF SOCIOECONOMIC STATUS ON DEXA ATTENDANCE

S Ahmed, T Ong, O Sahota

Department of Healthcare for Older People

Background
A large proportion of the elderly are affected by osteoporosis and subsequent fragility fractures. We aim to assess the relationship between DEXA (dual-energy x-ray absorptiometry) scan attendance and socioeconomic status (SES).

Sampling
We surveyed attendance of patients over 50 years who were referred for a DEXA scan after sustaining a low trauma fracture over 4 years from 2008 to 2011. Socioeconomic status (SES) was divided into 5 quintiles (1-most deprived; 5-least deprived) based on the English Indices of Multiple Deprivation. Relationship between SES and attendance was tested using Fisher’s exact test between quintile 1 and 5 as they represent both ends of SES.

Results
3851 patients (3081 female, 770 male) were included in our survey. Mean (SD) age was 67(10) years. 11 patients died prior to the scan. Attendance in each quintile is shown in the table below:

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Age Mean, SD</th>
<th>Gender (Female/Male)</th>
<th>Attended</th>
<th>Not attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, most deprived (n=793)</td>
<td>66.3(10)</td>
<td>617/176</td>
<td>595(75.0%)</td>
<td>198(25.0%)</td>
</tr>
<tr>
<td>2 (n=688)</td>
<td>66.8(10)</td>
<td>549/139</td>
<td>544(79.1%)</td>
<td>144(20.9%)</td>
</tr>
<tr>
<td>3 (n=729)</td>
<td>67.3(10)</td>
<td>584/145</td>
<td>572(78.5%)</td>
<td>157(21.5%)</td>
</tr>
<tr>
<td>4 (n=697)</td>
<td>67.6(9.6)</td>
<td>564/133</td>
<td>560(80.3%)</td>
<td>137(19.7%)</td>
</tr>
<tr>
<td>5, least deprived (n=933)</td>
<td>67.2(9.7)</td>
<td>761/172</td>
<td>787(84.4%)</td>
<td>146(15.6%)</td>
</tr>
</tbody>
</table>

There is a relationship between socioeconomic status and attendance at DEXA scans when quintile 1 was compared with quintile 5. Those in quintile 1 were less likely to attend (odds ratio 0.56; 95% CI 0.44-0.7, p<0.0001).

Conclusion
Our cohort of patients with low trauma fractures has shown that those in a more deprived area are less likely to attend DEXA scans. Residents of more deprived areas may have less knowledge on osteoporosis and have health behaviours and lifestyle choices that are risk factors for osteoporosis. Hence, it is important to target this high risk group for further treatment and management.
TILT TABLE TESTING AS A MEANS FOR INVESTIGATING COLLAPSE IN ELDERLY PATIENTS

S R Strickland, M Obaid, P Lawson

Northern General Hospital

Introduction
Older adults may be referred for a tilt table test (TTT) during investigation of recurrent unexplained falls or syncope. The TTT is time consuming and has been considered to have some risk to the patient. NICE Guidelines for Transient Loss of Consciousness advise that referral should be preceded by full history, clinical examination and initial investigations.

We conducted an audit and survey of elderly patients referred for TTT to assess suitability of referrals and determine efficacy, tolerability and outcome of such investigation.

Method
We operate an open access TTT service. 59 patients attended for TTT in 2011. We reviewed 40 patient notes, clinic letters and test results with regards to whether history, examination and appropriate investigations were completed before referral. We evaluated whether this test helped to reach a diagnosis. We contacted some of these patients asking them three questions:

1) How did you find the test to undergo?
2) Did you think the test helped to know what is wrong with you?
3) Was the test worth doing in your opinion?

Results
- Women attending outnumbered men (3:1); the mean age was 78 years (55-92 years).
- 35% of patients were referred inappropriately (not preceded by full workup as recommended by NICE or a diagnosis was reached before referral).
- Following the test 23% of patients were diagnosed with postural hypotension, including 15% who showed evidence of postural hypotension during initial assessment (included in the 35% inappropriate referrals for TTT).
- 33% of patients were diagnosed with vasovagal Syncope.
- In this cohort there were no positive diagnoses of carotid sinus hypersensitivity.
- 39% of tests were negative; 5% were inconclusive because the patients could not complete the test.
- Of the patients contacted 30% found the test difficult to undergo, 40% felt it helped with diagnosis and 60% found the test was worth doing.

Conclusion
Tilt Table Testing is a useful tool to reach a diagnosis after recurrent unexplained fall or syncope if requested appropriately. Despite being time consuming and costing a lot of effort to the elderly patient in carefully selected cases it is found to be worth doing for both clinicians and patients.

References
**COLLABORATION BETWEEN GERIATRICIANS AND MENTAL HEALTH TRUST TO AID THE EARLY DIAGNOSIS OF DEMENTIA**

S Bhatti, J Settle, A Kumar

1. Department of Care of the Elderly, Wrightington, Wigan and Leigh NHS Trust
2. Advanced Nurse practitioner-5 Boroughs NHS Foundation Trust
3. Department of Care of the Elderly, Wrightington, Wigan and Leigh NHS Trust

**Background**

Diagnosis of dementia is often delayed due to a combination of late patient recognition, delayed referrals from GPs and lack of timely access to memory services resulting in the known ‘diagnostic gap’ of approximately 50% between actual GP registers and predicted prevalence, locally (Mapping the dementia gap 2012 - Alzheimer’s society)

**Innovation**

A joint clinic run by a geriatrician and an advanced nurse practitioner (ANP, Mental health) was piloted, January to June 2012. Patients identified to have memory issues, by colleagues in the hospital (inpatients/clinics) and the GPs, were referred, and received:

1. Comprehensive cognitive assessment and depression screening by ANP, after being consented;
2. Comprehensive geriatric assessment by a geriatrician to address the medical comorbidities, as well as investigations to rule out/aid the diagnosis of early dementia;
3. Referral to Later Life and Memory service (LLAMS) for early intervention, after findings being discussed with the patients and conveyed to the GPs.

**Evaluation**

Out of 65 new patients seen in 19 clinics, 33 (50.7%) showed cognitive impairment and were referred to LLAMS. 16 (24.6%) of these were confirmed to have dementia diagnosis and 10 (15.3%) planned for further investigations and follow up. 3 did not attend, 2 passed away and 2 were diagnosed with other intracranial pathologies.

**Conclusion**

The early diagnosis of dementia through a joint collaboration as above can reduce the ‘diagnostic gap’ and help initiate early medical intervention, plan future care and potentially reduce the escalation to acute settings, and long-term costs. The feedback obtained from patients/carers was 100% positive. Following the success of the pilot, the clinic was commissioned and has carried on since.
TIMED UP AND GO TEST RESULTS IN PATIENTS FOUND THROUGH GENERAL PRACTICE FALLS RISK SCREENING. PRELIMINARY EVALUATION OF THE NORTH TYNESIDE FALLS PREVENTION SERVICE (NTFPS)

S W Parry, P Early, S Gray, D Green, N Lawson, H Trundle, V Strassheim, A F Jaafar, E Vardy, J Lawson

North Tyneside Falls Prevention Service, Albion Road, North Shields Institute for Ageing and Health, Newcastle University and Falls and Syncope Service, Newcastle Hospitals NHS Foundation Trust Age UK North Tyneside

Introduction
Falls are a major health and health economic burden but case ascertainment remains inadequate. The NTFPS was developed to proactively screen for falls risk factors in primary care. We present data from the Service’s strength and balance training classes run with Age UK North-Tyneside.

Methods
General practice case notes of those >60 years are screened for falls risk factors and syncope. Patients excluded if known to existing services. Screening questionnaire sent and those at risk invited to attend comprehensive multidisciplinary assessment per NICE guidelines.

All given advice on exercise and falls prevention and supplied with relevant literature. Where significant gait and balance problems identified per senior physiotherapy musculoskeletal and falls assessment (including Timed-up and Go Test[TUG], Short Physical Performance Battery), patients may receive:

- Targeted home exercises, leaflets
- Referral to associated Age UK strength and balance classes depending on mobility, ability, TUG (>13.5 sec high risk of falling)
- Community physiotherapy, day hospital referral
- Suggestions for referral for orthopaedic review

Strength and balance training classes:
Ten x weekly, 1 hour sessions of targeted, individualised exercises in small group setting (up to 10 participants) delivered by personal trainer.

We report on the first consecutive 187 individuals to complete the strength and balance training programme.

Results
Total 187 Mean age 76.6 years (range 60-89), 129(69%) female TUG results as below:

<table>
<thead>
<tr>
<th></th>
<th>Baseline TUG</th>
<th>Mid point TUG (5 weeks)</th>
<th>Final TUG(10 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean (sec)</td>
<td>15.33</td>
<td>11.46</td>
<td>11.43</td>
</tr>
<tr>
<td>SD</td>
<td>6.27</td>
<td>4.53</td>
<td>4.59</td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>Baseline v mid</td>
<td>Baseline v Final</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=0.0072</td>
<td>p&lt;0.000001</td>
</tr>
</tbody>
</table>

Conclusion
This novel approach identifies patients with significant gait and balance abnormalities otherwise not coming to the attention of services. Appropriate triage and referral results in highly significant reductions in TUG results, with concomitant benefits in terms of falls risk reduction. Longer follow up data are needed to examine the longevity of these benefits.
SCREENING FOR FALLS AND SYNCOPE RISK FACTORS IN PRIMARY CARE IS CLINICALLY EFFECTIVE: PRELIMINARY EVALUATION OF THE NORTH TYNESIDE FALLS PREVENTION SERVICE (NTFPS)

S W Parry¹, D Green¹, N Lawson¹, H Trundle², V Strassheim¹, A Jaafar¹, E Vardy¹, P Early¹, S Gray¹, J Lawson¹

¹. North Tyneside Falls Prevention Service, Albion Road, North Shields Institute for Ageing and Health, 2. Newcastle University and Falls and Syncope Service, Newcastle Hospitals NHS Foundation Trust Age UK North Tyneside

Background
Falls are a major health and health economic burden but case ascertainment remains inadequate. The NTFPS was developed to proactively screen for falls risk factors in primary care. We present data from the Service’s first 3 years operation.

Innovation
General practice case notes are screened for falls risk factors and syncope for those >60 years and one of:

- >4 medications (antihypertensives/ antianginals/ psychoactives)
- Fragility fractures
- Recurrent falls (≥2 per NICE guidance⁶)
- Blackouts (any in last year, ≥2 in last 2 years)

Excluded if known to existing services. Screening questionnaire then sent to clarify risks and invited to attend for comprehensive multidisciplinary assessment per NICE guidelines.

Evaluation
Total 3308 (28/09/09-13/01/13); Mean age 75.9 years (range 60-100); 2018 (61%) female; 853 (25.8%) referred to associated Age UK strength and balance training classes

Clinical findings and outcomes not previously known to GP:

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred for Dexa following FRAX tool</td>
<td>411</td>
<td>12.4</td>
</tr>
<tr>
<td>New cognitive impairment (MMSE&lt;24)</td>
<td>145</td>
<td>4.4</td>
</tr>
<tr>
<td>Benign positional paroxysmal vertigo</td>
<td>113</td>
<td>3.4</td>
</tr>
<tr>
<td>New atrial fibrillation</td>
<td>53</td>
<td>1.6</td>
</tr>
<tr>
<td>Orthostatic hypotension</td>
<td>129</td>
<td>3.9</td>
</tr>
<tr>
<td>Absolute indication pacemaker</td>
<td>17</td>
<td>0.5</td>
</tr>
<tr>
<td>Long QTC</td>
<td>13</td>
<td>0.4</td>
</tr>
<tr>
<td>Vasovagal syncope</td>
<td>116</td>
<td>3.5</td>
</tr>
<tr>
<td>New depression (15 item GDS&gt;10)</td>
<td>117</td>
<td>3.5</td>
</tr>
<tr>
<td>Reduced visual acuity/ review lenses</td>
<td>90</td>
<td>2.8</td>
</tr>
<tr>
<td>New murmur</td>
<td>96</td>
<td>2.9</td>
</tr>
<tr>
<td>High risk FRAX, treat osteoporosis</td>
<td>90</td>
<td>2.7</td>
</tr>
<tr>
<td>Low BP, culprit meds</td>
<td>50</td>
<td>1.5</td>
</tr>
<tr>
<td>Asymptomatic bradycardia, culprit meds to reduce</td>
<td>62</td>
<td>1.9</td>
</tr>
<tr>
<td>Syncope requiring investigations</td>
<td>57</td>
<td>1.7</td>
</tr>
<tr>
<td>New neurological signs requiring referral</td>
<td>35</td>
<td>1.1</td>
</tr>
<tr>
<td>Orthopaedic referral suggested- unstable knees/ surgical intervention</td>
<td>88</td>
<td>2.7</td>
</tr>
<tr>
<td>Orthotist - leg length, foot drop and foot indications</td>
<td>44</td>
<td>1.3</td>
</tr>
<tr>
<td>Other</td>
<td>273</td>
<td>8.3</td>
</tr>
<tr>
<td>No intervention required by GP</td>
<td>1264</td>
<td>38.2</td>
</tr>
<tr>
<td>Total significant new diagnoses</td>
<td>1999</td>
<td>60.4</td>
</tr>
</tbody>
</table>

Conclusion
This novel approach pays huge dividends for falls and syncope prevention and bone health. Further work is needed to clarify those at most risk to ensure appropriate resource targeting.
REFERRALS FOR INDEPENDENT MEDICAL CAPACITY ADVOCATES: EXPLORATORY SURVEY FOR APPROPRIATE AUDIT

S V Hope, J E Sword

Department of Healthcare for Older People, Royal Devon & Exeter Hospital

Background
The Mental Capacity Act (2005) states an Independent Medical Capacity Advocate (IMCA) should be arranged for any unbefriended adult who lacks capacity and is in need of serious medical treatment, is in need of a change in accommodation or who has been in hospital for 28 days.

Concern had been raised from the Safeguarding Team at the local county council about low referral rates compared to government estimates.

We wanted to establish whether we were failing to refer people who meet IMCA referral criteria, and how we could efficiently audit this on a hospital-wide scale.

Sampling methods
Two geriatricians systematically reviewed hospital notes from all discharges over a two-week period in September 2011 (one surgical ward, two medical). We identified from the notes whether patients had a diagnosis of dementia/delirium during that admission, which may have caused them to lack capacity. For those who did, documented next of kin/friend details were sought.

Full hospital coding for these admissions was reviewed, to establish its potential for identifying all patients with dementia/delirium. Our designated “gold-standard” was the two-doctor agreement on dementia/delirium being present during that admission.

Results
92 sets of notes were obtained. 11/92 (12%) patients were considered to have had dementia/delirium. All 11 (100%) had a clearly documented next of kin/friend.

Regarding coding, 0/92 patients were considered to have been inappropriately coded as having dementia/delirium. Only 6/11 (55%) were correctly identified as having dementia/delirium on coding.

Conclusions
Systematic notes review is a preferable method for auditing whether IMCA referrals are made when appropriate, as 45% patients with dementia/delirium were missed on coding. Further education on dementia, delirium recognition and importance of documentation is being given to medical and coding staff, and mandatory fields in discharge summaries introduced. IMCA referrals and coding accuracy will be re-reviewed.

Abstract No. 89
A PILOT STUDY OF PATIENTS EXPERIENCES OF HIP FRACTURES

T Jennison, K Porter, P Rankin

University Hospital Birmingham

Introduction
Hip fractures cause significant morbidity and mortality in the elderly population. There are over 75,000 per year in the UK. Despite this, there has been little research on patients’ views and experiences of hip fractures. This was highlighted as an area where further research was required in the NICE guidelines for hip fractures. The aim of this study was to assess patients’ experiences of their hip fractures and hip fracture management.

Sampling Methods
An interview script was created based on recommendations made in the NICE guidance. Approval was gained from the local patient experience team. A 30 minute semi-structured interview was undertaken by a single interviewer who was not involved in the patients care.

Results
15 patients were interviewed with an average age of 81.7 (range 70-94). 13 females and 2 males participated. When asked about their feelings about injuring their hip, most felt resentment and blamed themselves for the injury. When asked if they would make a full recovery, 10 out of 15 thought they would. Only 5 of 15 thought their living circumstances would change. 8 out of 15 thought they would need additional help after discharge and the majority had negative thoughts about this. Returning home and regaining independence were the most important factors highlighted by all those questioned. When asked about the advice they would give to other people who suffered a hip fracture, most made comments such as ‘listen to the advice given’, ‘just get on with it’ and ‘stay positive’.

Conclusion
Hip fractures are a major event for an elderly person. Patients do not generally understand the effects that it may have on their life. Returning to their pre-fracture level of mobility and living circumstances following a hip fracture were most important to those interviewed.
DEPRIVATION OF LIBERTY SAFEGUARDS: TREATING VULNERABLE PATIENTS

T Chowdhury, J Muscat, U Garbharran
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Evidence-Base
Deprivation of Liberty Safeguards (DOLS) addresses processes by which best interest decisions are made for vulnerable patients. DOLS forms part of the Mental Capacity Act but has not been given much prominence despite its clinical and ethical relevance. This audit evaluated local understanding, recognition and reporting processes of DOLS in a DGH. A quantitative survey was performed using a paper-based questionnaire targeted at all healthcare professionals. During the initial audit (n=59), on-the-job DOLS teaching was available. The initial survey revealed 29% (n=17) of healthcare professionals recognised the need for a DOLS and only 31% (n=18) described the correct reporting process.

Change-Strategies
The initial stage of the audit illustrated the need for more robust interventions than education alone. In collaboration with the Trust’s Safeguarding team, an algorithm (DOLS Action-Bundle) was formulated focusing on local deficiencies in knowledge and clinical practice, and made widely available. In addition, focused training sessions were planned. Due to time constraints, these sessions were preferentially offered to doctors.

Change-Effects
Post implementation of interventions, a further survey (n=59) was conducted. Descriptive analysis revealed improvement in recognition of vulnerable patients (71%, n=42) requiring DOLS across all healthcare professional groups. Similarly, 56% of staff (n=33) correctly identified the reporting process. Sub-group analysis revealed a statistically significant improvement in both these domains amongst doctors (p<0.05) which is particularly relevant as this was the group targeted during focused education sessions.

Conclusion
There is a paucity of knowledge regarding DOLS. Education alone is ineffective in making the required changes. Interventions incorporating focused education, development of DOLS Action-bundle and collaborative working with a safeguarding agency have impacted significantly on recognition and reporting of DOLS amongst doctors. Future plans include extension of focused education across all healthcare professional groups and identification of ward DOLS champions with a repeat audit to assess impact of changes.
INTerventions TO PREVENT falls IN an INPATIENT hospital SETTING

T McDonnell¹, A Kerr²

¹. Bristol University Medical School
². Department of Elderly Care, Royal United Hospital, Bath

Background
Falls in hospital are extremely common and responsible for the greatest number of patient safety incidences reported to the NPSA (2004/2005: 60% of all reported incidents). The average cost-per-trust is £92,000 annually with additional physical and psychological stresses to the patient, coupled with the relative paucity of information surrounding falls in a hospital setting. We believed it of great importance to highlight areas of practice that are failing recurrent fallers and to identify effective intervention to prevent (not manage) falls.

Search method
Retrospective notes review of 10 randomly chosen recurrent fallers identified from incident forms. Objective measures (Number of comorbidities; identification of risk; fall care plan completion) in addition to identification of recurrent themes for falling where effective intervention could be targeted.

Results
Average age of patients was 85 [72-98] with average length of stay of 51.5 days (18-75). Average number of falls per patient was 7.6 (2-15), 90% patients had presented to hospital with a fall and 100% had >3 comorbidities (60% with dementia), yet despite this 40% were not highlighted as at risk of falling during their initial assessment. The leading theme for recurrent falls was a lack of observation: seldom were falls witnessed and understaffing on wards filled with high risk patients resulted in constant vigilance being an unachievable objective. An over emphasis was placed on the use of such preventative measures as call-bells that do not translate to patients with cognitive impairment.

Conclusions
All elderly patients admitted to hospital should be assumed to be at risk of falling and fall care plans should be completed. To improve observation we propose the creation of dementia specific wards with specifically trained staff and a bespoke layout. Individual nursing stations placed within each bay would improve patient observation, preventing more patients dangerously mobilising.
Withdrawn
AN AUDIT OF NEW SEDATIVE PRESCRIBING IN ADULT INPATIENTS OVER 75 YEARS OLD AT NEWHAM UNIVERSITY HOSPITAL

Z Bhatia, A Ellis, J Pickles

Newham University Hospital

Evidence Base
Elderly people have increased sensitivity to side effects from sedation, thus increasing the risk of falls and fractures.

The latest National Institute for Clinical Excellence (NICE) guidance for management of delirium no longer advocates a role for benzodiazepines as first line pharmacological treatment.

There are guidelines regarding different aspects of sedative prescription in various clinical contexts e.g. Alzheimer’s Disease (AD), Lewy Body Dementia (DLB); but no guideline that combines these into a single protocol.

Change Strategies
476 sets of patient notes and drug charts were analysed using a proforma. Data was collected across all wards at Newham university hospital (NUH) (excluding paediatrics, intensive care and maternity). This was conducted on 2 days in May 2012 and 2 days in December 2013. We compared prescribing practise with the latest British Geriatrics Society (2006) and NICE (2010) guidelines.

Intervention consisted of departmental meeting presentations and development of a local protocol. This incorporated prescribing in delirium on a background of AD and DLB.

Change Effects
2012 data:

32/476 (14%) patients were prescribed a new sedative. 22/32 (69%) had documented delirium, 12/32 (38%) dementia (some in addition to delirium) and 2/32 (6%) alcohol excess.

23/32 (72%) had a medication review and 30/32 (94%) a documented reason for sedation.

A variety of medications were used. 9/32 (28%) prescriptions were for end of life agitation, 10/32 (31%) were for delirium and 13/32 (41%) for insomnia. 4/32 (13%) prescriptions were inappropriate (trazadone, quetiapine, diazepam and temazepam).

2013 data:

New sedative prescription fell to 15 (6%) with improvements in documentation, medication reviews and documented side effects.

Conclusions
This audit shows low levels of sedative prescribing in the >75yrs. The majority of prescribing is appropriate.

The implementation of a Bart’s Health trust-wide new clinical guideline should increase compliance further.
VASCULAR RISK IN PATIENTS PRESENTING WITH TRANSIENT ISCHAEMIC ATTACK (TIA)

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2. Brighton and Sussex University Hospitals Trust, Brighton

Introduction
Transient Ischaemic Attacks (TIA) carry a significant risk of subsequent TIA and stroke. Identifying high risk patients who are likely to sustain another event is crucial. Arterial stiffness is an independent predictor of cardiovascular events including stroke, however its ability to predict TIA is yet to be investigated. Central aortic pressure is emerging as a predictor of cardiovascular events rather than peripheral blood pressure (BP). This study investigated the prevalence of arterial stiffness and BP characteristics in a population who have suffered a TIA.

Methods
Twenty-four participants with a mean age of 70 years (SD±10.1) and a confirmed diagnosis of TIA were recruited from Brighton and Sussex University Hospitals (BSUH) Trust. Carotid-femoral pulse wave velocity (C-F PWV) and carotid-radial pulse wave velocity (C-R PWV) were measured using Complior®. These were compared with published normal values.¹,² Aortic central BP and brachial BP were measured using Arteriograph®. Twenty-four hour ambulatory BP monitoring (ABPM) was recorded using Diasys®.

Results
Mean PWVs were: C-F 11.5 ±3.18 m/s, C-R 10.8 ±1.26 m/s. C-F and C-R PWVs of TIA participants were higher than measurements in the published normal values (C-F 10.9 m/s, C-R 10.1 m/s). Central aortic BP was higher than peripheral BP (mean difference= 2 mmHg), compared to the normally expected drop of 10-15 mmHg. Thirty-eight per cent of TIA participants on 24-hour ABPM lacked nocturnal dipping compared to 19% healthy subjects (p=n/s).

Conclusions
In the cohort studied, those who suffered a TIA had a tendency towards an increase in central aortic arterial stiffness and central BP and were more likely to lack nocturnal BP dipping compared to healthy subjects.

References
CACHEXIA IN HOSPITALISED OLDER WOMEN: A GERIATRIC GIANT?

D Baylis\textsuperscript{1,2}, H Syddall\textsuperscript{1}, K Jameson\textsuperscript{1}, C Cooper\textsuperscript{1}, H Roberts\textsuperscript{1,2}, A A Sayer\textsuperscript{1,2}

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\item 1. MRC Lifecourse Epidemiology Unit, University of Southampton
\item 2. Academic Geriatric Medicine, University of Southampton
\end{itemize}

\textbf{Introduction}
Cachexia is an inflammatory syndrome associated with severe weight loss. It increases with age and the prevalence in the general population is around 1\% but it has been little studied in older adults despite the well documented associations of weight loss and inflammation with poor outcomes. This study hypothesised that cachexia is common in hospitalised older women and associated with worse outcomes.

\textbf{Methods}
Data was collected on female patients upon admission to an acute medicine for older people ward. Cachexia was characterised according to the consensus definition: more than 5\% weight loss in the preceding 12 months plus three of: fatigue, anorexia, low grip strength, low fat free mass and biochemical evidence of inflammation. Pre-cachexia was defined by having all of: less than 5\% weight loss in preceding 6 months, chronic disease, anorexia and inflammation. Participants were followed up in the community at 6 months where cachexia was re-characterised and at 2 years where mortality data was collected.

\textbf{Results}
148 older women were recruited to the study. Average age at baseline was 86 years and the prevalence of pre-cachexia and cachexia was 5\% and 27\% respectively and 8\% and 34\% at follow up. Cachexia at baseline was associated with an increased likelihood of hospital acquired complication (odds ratio 3.2, p=0.07) and also increased mortality at two years (hazard ratio 2.6, p=0.002); these data remained significant after adjustment for age, smoking, alcohol and functional status and co-morbidity.

\textbf{Discussion}
Cachexia is highly prevalent in older women admitted to hospital. It is associated with worse clinical outcomes in an already frail population both during receipt of hospital care and after discharge home. There needs to be greater recognition of cachexia in this vulnerable group.
PHYSICAL FUNCTIONING AND ALL-CAUSE MORTALITY IN FRAIL COMMUNITY DWELLING OLDER WOMEN

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Introduction
Frailty is a state of increased vulnerability; its prevalence amongst people over 85 years may be as high as 26% but individuals classified as frail differ considerably in terms of their function and clinical outcomes. An important healthcare challenge is to better discriminate between frail people who are expected to do less well to facilitate targeted intervention and prognostication. This study aimed to investigate the utility of physical performance testing in frail older people and ascertain relationships with all-cause mortality.

Methods
103 older women were followed up at home after original recruitment to the study during an acute hospital admission six months previously. Demographic information was collected and Fried frailty status was defined as three of: weight loss, weakness, exhaustion, slowness, low activity (2 = pre-frail). Physical performance was assessed using timed-up-and-go (TUG), gait speed, one-legged stand and chair rises. Mortality data was ascertained over the subsequent 18 months.

Results
Average age was 87 years; 70% were frail and 17% were pre-frail. 19% of participants attempted all four physical performance tests; 25% were unable to attempt any. Only TUG predicted mortality over 18 months (hazard ratio per second faster, 0.99; age-adjusted p-value, 0.06); there were no associations with other functional assessments or frailty status. A physical performance score was generated according to the number of assessments attempted (0–4); this was the biggest predictor of long-term mortality (hazard ratio per point gained, 0.25; age-adjusted p-value, 0.008).

Conclusions
Frailty was highly prevalent in community dwelling older women six months after discharge from hospital and was not a predictor of mortality in the next 18 months. Physical performance assessments were difficult for the study participants to complete. The simple physical performance score assessed ability and willingness to complete physical performance tests and was a powerful predictor of mortality.
IS GRIP STRENGTH ASSOCIATED WITH LUNG FUNCTION IN OLDER HOSPITALISED PATIENTS?

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Introduction
Age-related airway compliance changes contribute to the declining ratio of forced expiratory volume in 1 second (FEV₁) to forced vital capacity (FVC) with ageing. This leads to increased airflow obstruction during forced expiration. Consequently, many older people meet the spirometric criteria for obstructive airways disease despite no other evidence. Older people may be unable to generate and sustain sufficient expiratory pressure to reach and hold maximum flow as lung volume falls. This study used grip strength (GS) to reflect expiratory muscle strength (EMS) in investigating the relationship between EMS and lung function (LF).

Methods
Patients on acute Medicine for Older People wards were recruited who met the inclusion criteria: age above 70 years; never smoked; no history, symptoms or signs of respiratory disease; Mini Mental State Examination (MMSE) ≥24; willing and able to consent to participate; able to perform hand grip and forced spirometry. Outcome measure was LF (FEV₁, FVC, FEV₁/FVC, peak expiratory flow rate (PEFR) and slow vital capacity (SVC)), covariates were GS, age, weight, height. Unadjusted and adjusted (for age, height, weight) linear regressions were used for analysis.

Results
50 patients (male=20, female=30) were recruited. Significant relationships were found in men between GS and FEV₁ (unadjusted β=0.032, 95%CI=(0.001,0.063), p=0.047) although attenuated after adjustment; in men between GS and PEFR (unadjusted β=6.881, 95%CI=1.537,12.226, p=0.013); (adjusted β=6.938, 95%CI=1.268,12.607, p=0.018), and in women between GS and SVC (unadjusted β=0.052, 95%CI=0.006,0.099, p=0.028); (adjusted β=0.050, 95%CI=0.0005,0.100, p=0.048). No other significant relationship was found.

Conclusions
The relationship of GS with PEFR and SVC in women might reflect stronger patients generating higher intra-thoracic pressure at the start of spirometry and pushing harder against thoracic cage recoil at end-expiration. No significant relationship was found with FEV₁/FVC and GS in this small study. Further research is needed to evaluate the relationship between LF and GS.
DOES A LACK OF PHYSICIAN AWARENESS UNDERLIE THE FRAGILITY FRACTURE PREVENTION CARE GAP?

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Introduction
National guidelines for the prevention of osteoporotic fractures (OPFs) have recently been updated with clinical risk assessment algorithms such as the WHO fracture risk assessment tool (FRAX). However, national audit evidence suggests suboptimal rates of risk assessment and under-utilisation of anti-osteoporotic agents (AOPs) for at risk patients (Royal College of Physicians 2010). We set out to investigate whether this care gap persists and hypothesise that a lack of physician awareness underlies it.

Methods
Males≥75 and females≥65 years on geriatric wards of a UK district general hospital were selected for study (n=37). Data on osteoporosis risk factors (RFs) collected from patient interview and records were evaluated with FRAX to estimate the 10 year risk of OPF. Risk stratification was according to National Osteoporosis Guideline Group (NOGG) guidelines.

Physicians ranging from FY1 to consultant grade (n=24) were randomly selected for assessment of their awareness concerning developments in OPF prevention. A hypothetical case of an at risk patient was presented and participants asked whether, 1. They would commence an AOP, and 2. They are aware of FRAX.

Results
Of patients not on an AOP (n=22/37; 59.5%), in total half were in the high (n=7/22; 31.2%; mean FRAX=37.7%) and medium (n=4/22; 18.2%; mean FRAX=25.5%) risk categories, mandating treatment and evaluation of bone mineral density respectively.

Whilst 45.8% of physicians interviewed (n=11/24) had heard of FRAX, only 1/24 suggested using it to guide management in this case.

Conclusions
Despite recently published guidelines, a significant number of patients at risk of OPF are missing screening opportunities, suggesting a need for routine assessment which we are currently trialling. The finding that a majority of hospital doctors are unaware of the use of FRAX in risk assessment suggests an underlying cause for the identified care gap and a need for greater focus on educational interventions.

Abstract No. 99
IDENTIFICATION AND QUANTIFICATION OF SATELLITE CELLS IN SKELETAL MUSCLE FROM COMMUNITY DWELLING OLDER MEN: FINDINGS FROM THE HERTFORDSHIRE SARCOPENIA SUDY (HSS)

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Introduction
Sarcopenia, defined by the European Working Group on Sarcopenia in Older People (EWGSOP) is the loss of muscle mass and function with age. Sarcopenia has a multifactorial aetiology, which includes reduced number and/or function of satellite cells (SC). These cells are central to the growth and repair of skeletal muscle. Previously, SC have been identified by electron microscopy and immunofluorescence techniques. Few studies have demonstrated the ability to identify SC by immunohistochemical techniques in fixed human tissue. The objective of this study was to develop a methodology and determine the feasibility of identifying and quantifying SC.

Methods
99 men born between 1931 and 1939 (mean age 72) consented for detailed characterisation of muscle mass and strength as well as a muscle biopsy of the vastus lateralis. Tissue was processed for immunohistochemical studies. Sections of muscle were stained with paired box protein transcription factor 7 (PAX-7) antibody. Photomicroscopy and image analysis were used to calculate muscle tissue area, satellite cell number and fibre number per section after which values for SC per mm² muscle (SC density), SC per fibre and fibres per mm² muscle were derived.

Results
Due to incomplete tissue fixation, muscle sections were available for 75 participants. The median SC count was 2, interquartile range (IQR 1.5-3.2). The median satellite cell density was 4 cells per mm² muscle (IQR 2.1-6.0). There were 0.04 SC per fibre (IQR 0.02-0.07). fibre. The median fibre count was 198 (IQR 120-321), median fibre density was 99 fibres/mm² (IQR 65.2-119.3).

Conclusion
Identifying and quantifying SC by immunohistochemistry in human tissue is feasible. The next steps are to apply the EWGSOP algorithm to the HSS sample to determine the relationship between SC and sarcopenia. The methodological findings of this study can now be applied to future studies that also include women.
Introduction
Gait velocity (Gvel) is predictive of survival in adults, reflective of health and functional status and assists treatment planning for clinicians (Studenski et al, 2011 JAMA). Gvel has been shown to improve during short inpatient episodes (Braden et al 2012 JGPT) however research designs often exclude patients with cognitive impairment (CI). Our aims were to determine whether Gvel measurement is feasible in patients with CI admitted acutely to an OPU and to identify differences in GVel between patients with and without CI.

Method
We retrospectively reviewed the records of patients (n=103) admitted to our 84 bedded unit between July and August 2012. Specifically we captured episode cognitive status, length of stay (LOS) and 6m GVel (admission and discharge). Cut-offs of cognitive measures enabled division of our sample into those with and without CI.

Results
Complete data was captured for 63 (61%) patients (Table 1). 49,(78%) patients were interpreted to be experiencing CI. Clinicians reported no meaningful time difference or adverse incidents when measuring Gvel in cognitively impaired individuals. There were no significant differences between groups in Gvel performances or change, nor in age, LOS or acuity (Table 2). Mean Gvel increased significantly within groups between admission and discharge (Table 3) although of doubtful clinical meaning (<0.1m.sec⁻¹). Mean Gvel at discharge remained consistently slow (≤0.4m.sec⁻¹).

Conclusions
It was feasible to measure GVel using existing protocols with CI patients. Our patients are discharged with velocities slower than 0.6m.sec⁻¹ which is considered abnormally slow and is associated with declines in functional independence. This has implications for rehabilitation in the community. Literature suggests a meaningful change in GVel of 0.1m.sec⁻¹, which was not achieved in either group. However velocity improvements were higher in the non-impaired group. This might have implications for more tailored physical therapy for patients with CI and warrants further study.
ASSOCIATION BETWEEN BISPHOSPHONATE THERAPY AND REHABILITATION OUTCOMES IN OLDER PEOPLE

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Introduction
Bisphosphonate therapy may have biological effects beyond bone health, including effects on cardiovascular, immune and muscle function. We examined the association between bisphosphonate use and functional outcomes in the rehabilitation of older people.

Methods
This was a retrospective cohort analysis of routine data collected from the Dundee Medicine for the Elderly Service between 1999 and 2011. Data on admission and discharge 20-point Barthel score was combined with comorbid disease, biochemistry, haematology and community prescribing data. The cohort was split into four groups: current bisphosphonate users, previous users (prescribed prior to admission); subsequent users (prescribed only after admission); and never users. Difference in Barthel between admission and discharge was analysed, adjusting for baseline Barthel score, age, sex, comorbid disease, medication burden, recent hip fracture, baseline albumin, calcium, renal function and haemoglobin.

Results
2797 patients were included in this analysis. Mean age was 84.1 (SD 7.5); 1153 (41%) were male, and the mean baseline admission Barthel score was 10.5 (SD 3.8). After adjustment for the above covariates, current bisphosphonate therapy was associated with a greater improvement in Barthel score (5.0 points, 95% CI 4.3 to 5.7) compared to the never users (3.8 points, 95% CI 3.6 to 3.9, p<0.001) and previous users (3.4 points, 95% CI 2.8 to 4.0, p<0.001) groups. However, there was no difference from those not taking bisphosphonates, but who started use after discharge from rehabilitation (5.1 points, 95% CI 4.6 to 5.5, p=0.82).

Conclusion
Bisphosphonate therapy is not causally associated with improved functional outcomes from inpatient rehabilitation.
THE IMPACT OF LOW PERSISTENCE WITH OSTEOPOROSIS MEDICATION

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Introduction
Osteoporotic fractures are estimated to cost the NHS £2.3 billion annually. We aim to assess the financial impact of low persistence with bisphosphonate therapy and fracture burden in an arbitrary population.

Methods
We projected data based on fracture numbers and cost using a predictive costing tool which is the intellectual property of GlaxoSmithKline/Amgen. The tool uses current epidemiological and research data. GSK and Amgen were not involved in the preparation of this poster. The financial cost of fractures was calculated using Healthcare Resource Group tariff.

Results
Within an arbitrary population of 300,000, which is similar to the size of a city such as Nottingham, we estimate that 55,559 are post menopausal women. 17,984 are at risk of fractures. The estimated numbers of wrist, hip and vertebrae fractures are 323, 219 and 235 respectively. The healthcare cost of fractures accounts to over £3.4million. Of women who sustain a hip fracture, 8.6% will require care within a nursing home with an additional cost of £476,537. Percentage of patients persisting with oral alendronate, risedronate and strontium are 45%, 46% and 27% respectively at one year. The cost of fractures secondary to non-persistence is £330,110 with an additional cost to nursing homes of £46,415 at one year and at 3 years will rise to over £1.5million.

Conclusions
Non-persistence with bisphosphonate therapy is multi-factorial and is associated with significant health and financial burden. Implementing methods to improve medication taking habits, such as patient education programmes along with focus on parenteral therapies will improve clinical and financial outcomes.
PRESENTATION OF ALTERNATIVE NUTRITIONAL SUPPLEMENTS: CAN WE IMPROVE INTAKE IN HIP FRACTURE PATIENTS?

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Background
Poor nutritional intake is well-recognised in hip fracture patients. Supplements are often prescribed but compliance is variable. To test whether we could improve intake, we conducted a prospective study comparing the consumption of supplement presented in three different forms but of the same calorific value (300kcal): (1) fortisip compact; (2) fortisip compact blancmange; (3) cake.

Method
For each patient, over a three week period, we weighed the daily fortisip compact before and after consumption to determine how much had been taken. This was used as the study reference. For the same ward over another three week study period, we replaced fortisip compact with fortisip compact blancmange and weighed the containers in the same way. Finally for the subsequent three week period, all ward patients received a portion of cake and consumption was calculated by its remaining weight. Comparisons were then made between the three forms of supplement.

Evaluation
Fortisip compact: 172 episodes from 43 patients. 37% had AMTS < 7. 36% needed assistance with eating. Mean consumption was 38.6% (116kcal).

Fortisip compact blancmange: 164 episodes from 31 patients. 54% had AMTS < 7, 52% needed assistance. Mean consumption was 27.5% (83kcal).

Cake: 174 episodes from 30 patients. 44% had AMTS < 7, 33% needed assistance. Mean consumption was 48.2% (145kcal).

Patients consumed significantly less blancmange than fortisip (p<0.01) and significantly more cake than fortisip (p<0.01).

Conclusion
Mean consumption of fortisip compact, a commonly prescribed supplement, was low. We were able to significantly improve consumption by presenting the supplement in a more palatable form as cake. Whilst there are cost implications (cake costs 60p, fortisip 1p), a range of supplements should be offered to patients in order to improve compliance with supplements and improve nutritional status.
# ARE FRACTURES AND A DIAGNOSIS OF OSTEOPOROSIS IN THE ELDERLY RELATED TO SOCIAL DEPRIVATION

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## Introduction

Elderly patients are more likely to develop fractures and osteoporosis. Social deprivation is linked to certain health conditions and worse health outcomes. However, its relationship with bone health in the elderly is less certain. The aim of this study is to examine the relationship between socioeconomic status (SES), fractures and osteoporosis.

## Methods

The English Indices of Multiple Deprivation (IMD) was used as an index of SES. Postcode residence of patients that presented to the Fracture Clinic, Queen Medical Centre, Nottingham from 1/1/2008 - 31/12/2011 was used to obtain the IMD. Patients were divided into 5 socioeconomic quintiles from the most deprived to the least deprived. The mechanism of fracture and fracture types were collected from the orthopaedic notes and bone density (BMD) directly from the individuals BMD scan.

## Results

6362 patients (1346 male, 5016 female) with a mean (SD) age of 69(12) years were included in the study. Mean (SD) number in each quintile was 1272(162) patients. SES did not influence the incidence of all fractures and fracture types by site (wrist, foot, upper arm, ankle and elbow). 3064(48.2%) patients had a BMD scan. Using a logistic regression model with socioeconomic quintile as a categorical variable, there was no significant difference between the most deprived and the least deprived people in terms of the risk of having osteoporosis. However, in people younger than 65 years, those in the least deprived were less likely to develop osteoporosis compared to the most deprived (odds ratio 0.66, 95% CI 0.45-0.98, p=0.04).

## Conclusions

Social deprivation appears to be a risk factor for osteoporosis in those under 65 years. It is likely that in the elderly, social deprivation will have a lesser effect compared to other accumulated osteoporotic risk factors. Public health resource should be used to identify osteoporosis in those less than 65 years living in more deprived areas.
**THE RELATIONSHIP BETWEEN BODY MASS INDEX (BMI) AND FRACTURES IN THE ELDERLY**

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**Introduction**

A low trauma osteoporotic fracture is defined as a fracture following a fall from standing height or less. This study examines the complex relationship between low trauma fractures and high BMI.

**Methods**

Patients with a low trauma fracture 50 years and over presenting to the Nottingham Fracture Liaison service between 1/1/2007-31/10/2012 were evaluated. Baseline demographics, fracture sites, BMI and bone density (BMD) were collected. BMI was defined as obese ≥30kg/m²; overweight 25-29.9kg/m²; normal 18.5-24.9kg/m²; and underweight <18.5kg/m². Osteoporosis is defined as a BMD T-score of -2.5 or less.

**Results**

4288 patients were evaluated. 30% (1285) were obese. Prevalence of osteoporosis was 13.4%, 24.9%, and 40.4% in the obese, overweight and normal category respectively. Being obese has an odds ratio of 0.23 (95% CI 0.19-0.28, p<0.001) of having osteoporosis compared to a normal BMI category. When variable BMI cut offs were used (BMI 25, 30 and 35) to calculate the positive predictive value of patients not having osteoporosis, it was 80.5%, 86.3% and 88.3%. Examining fracture types, obese patients when compared with the non-obese category, were more likely to fracture their ankle (relative risk 1.39, p<0.001) and upper arm (relative risk 1.38, p<0.001); but is less likely to fracture their wrist (relative risk 0.79, p<0.001). In the elderly (>70 years), obesity no longer influenced ankle or wrist fractures but there is an increased risk of upper arm fractures (relative risk 2.08, p=0.005).

**Discussion**

The relationship between obesity and BMD is not affected by age, but fracture type is influenced by BMI and age. Higher BMD in obesity is not protective against fractures as there are a significant number of fractures in this group which may be due to body habitus, mechanism of injury and the effect of adiposity on bone. A low trauma osteoporotic fracture will need to be redefined in light of these findings.
IS NEUROCARDIOVASCULAR INSTABILITY ASSOCIATED WITH IMPAIRED OBJECTIVE VISUAL FUNCTION?

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Introduction
Hypertension causes end organ damage however there is increasing evidence that variability and instability in blood pressure may be significant also in terms of vascular risk (PM Rothwell Curr Hypertens Rep 2011 Jun; 13(3): 177-8). Hence we hypothesize there may be a relationship between neurocardiovascular instability (NCVI) as identified on active stand (AS) and deterioration of objective visual function.

Methods
Data from the first wave (2009/2011) of The Irish Longitudinal Study on Ageing (TILDA) was used. Of 8,175 participants, 5255 underwent a comprehensive health assessment in which objective visual and cardiovascular measures, including finometry data from AS were collated. Best available corrected visual acuity was assessed separately in both eyes by means of a Logmar chart and contrast sensitivity was measured using the functional acuity contrast test. Vision (better eye) was categorized using ICD 10 criteria into “normal” “mild” and “moderate-profound” vision loss. For individual demographics, mean contrast sensitivity (CS) values were determined across 5 spatial frequencies. This was also done for those whom had a >= 20mmHg drop or overshoot from baseline blood pressure at each 10 second (s) timepoint of AS.

Results
Of 5255 participants 76.75% (4033) had normal vision, 21.24% (1116) had mild visual loss and 2.01% (106) had moderate to profound visual loss. In univariate analysis, mild and moderate-profound vision loss were associated with older age, female gender, lower educational attainment, smoking, self-report of eye diseases, diabetes and hypertension (all p<0.05). Mean CS values were lower for these demographics across all spatial frequencies. At each 10s timepoint across the AS, those who had a > 20mmHg drop in blood pressure had lower mean CS across all spatial frequencies.

Conclusions
This preliminary analysis, in identifying lower mean CS for our chosen NCVI variable is supportive of our hypothesis and identifies confounding factors, which will be controlled for in the final model designed to answer the research question.
SYMPTOMS BUT NOT VASODEPRESSION DURING ACTIVE STAND ASSOCIATE WITH FALLING

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Introduction
Orthostatic hypotension (OH) is common and associated with falls among older people. It is defined as a 20mmHg SBP or 10mmHg DBP drop on active stand. OH is often associated with presyncope and syncope however many people are asymptomatic despite drops in BP consistent with the diagnosis.

Aim
To examine if symptoms or vasodepression during active stand are associated with falling in the last 12 months.

Methods
269 community-dwelling people age >65 years underwent active stand. Participant’s rested supine for 10 minutes before standing quickly for 3 minutes. BP was recorded using beat to beat monitoring; systolic (or diastolic) vasodepression was defined as the difference between the mean systolic BP over the 20 heart beats before standing minus the BP nadir during standing. Detailed fall history and clinical examination including cognitive function were recorded. Those with MMSE<26 were excluded from the analysis (n=27). Logistic regression assessed if symptoms or vasodepression associated with falling.

Results
Sixty-nine subjects reported falling in the previous 12. Fallers were more likely to have a history of hypertension, had poorer scores on Tinetti gate and balance assessment and were more likely to be symptomatic during the active stand. No significant difference occurred in proportion of participants with OH between the two groups and no difference in degree of systolic or diastolic vasodepression between the groups.

Logistic regression showed symptoms during active stand but not systolic vasodepression associated with falling [OR 3.02 (95%CI 1.57, 5.82)] and [OR 1.01 (95% CI 0.99, 1.02)] respectively. Similarly, with diastolic vasodepression; symptoms but not BP drop were associated with falling [OR 3.22 (95% CI 1.67, 6.23)] and [OR 0.98 (95% 0.95, 1.01)]. These findings remained consistent after adjusting for age and sex, and risk factors for falling.

Conclusion
Symptoms during active stand strongly associates with falling rather than vasodepression.
IS CARDIAC RESYNCHRONISATION THERAPY (CRT) FEASIBLE, SAFE AND BENEFICIAL IN OCTOGENARIANS?

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Purpose
Chronic heart failure (CHF) predominantly affects the elderly. In the UK the mean age of patients hospitalised with CHF is 78 yrs. Despite proven benefit of CRT, the mean age of UK patients undergoing CRT-P is 71 yrs. We evaluated whether CRT is feasible/safe and associated with improved symptoms in octogenarians.

Methods
Consecutive patients undergoing CRT implantation at 2 UK centres (2009-11). Patients grouped according to age: <80 & ≥80 yrs. Baseline demographics, complications and outcomes were compared between groups.

Results
439 patients were evaluated of whom 26% were aged ≥80 yrs. See table. Octogenarians more often received CRT-P. Upgrade from pacemaker was common in both groups (16% <80yrs vs 22%, p=ns). Major co-morbidities were similarly common in both groups (diabetes 25%, AF 49%, hypertension 45%). More patients age ≥80 yrs had significant chronic kidney disease (CKD, eGFR<45 ml/min/1.73m2, 44% vs 22%, p<0.01). Overall complication rates (any) were similar in both groups (17% ≥80 yrs vs 21%, p=ns). Both groups demonstrated significant symptomatic benefit. One year mortality rates were almost 4 fold greater in the very elderly (13.9% vs 3.7%, p<0.01).

Conclusions
CRT appears to be safe in octogenarians despite extensive co-morbidity, and in particular frequent severe CKD. Symptomatic improvement is meaningful and similar to a younger population (mean age 14 yrs lower). Mortality at 1 year was higher in those aged ≥80 yrs. Strategies to increase the appropriate identification of elderly patients with CHF for CRT are required.

Demographics and outcomes for patients.

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**PREDICTORS OF ALL-CAUSE MORTALITY IN ELDERLY PATIENTS WITH STAGES 3-4 CHRONIC KIDNEY DISEASE**

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**Introduction**

Hypertension is one of the principal modifiable risk factors in the management of chronic kidney disease. Clinic blood pressure (BP) readings have traditionally been used for assessment. We set out to determine if non-traditional haemodynamic parameters such as aortic stiffness and central blood pressure (CBP) have an increased predictive power of all-cause mortality compared to clinic BP readings and 24 hour ambulatory blood pressure (ABPM) measurements.

**Methods**

Two-hundred patients (mean age 68.8 ± 11.5 years) with stages 3 to 4 CKD were recruited in a prospective study of haemodynamic parameters and outcome. Baseline measurements were clinic BP, 24 hour ABPM (Diasys® Novocor, UK), CBP (Sphygmacor® AtCor, Australia) and aortic stiffness, measured by carotid-femoral pulse wave velocity (Complior® Artech, France). However not all patients had a complete set of all measurements. A nocturnal drop in systolic BP of <10% on 24 hour ABPM identified ‘non-dipper’ patients. Patients were followed up until the end points of death or dialysis.

**Results**

Forty-six patients died during follow up (median follow up 67.8 months, 95% CI 62.8-72.7) and 35 required dialysis. Sixteen of the later subsequently died. Aortic stiffness, CBP and the mean systolic ABPM BP and ‘non-dipping’ were shown to be significant predictors of all-cause mortality in univariate analysis (P <0.001, P <0.03, P<0.05, P <0.05 respectively) . In Cox regression analysis adjusted for traditional vascular risk factors and severity of renal failure; aortic stiffness, mean systolic 24 hour ABPM BP and ‘non-dipping’ remained significant predictors of mortality. Cox-model derived relative risk [95%CI] 1.41 [1.01-1.98], 1.03 [1.01- 1.05] and 2.62 [1.20-5.75] respectively.

**Conclusions**

In this study of elderly patients with CKD stages 3 to 4 we showed that increased aortic stiffness, average systolic readings on 24 hour ABPM and ‘non-dipping’ on 24 hour ABPM were potentially significant predictors of all-cause mortality.
CLINICAL CHARACTERISTICS OF PATIENTS WITH POSITIVE VERSUS NEGATIVE ADENOSINE TESTS IN UNEXPLAINED SYNCOPE

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Introduction
Adenosine testing has been used in the diagnosis of neurally-mediated and unexplained syncope. A positive test is adenosine induced asystole for ≥6 s or AV block ≥10 s. No prior studies have examined adenosine testing early in the syncope journey or presented data on negative adenosine tests. The appropriateness of pacing those with a positive test remains uncertain.

Methods
Adenosine testing to DEtermine the need for Pacing Therapy with the additional use of an implantable loop recorder (ADEPT-ILR) is a randomised double blind placebo controlled trial of permanent pacing following a positive adenosine test. Those with a negative test undergo ILR insertion. Patients are >40 years presenting to acute medical services with unexplained syncope (no diagnosis following history, examination, 12 lead ECG and postural BP). The pacemaker is switched “on” or “off” for 6 months and then switched to the other mode for another 6 months. Those with an ILR are followed for 12 months.

Results
36 adenosine tests have been conducted. There have been 24 positive (67%) and 12 (33%) negative tests. Those with a positive test are older and have a longer QTc calculated by automated report (p<0.05; see table).

Conclusion
Adenosine testing has never been studied in this population. Two thirds of adenosine tests in unexplained syncope are positive. Those with positive adenosine tests are older and have a longer QTc.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>63 ± 12</td>
<td>56 ± 8</td>
</tr>
<tr>
<td>Female (%)</td>
<td>15 (62.5%)</td>
<td>5 (42%)</td>
</tr>
<tr>
<td>Syncopal episodes last 12 months</td>
<td>2 (IQ range 2-4)</td>
<td>3 (IQ range 2-10)</td>
</tr>
<tr>
<td>PR interval (ms)</td>
<td>169 ± 26</td>
<td>162 ± 28</td>
</tr>
<tr>
<td>QTc (ms)</td>
<td>430 ± 22</td>
<td>396 ± 38</td>
</tr>
<tr>
<td>QRS duration (ms)</td>
<td>91 ± 14</td>
<td>91 ± 9</td>
</tr>
</tbody>
</table>

Abstract No. 111
A CASE CONTROL STUDY OF CARDIOVASCULAR ASPECTS OF FALLS IN URBAN OLDER POPULATION IN MALAYSIA

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Introduction
Fall is a ‘syndrome’ associated with a differential diagnosis or ‘a consequence’ from multiple synergistic factors. Cardiovascular risk factors such as orthostatic hypotension and carotid sinus hypersensitivity associated with falls.

Methods
This cross-sectional case-control study was conducted within 10-month. Cases participants aged ≥65 years old with > 2 falls or one injurious fall in the past within 12 months. Control participants were recruited from community dwelling older, similar hospital catchment area. Patients were evaluated with a multifactorial falls assessment including history taking, 12-lead ECG, lying and standing blood pressure (BP) continuous BP monitoring (Portapres\textsuperscript{®}, FMS, Amsterdam). Fallers randomized to intervention or control participants following the initial evaluation. The intervention group was referred for further cardiovascular evaluation. This included Holter monitoring, transthoracic echocardiography, carotid sinus massage and head-up tilt-table tests.

Results
Seventy-six cases and 50 control participants were recruited to the study. There were significant baseline differences in age and history of diabetes, cardiovascular diseases and hyperthyroidism between the two groups. There was a significant increase in systolic drop (mean (standard deviation, SD)=35(21) vs 25 (19)mmHg, p=0.032) and diastolic drop (15(13) vs 9(8)mmHg, p=0.025). The diagnosis of orthostatic hypotension (OH) (odds ratio, OR (95% confidence interval, 2.68 CI= 1.00-7.19), p=0.046 was significantly different between fallers and non-fallers. These differences remained statistically significant after adjustment for age and past medical illness of diabetes and cerebrovascular disease (systolic BP drop, p=0.041; diastolic BP drop, p=0.013; OH (adjusted OR (95%CI)= 5.42(1.55-18.93), p=0.008). The PR interval was significantly prolonged (187(30) vs 160(32)msec, p=<0.001) and bifascicular block was also more likely in fallers compared to non-fallers (9(12%)vs 0; p=0.046).

Conclusions
Orthostatic hypotension is independent risk factor for falls. PR prolongation and bifascicular block associated with falls. Cardiac and blood pressure assessments are therefore important in the multifaceted assessment of falls.

Abstract No. 112
METABOLIC SYNDROME AND COGNITIVE FUNCTION IN SINGAPORE-A PILOT STUDY USING THE CAMBRIDGE NEUROPSYCHOLOGICAL TEST AUTOMATED BATTERY (CANTAB)

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Aim of study
There are many previous studies reporting an association between metabolic syndrome (MetS) and impaired global cognition. Chronic diseases like hypertension, diabetes mellitus, obesity, dyslipidaemia and hypertriglyceridemia have been found to play a considerable role in preclinical dementia symptoms and dementia. However, evidence to support this relationship is still limited. This study investigates the relationship between MetS and cognition, and the influence of ethnicity.

Methods
Participants aged 55 years and above who met the MetS criteria (n=53) and controls (n=44) were identified from an on-going study conducted at the National University Health System (NUHS). Exclusion criteria include formal diagnosis of dementia or cognitive impairment, on-going radiotherapy or chemotherapy, depression, wheelchair or bedbound and visual or hearing impairment. Cognitive function was assessed using the Cambridge Neuropsychological Test Automated Battery (CANTAB).

Results
97 participants were enrolled in the study. Amongst them, 56.7% (n=55) were male, 78.4% (n=76) were Chinese, 5.2% (n=5) were Malay, 13.4% (n=13) were Indian and 3.1% (n=3) were Mixed. The average age of the study participants was 64.96 years (SD= 7.23) and mean education level was 10.37 (SD=3.89) years. Independent samples t-tests and chi-square tests revealed no significant effects of age (p=.324, ns), education level (p=.904, ns) and gender (p=.665, ns) between the MetS and the control group. Findings from ANOVA showed MetS participants consistently performed poorly in all CANTAB tests. The regression analyses also revealed protective factors such as education level and Chinese origins.

Conclusion
Our findings indicate the presence of multiple cognitive domain impairments in individuals with MetS as compared to healthy controls, and further support earlier published studies and meta-analysis. Participants with MetS demonstrated overall decline in memory, visuospatial abilities and executive functioning. This study is the first local study that demonstrates a positive relationship between MetS and multiple cognitive domains (i.e. memory, executive functioning and attentional flexibility) and Asians may be particularly vulnerable to the detrimental impacts of MetS.
## Updating the British Geriatrics Society Recommended Undergraduate Curriculum Against Tomorrow's Doctor's 3

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2. Division of Rehabilitation and Ageing, School of Community Health Sciences, University of Nottingham

### Introduction

In 2007, we conducted an expert content validation meeting involving bio- and social gerontologists and geriatricians to develop the British Geriatrics Society's Recommended Undergraduate Curriculum. We mapped the document to the GMC Tomorrow's Doctors guidance. Since then, a new version of Tomorrow's Doctors has been published (TD3). We set out to update the BGS curriculum by mapping it to TD3.

### Methods

Each section of TD3 was reviewed independently by 3 reviewers to identify outcomes pertinent to older people. Disagreements were resolved by consensus. The finally convened list of outcomes was tabulated against rationales for why they were relevant to older people. These were then mapped to outcomes in the existing BGS curriculum. The results of this process were sent to the national Education and Training Committee of the BGS for consultation and modifications incorporated into a new draft curriculum.

### Results

48 outcomes relevant to older people were identified in TD3. Most GMC curricular topics mapped to the BGS curriculum. However, GMC outcomes 12a-d, which describe research, did not have corresponding learning outcomes in the BGS curriculum. At the consultation exercise, some rewording of the previously written outcome around Comprehensive Geriatric Assessment and incorporation of a new outcome about research in older people were suggested.

### Conclusions

On the basis of these findings, a new draft curriculum has been produced which we present at this meeting for discussion and dissemination.
ELDER ABUSE RECOGNITION AMONG ACUTE GENERAL MEDICINE DOCTORS IN OXFORD UNIVERSITY TRUST

C von Stempel, S Thompson

Oxford University

Background
Elder Abuse is common. A quarter of vulnerable elderly people are at risk of abuse whilst only a small percentage are investigated. It was suggested that insufficient awareness and knowledge among medical doctors is a contributing factor. In order to assess this, we conducted a short survey about the knowledge on abuse of older people, on 30 randomly chosen doctors of various stages in their career (consultants, registrars, Senior House Officers and House Officers).

Results
43% of the interviewed doctors have suspected elder abuse in their practice and free text analysis suggests doctors have suspected each of the following subtypes of abuse, in order of decreasing frequency: Neglect, Physical, Financial and Emotional abuse. When asked for barriers to reporting elder abuse less than 50% of doctors responded and free text evaluation revealed a lack of understanding of both when and how to report suspected abuse. 30% of doctors knew of assessment tools for elder abuse. 80% of all doctors would advocate the assessment for potential abuse to be part of the routine assessment of elderly patients.

Conclusions
A high proportion of doctors in acute general medicine have suspected elder abuse at some point, but the majority of them admitted not to know how to act on suspicions. Also, the majority of interviewed doctors would like that older patients are assessed routinely for the abuse.

Literature

Abstract No. 115
TEACHING COMPREHENSIVE GERIATRIC ASSESSMENT TO MEDICAL STUDENTS VIA MODIFIED PROBLEM BASED LEARNING - A PILOT PROJECT IN NORTHAMPTON GENERAL HOSPITAL

R K Mappilakkandy, S Krauze, I Khan

Department of Medical Education, Northampton General Hospital

Introduction
Comprehensive Geriatric Assessment (CGA) is an important tool for assessing complex elderly patients. Teaching medical students on CGA over a short period is challenging. The medical education department of the Northampton General Hospital undertook a pilot CGA project over 5 seven week blocks, based on modified problem based learning (PBL), for 30 University of Leicester final year medical students of the elderly care block.

Methods
The project was done in three phases. There were five blocks of six students each. Phase 1 was a lecture on prior knowledge and assessment of CGA, the tools involved and a problem was presented. Phase 2 involved the intensive phase of literature review based on the problem, attending ward rounds, multidisciplinary team meetings, outpatient geriatric clinics and group discussions with assessment and feedback. Phase 3 involved powerpoint presentation of the problem and the patient journey with assessment and feedback from both peers and the tutor. A pre and post PBL questionnaire survey about CGA was done on a rating scale of 1 -5.

Results
29 self assessment questionnaires and feedback forms were analysed and results obtained based on the average rating. Rating skills for doing a CGA improved from an average of 1.8/5 to 3.4/5. 100% of the students wanted to learn more about geriatric medicine. Learning objectives of understanding and performing CGA were met in 100%. 76% recommend PBL as a learning tool to the University. After the PBL sessions 40% were very likely to pursue Geriatrics as a career.

Conclusion
Medical students found learning CGA via a modified PBL approach to be an effective method. Understanding and assessing complex elderly patients via CGA is vital to the training of medical students and modified PBL, though time consuming, provides a more hands on and mature approach to understanding this complex process.
BESPOKE SIMULATION TRAINING FOR SPECIALIST TRAINEES IN GERIATRIC MEDICINE

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2. The Simulation and Interactive Learning Centre, Guy’s and St Thomas’ NHS Foundation Trust, London

Background
Specialist trainees in Geriatrics need to manage complex scenarios in a range of settings. Simulation provides an education platform for clinicians to become immersed in realistic scenarios where outcome is dependent upon technical and non-technical skills.

Methods
27 trainees attended 4 similar one-day courses focussed on curriculum-mapped clinical scenarios using high-fidelity life-size manikins, patient-actors, patient actors with integrated clinical skills, and role-play exercises. Trainees participated in scenarios individually or in small groups whilst others watched live audio-visual transmission remotely. Debriefs by trained faculty were completed after each scenario. Participants completed validated pre-and post-course questionnaires to assess confidence in managing clinical scenarios (on a linear 0-100 scale) and to evaluate the course’s educational value.

Results
Trainees’ confidence in clinical and non-clinical skills was improved, as shown in the table.

<table>
<thead>
<tr>
<th>Area</th>
<th>Mean (SD) pre-course confidence score</th>
<th>Mean (SD) post-course confidence score</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entering new clinical situations</td>
<td>72 (19)</td>
<td>80 (14)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Leadership</td>
<td>70 (20)</td>
<td>80 (13)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Emergency management</td>
<td>67 (19)</td>
<td>78 (13)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Continence management</td>
<td>56 (23)</td>
<td>74 (13)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Multi-disciplinary meetings</td>
<td>67 (19)</td>
<td>78 (14)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Communication</td>
<td>74 (19)</td>
<td>81 (14)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Managing agitated patients</td>
<td>65 (20)</td>
<td>79 (13)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>End-of-life decisions</td>
<td>67 (18)</td>
<td>78 (14)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>End-of-life communication</td>
<td>68 (14)</td>
<td>78 (19)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Deploying non-technical skills</td>
<td>65 (19)</td>
<td>79 (12)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Median scores on a 1-5 Likert scale showed trainees to evaluate the course as educational (4), interesting (5), relevant (5) and useful for reflection (4). Median overall satisfaction score was 5. The most common constructs learned were clinical knowledge, situational awareness and communication skills; all of which were judged not to have been taught as effectively by other learning media.

Conclusions
A specialist Geriatrics simulation training programme is feasible and perceived to address areas of the curriculum successfully and to improve clinical and non-clinical skills.

Abstract No. 117
AGEING TRAJECTORIES IN DIFFERENT BODY SYSTEMS SHARE COMMON ENVIRONMENTAL AETIOLOGY

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Background
Little is known about the extent to which ageing trajectories of different body systems share common causes. We present a large longitudinal twin study investigating the trajectories of change in 5 systems: respiratory, cardiovascular, skeletal, body composition, and metabolic.

Methods
Longitudinal clinical data was collected on 4487 twins in the TwinUK registry (mean follow-up 10.3±2.6 yrs, range 4-7.5 years). Trajectories of change in 5 organ systems were generated using mixed effects models. Multivariate structural equation modelling was used to estimate the contribution of genes and environment to variance in each trajectory and the correlation of these factors between different body systems.

Results
Ageing trajectories had remarkably low heritabilities, ranging from 8% in respiratory ageing to 22% in metabolic ageing. However, we found significant effect of environmental factors shared between twins (which includes family environment, early socio-economic status), explaining the variation in ageing in cardiac (48%), skeletal (33%) body composition (53%) and metabolic systems (32%). The remainder was due to environmental factors unique to each person. There were significant and substantial correlations between the unique environmental latent factors between all organ systems ranging from 0.11 between metabolic and skeletal systems to 0.57 in skeletal and cardiac systems. Significant correlations were also found between shared (family) environmental factors.

Discussion
This study, the first of its kind in ageing, found that diverse organ systems shared common aetiology, which is not genetic. There is an important contribution of family environmental factors to ageing in diverse systems, which may, in part reflect the lifespan hypothesis of ageing. Importantly as ‘unique environment’ also includes measurement error, it is often overlooked. This study shows there to be significant correlation between unique environmental aetiology of different systems ageing, unlikely to be due to error because multiple data-points contribute to each trajectory. Epigenetic modifications may account for this.
THE ROCKWOOD FRAILTY INDEX IN TWINSUK

C J Steves¹, S Patel¹, S H D Jackson², T D Spector¹

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2. Clinical Age Research Unit, Clinical Gerontology, Kings College Hospital NHS Foundation Trust, London

**Background**
Frailty is a multi-dimensional concept, conferring reduced resistance to stressors because of depleted physiological reserve. The Rockwood Frailty Index (RFI) is a proportion of health deficits (symptoms, signs, functional impairments or laboratory abnormalities), associated with increased risk of adverse health states. We created an RFI using a well phenotyped twin cohort at average age 59 (range 40-85). We investigated the heritability of this baseline RFI, and its relationship to attrition and death in the cohort over the subsequent 4 years.

**Methods**
RFI was calculated using 39 domains of potential health deficit in 3376 female twins. Structural equation modelling was used to estimate the relative contributions of genetics, shared and unique environment to variance in frailty (square-root transformed RFI). After 4 years, death records and withdrawal from the registry were analysed with respect to frailty level.

**Results**
In this young ageing cohort, 45% (95% CI 30-53%) of the inter-individual variation in RFI was attributable to additive genetic effects, while shared environment was non-significant (3%) and unique environmental contribution 52% (95% CI 47-57%). To date, 24 unrelated twin singleons have died. Within these pairs, the RFI was significantly higher in the deceased twins, both statistically and clinically (0.16 alive, versus 0.23 deceased, paired T test one-sided p=0.02). 60 twins have withdrawn from the registry for diverse reasons. They had significantly higher RFI than those remaining in the study at 4 years (mean 0.20 vs 0.13, p=<0.0001).

**Conclusion**
This study estimates heritability of frailty to be surprisingly high (45%), compared to longevity, for example, with a heritability of 25%. Importantly, the RFI was significantly related to death in twin pairs, despite shared genes, early life, age and cohort. Attrition was also associated with frailty, suggesting that the RFI could be used to correct for this in longitudinal studies.
Withdrawn
CHARACTERISTICS AND SURVIVAL IN OLDEST OLD NURSING HOME RESIDENTS ADMITTED TO HOSPITAL WITH AN ACUTE ILLNESS COMPARED TO THEIR YOUNGER COUNTERPARTS

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⁷. AGEING (Aberdeen Gerontological & Epidemiological INterdisciplinary Research Group), Epidemiology Group, Institute of Applied Health Sciences, School of Medicine & Dentistry, University of Aberdeen, Aberdeen, AB25 2ZD, Scotland, UK

Introduction
The clinical problems and needs of our oldest olds (>=85yrs) are often substantially different from those of younger patients, including younger elderly patients (age 65-84 years). Identifying differences in prognostic indicators and outcomes between oldest old and younger nursing home (NH) residents may inform appropriate clinical decision making

Methods
We retrospectively analysed data from consecutive admissions from NHs to an Acute Medical Assessment Unit between January 2005 and December 2007. Admission prognostic indicators and in-patient mortality, length of hospital stay and patient survival outcomes until March 2009 were compared between younger (<85) and older (>=85) groups using multiple regression methods.

Results
316 patients (mean 84.3, SD 8.34 years) were included (68% females). Admission characteristics were similar between age groups. Significantly more male patients in the oldest old group died in hospital compared to those in the younger category (OR 2.92; 1.05-8.12). For those who died during admission the younger group had almost double the average length of stay compared to their older counterparts. Hazards (HR) of dying in oldest olds after the admission and after discharge compared to the younger group were 1.43(1.09-1.89) and 1.37(1.05-1.81), respectively. Mortality at thirty, sixty and ninety days remains exceptionally high; 32% of <85 and 38% of >=85 year olds admitted from NHs were deceased at thirty days post admission. At ninety days, 50% of oldest olds and 42% of <85s had died. Out of all NH admissions to hospital, 41 patients <85 years (26%) were readmitted in comparison to only 26 (16%) among the oldest old (p=0.05).

Conclusion
Whilst the admission characteristics are similar between younger and older patients from NHs, there is evidence to suggest worse long-term survival prospects for oldest old patients. Further studies should focus on development and testing of management strategies to provide longer term appropriate care in this patient population.
THE FRAILTY INDEX IN EUROPEANS: ASSOCIATION WITH DETERMINANTS OF HEALTH

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Introduction
The Frailty Index (FI) summarises differences in health status within individuals, and the determinants of health drive that variability. Factors such as genetics, education, socio-economic status and lifestyle all have considerable impacts on health, especially in countries where, at a population level, the impact of factors such as sanitation and access to health and social care has been minimised due to advances in Public Health and Social Policies. The aim of the present study was to investigate the influence of education, income, smoking, alcohol intake, and parental longevity on the FI variability in Europeans.

Methods
Analyses were based on a 40-item FI previously validated on the first wave of the Survey of Health, Ageing and Retirement in Europe (SHARE, http://www.share-project.org/), including 29,905 participants aged ≥ 50 from 12 European countries. For each sex, the sample was divided into age categories (50s, 60s, 70s, 80s and ≥ 90) and FI quartiles within age categories were calculated. Multivariate ordinal regressions were computed to assess the relative contribution of the health determinants on the FI quartiles in each age group.

Results
In women, the most significant multivariate predictors of FI quartile membership were years of education (Odds Ratios [ORs] around 0.9), and difficulties making ends meet (ORs between 1.8 and 2.1). In men, the most significant multivariate predictors were years of education (ORs around 0.9), difficulties making ends meet (ORs between 1.6 and 2.1), mother’s age of death (OR under 1), and father’s age of death (ORs under 1).

Discussion
Consistently with the literature, education and income explained, in both sexes, cross-sectional variability in FI in subjects of the same chronological age group. The influence of parental longevity seemed to be greater in men, which mirrors previous studies showing that genetic factors may have a higher impact on longevity in men.
DELIRIUM AND ACUTE STROKE: THE INCIDENCE, SEVERITY AND DURATION OF DELIRIUM AND LONG TERM OUTCOMES FOR PATIENTS POST STROKE AND DELIRIUM

S Ahmed, J D Holmes, J B Young

School of Medicine, University of Leeds

Introduction
Delirium is an acute generalised impairment of brain function and a common complication of illness in older people. It affects 5 to 15% of patients in general wards, however it is commonly overlooked or misdiagnosed in clinical practice. Previous studies have found that delirium is linked to longer hospital stays, an increased need for institutionalisation and future complications e.g. increased risk of dementia and mortality. Delirium onset may be associated with an acute stroke.

The aims of this study were to:

1. Identify the incidence, severity and duration of delirium in acute stroke.
2. Compare mortality rates in stroke patients with and without delirium.
3. Compare long term outcomes for patients with and without delirium.
4. Investigate if the type of stroke determines the onset of delirium.
5. Identify possible confounding variables that may protect against the onset/ decrease the duration of delirium in stroke.

Methods
A systematic review was conducted to investigate the association between delirium and acute stroke. Stroke patients with and without delirium were recruited into a UK based prospective cohort study and followed over six months. Each participant had their stroke diagnosis confirmed by clinical assessment. The presence and severity of delirium was detected and graded during their hospital stay. Other functional assessments were conducted within three days of admission and then six months post stroke.

Results and Conclusion
The systematic review highlighted a wide variation in delirium incidence from the studies published. The implications for the proposed study were assessment of long-term outcomes, more inclusive patient recruitment policies and employing reliable diagnostic tools. A total of 295 patients were recruited and data collection is on-going for the study.

This PhD project is funded by CLAHRC for Leeds, York and Bradford and supervised by Dr John D. Holmes and Professor John B. Young.
FEAR OF FALLING AFTER FRAGILITY FRACTURE - A PREVALENCE STUDY

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¹. Nottingham University, School of Health Sciences
². Nottingham University Hospitals NHS Trust, HCOP

Background
Fear of falling (FoF) is common in older people. FoF in middle aged patients has been poorly studied. The effects may be more significant than they are for older people in terms of employment and personal consequences. This study asks, what is the prevalence of FoF after low trauma fragility fracture, and what effect has FoF upon employment and leisure activities?

Methods
FoF (Falls Efficacy Scale International) and activity (Nottingham Leisure Questionnaire) were assessed in patients attending fracture clinic of a large UK Trust, referred by the medical team for further investigations of bone health. Patients where the fracture was greater than 3 months were excluded.

Results
Mean levels of FoF after fracture were 31.67 (SD 10.96). In those aged <65 (n=26) and ≥66 (n=59) mean FES-I was 31.08 (SD 10.34) and 31.93 (SD 11.31) respectively (p>0.05). High FOF (FES-I >23) was reported by 73% of those aged <65 years, and 73% in those aged ≥66 years.

Pre-fracture activity levels were significantly higher than those reported after fracture [mean 33.38, SD 7.60 as compared to 17.45, SD 5.32]; p<0.05. In those aged ≤65 and ≥66 the mean NLQ pre-fracture was 30.69, SD 6.42 and 34.56, SD 7.83 respectively (p<0.05). Post-fracture mean NLQ activity levels were 15.46, SD 5.69 and 18.32, SD 4.95 (p< 0.05).

Discussion
There is a high prevalence of FoF after low trauma fragility fracture, which is associated with decreased activity levels. In middle aged people this high prevalence may impact employment performance in addition to leisure activities. Given its prevalence and importance, questions to assess FOF should be incorporated into the clinical assessment of middle aged adults after fragility fracture. Interventions must be sourced and targeted to this under researched population that may curb loss of employment and quality of life.
Introduction
Falls is a major problem in frail elderly patients. Epidemiological studies have demonstrated that 28-35 percent of over 65s will sustain a fall over a one year period.\(^1\) Proper assessment of these patients is of vital importance in preventing further falls. There are wide variations of assessment of falls patients presenting to medical admission unit due to lack of adherence of NICE guidelines.\(^2\)

Method
We compared the initial assessment of falls patients by geriatrician and non-geriatrician consultant grades in University Hospitals of Leicester. It is a retrospective study. We reviewed the case notes to see if there is documented evidence of review of a number of domains from NICE guidelines as part of their initial assessment. These included review of:

- BMs/Blood Glucose
- ECG
- Postural drop in blood pressure
- Polypharmacy
- Bone protection

Results
A total of 80 patients are included in the study. 40 were reviewed by non-geriatric consultant physicians and the other half by geriatrician. Data was analysed using Fisher’s Exact Test. Geriatrician are more likely to review the BMs/blood glucose 82% vs 57% (p-value 0.27), polypharmacy review 65% vs 40% (p-value 0.043) and the review of bone protection 68% vs 15% (p-value <0.001) compared to non-geriatrician. Geriatrician are also more likely to review the ECG 97% vs 85% and postural hypotension 58% vs 40%. However these are not statistically significant differences.

Conclusion
Geriatrician are more likely to adhere to NICE guidelines to review falls patients as part of comprehensive geriatric assessment. However there is still room for improvement. This study demonstrated the importance of early involvement of geriatrician in assessing falls patient at the front door which will help to reduce further falls and therefore will minimise prolonged hospital stay.

Abstract No. 125
## A RANDOMISED CONTROLLED STUDY ON INDIVIDUALLY-TAILORED MULTIFACTORIAL FALLS INTERVENTION IN OLDER FALLERS IN MALAYSIA

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### Introduction

Falls is a major geriatric health problem worldwide. However, most falls studies were focused in Western, developed countries. This randomized-controlled study evaluates the benefits of multifactorial intervention in among older fallers in a lower-middle income nation. Our objective is to evaluate whether individually-tailored multifactorial interventions will reduce falls in our older population.

### Methods

Three hundred older individuals aged ≥ 65 years with a history of ≥2 falls, or one injurious fall in the past 12 months will be recruited from accident and emergency, primary care department and geriatric outpatients. Participants are randomized to conventional care and life-style advice (control group) or individually-tailored multifactorial interventions (intervention group). Interventions include the Otago exercise programme, home hazard modifications, visual correction, review of culprit medications and cardiovascular interventions. Primary outcome measures are falls recurrence recorded with monthly falls diaries and telephone interviews. Secondary outcome measures include number of falls, balance-related physical capabilities, quality of life (CASP-19), psychological well-being (DASS-21) and falls efficacy (short FES-I).

### Results

Recruitment commenced in July 2012. To date, 112 fallers have been assessed with 47 excluded for unmet criteria. The mean (standard deviation) age of participants was 73.6 (6.8) years, where 75 (67%) were female. 18/112 (16%) reported symptoms of vertigo, 20 (18%) presyncope, 44 (39%) dizziness and 13 (12%) loss of consciousness. A total of 397 falls were reported by the 112 fallers, 338/397 (86%) falls occurred indoors. 69/112 (61%) had a gait and balance disorder, 26/112 (23%) had visual impairment and 34/112 (30%) had possible home hazards. 32/76 (42%) had unexplained falls.

### Conclusion

Previous studies evaluating treatment for falls have reported variable outcomes. It is therefore vital to test the efficacy of multifactorial interventions in our population. Potential findings will be invaluable in advancing falls prevention methods, reducing healthcare burdens and improving the quality-of-life of our older community.
A RANDOMISED-CONTROLLED STUDY OF NASOGASTRIC TUBE FEEDING VERSUS PERCUTANEOUS ENDOSCOPIC GASTROSTOMY IN A MIDDLE INCOME DEVELOPING NATION IN SOUTH EAST ASIA

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Introduction
Despite published evidence, mainly in Western populations, advocating the use of PEG feeding, the uptake of PEG tube insertion in the Malaysian population remains poor. We intend to conduct a randomized controlled study evaluating morbidity and attitudes of carers associated with PEG and NG feeding.

Methods
100 participants will be recruited from the geriatric ward at University Malaya Medical Centre (UMMC) over 2 years. Informed consent will be obtained from participants or their carers.
Inclusion criteria include patients aged ≥ 65 year with a diagnosis of dysphagia requiring nutritional support via the enteral route for at least 6 weeks. Potential participants who have contraindications to either NG feeding or PEG feeding and end-stage dementia will be excluded.
Participants will be randomized with computer generated random numbers in sealed envelopes to NG feeding or PEG feeding.

Results
Participants will be assessed and followed up at 1, 2, 4 and 6 months, by structured telephone interviews with the carers. Primary outcome measure will be frequency of intervention failure which includes failure to introduce tube, recurrent displacements and treatment interruptions. Secondary outcomes will include nutritional status, mortality, hospitalization, complications and quality of life. Carer stress will be further assessed using semi-structured interviews.

Conclusion
While numerous studies have been performed on the merits of NG feeding vs PEG feeding particularly in stroke patients and head and neck cancers, few studies have addressed this issue in developing nations. We feel that such a study is required to address the cultural and geographical variation which at present appears to favour NG feeding above PEG feeding. Comments are invited with regards to study design and outcome measures (Please send an email to: hasif_jaafar@yahoo.com).

References
A HIGH DOSE PREPARATION OF LACTOBACILLI AND BIFIDOBACTERIA IN THE PREVENTION OF ANTIBIOTIC-ASSOCIATED AND CLOSTRIDIUM DIFFICILE DIARRHOEA IN OLDER PEOPLE ADMITTED TO HOSPITAL: A MULTICENTRE, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED, PARALLEL ARM TRIAL (PLACIDE)

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3. College of Medicine, Swansea University

Introduction
Antibiotic-associated diarrhoea (AAD) and Clostridium difficile diarrhoea (CDD) occur in 5-39% of antibiotic courses. They are major complications of antibiotic treatment and have a higher incidence in hospitalised patients 65yrs and older. Several previous trials have suggested a beneficial effect of probiotics in preventing these conditions.

Methods
We conducted a multicentre, randomised, double blind, placebo-controlled, parallel arm trial in five NHS hospitals in the UK. Eligible patients were treated with at least one antibiotic, were aged 65 years and over, had no previous diarrhoeal disorder or CDD and were not at risk from probiotics. 17,420 patients were screened and 2,981 were recruited. The intervention was two strains of lactobacilli and two strains of bifidobacteria (total of 6x10¹⁰ organisms/day) taken daily for 21 days. The random allocation process resulted in 1,493 patients (50.1%) receiving probiotics and 1,488 (49.9%) placebo. The main outcome measure was AAD within 8 weeks of recruitment or CDD within 12 weeks.

Results
The intention-to-treat analysis included 2,941 participants (98.7%). The treatment and placebo arms were well matched with regard to potential risk factors for AAD. AAD frequency (including CDD) was similar in the probiotic (159/1470, 10.8%) and placebo arms (153/1471, 10.4%; RR: 1.04; 95% CI 0.84-1.28; P=0.72). Rates of CDD were low, occurring in 12/1470 (0.8%) in the probiotic and 17/1471 (1.2%) in the placebo arm (RR 0.71; 95% CI 0.34-1.47; P=0.35). Gastrointestinal symptoms, serious adverse events and quality of life measures were all similar in both groups.

Conclusions
We found no evidence that probiotic administration was effective in preventing AAD or CDD in older hospitalised patients exposed to antibiotics.
**VOLUNTEER-ASSISTED MOBILISATION OF OLDER PEOPLE IN HOSPITAL – SYSTEMATIC REVIEW**

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**Scope**
Sedentary behaviour and bed rest in hospital are associated with multiple complications and worse health outcomes in older people. There is evidence that early mobilisation of those patients improves not only health outcomes but also general wellbeing and satisfaction with healthcare. This aspect of care is frequently compromised due to the time pressures experienced by clinical staff. We undertook a systematic literature review of studies that included volunteers helping mobilise older inpatients.

**Search methods**
We searched Cochrane, Medline, Embase, CINNAHL, Amed and Google databases using MeSH headings and keywords within six key themes: inpatients, older, exercise, delirium, falls and volunteers. The abstracts were screened first independently then jointly by two reviewers. Full texts of relevant articles were retrieved. Reference lists were reviewed. Hospital based studies, projects or programmes in which volunteers (+/- staff members) were used to assist mobilisation in medical inpatients aged over 65 were included. Multi–intervention trials were included if mobilisation was part of the protocol. We excluded studies limited to a single disease such as stroke or Parkinson’s disease.

**Results**
1677 papers were identified and the titles and abstracts were screened. Only four studies fulfilled the search criteria and were included in the final review. Multiple scientific abstracts related to one controlled study which included volunteer assisted mobilisation as part of the delirium prevention multi-intervention (HELP). Three observational studies were identified only on Google but were poorly evaluated or still on–going. The data available indicated a positive effect of volunteers on patient and staff satisfaction with care.

**Conclusions**
There is a lack of randomised controlled trials of volunteer assisted mobilisation of older inpatients. When adopted as part of delirium prevention programme volunteers contributed to improved outcomes. There is insufficient evidence to provide guidance on the use of volunteers specifically to deliver mobility assistance to older inpatients.
PATIENTS’ REACTIONS TO BEING SELECTED BY A COMPUTERISED PREDICTIVE RISK TOOL FOR CASE MANAGEMENT BY A COMMUNITY MATRON

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Background
In the UK 70% of health care costs is used by the 15 million people who have at least one long-term condition. The prevalence of long term conditions increases with age. Case management by Community Matrons can reduce care cost. Patients are selected using the combined risk tool which predicts the likelihood of an acute admission within the following six months. Potential patients are sent a letter offering an assessment; if consent is given admission to the Virtual Community Ward for case management ensues. Some patients decline the service or find this approach unusual. This study aimed to explore the reactions of patients who have been selected by a ‘computerized’ predictive risk tool for case management assessment.

Methods
A qualitative study design was used with a purposive selection of eight patients, who were newly admitted to the Community Matron’s caseload, mean age 78.1 years. In-depth, open-ended interviews were recorded and transcribed. An Interpretative phenomenological analytical model was adopted to interpret the data.

Results
Four themes emerged from the data: surveillance of health, dimensions of trust; dimensions of health guidance and dynamic perception of ill health. Patients were not particularly concerned about the use of predictive modelling; in many cases it was intuitive to their health belief systems. A linear model of reactions was developed from these findings.

Conclusion
The findings suggest that to gain a true sense of reaction to the use of risk tools further research is required, specifically targeting those who have refused case management and yet could potentially benefit from it the most. Such a care approach will become particularly important, as risk tools become more widely used and hard to reach individuals are required to engage in pro-active case management to prevent the rising cost of chronic ill health.
CAN A FRAILTY SCALE BE USED TO TRIAGE ELDERLY PATIENTS FROM EMERGENCY DEPARTMENT TO GERIATRIC WARDS?

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2. Department of Medicine for the Elderly, Cambridge University Hospitals NHS Foundation Trust, UK

Background
There is no widely established method for triaging elderly, frail patients to geriatric wards. In our teaching hospital, informal methods are currently used to allocate patients. We aimed to assess the potential impact of introducing the Clinical Frailty Scale (CFS) (Rockwood, K., Song, X., MacKnight, C., Canadian Medical Association Journal (2005) 173, pp.489-495) as a triaging method for patients aged over 75 who are admitted via the Emergency Department (ED). The CFS is a rapid, simple case-finding tool which might be used to improve the proportion of frail patients who are identified and allocated to geriatric wards.

Methods
We applied the Clinical Frailty Scale to 118 elderly patients who had been admitted from ED over a two-week period. We compared the distribution of frailty in geriatric and non-geriatric wards, and measured the strength of the CFS to identify frail people, compared to other frailty scales i.e. reported Edmonton Frailty Scale (rEFS) (Hilmer, S.N., Perera, V., Mitchell, S., Australasian Journal on Ageing (2009) 28(4) pp.182-188, PRISMA-7, Identification of Seniors at Risk (ISAR) (Dendukuri, N., McCusker, J., Belzile, E. Journal of the American Geriatrics Society (2004) 52(2) pp.290-296).

Results
The current difference between frailty in geriatric and non-geriatric medical wards in patients aged over 75 was not statistically significant (Standard deviation = 1.84 (geriatric), 2.10 (non-geriatric, p=0.58). Analysis of receiver operating curves showed that the Clinical Frailty Scale accurately identified frail patients when compared to other well-validated frailty scales at appropriate cut-off points (rEFS = 9+, Area under curve (AUC)=89.1%, standard deviation (SD)=3%) (ISAR = 3+, AUC=81.7%, SD=3.9%) (PRISMA-7=2+, AUC=90.8%, SD=3.1%).

Conclusions
Implementation of the CFS as a triage tool for elderly patients at ED could increase the proportion of frail patients who are directly admitted to a geriatric ward. This could improve patient access to appropriate geriatric care.
THE ACUTELY UNWELL PATIENT AND SINGLE ROOMS

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Tunbridge Wells Hospital at Pembury, Maidstone & Tunbridge Wells NHS Trust

Introduction
There is concern that benefits of single-rooms such as privacy and independence may be outweighed by clinical need for observation. Studies supporting their safety were conducted in non-NHS, high intensity areas e.g. ITU, with high nurse-patient ratios. There are no studies in general medical or geriatric populations. One study showed those in single-rooms had observations recorded less frequently.

Half the beds in all newly built NHS hospitals must be single-rooms. In 2011, our hospital moved from nightingale wards to a new building with 100% single-rooms providing the opportunity to evaluate the implications of single-rooms on patient safety.

Patient at Risk (PAR) Score is a validated and widely used tool to detect clinical deterioration. To determine whether single-rooms might impede early recognition of unwell patients, we examine PAR scores in both shared accommodation and single-rooms pre- and post-move.

Method
Pre-existing surveillance data for inpatients over 16 years old on medical wards were examined. This included critical care outreach (CCO) records for all reviews for high PAR score or clinical concern for one-year, and data on peri-arrest and arrest calls over 9 months, both pre- and post-move.

Mean PAR scores were examined using the unpaired t-test and linear regression for age-adjusted analysis.

Results

<table>
<thead>
<tr>
<th></th>
<th>Shared Accommodation</th>
<th>Single-Room</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unadjusted</td>
<td>5.0 (3.0)</td>
<td>55.1 (2.4)</td>
<td>0.63</td>
</tr>
<tr>
<td>Age Adjusted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Mean (SD)]</td>
<td></td>
<td></td>
<td>0.2</td>
</tr>
<tr>
<td>Age [Median (IQR)]</td>
<td>75</td>
<td>69</td>
<td>0.005</td>
</tr>
<tr>
<td><em>Mann-Whitney Test</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The proportion of peri-arrests to arrests did not change (p=0.64) indicating that those scoring highly were not under-represented in CCO data.

Conclusion
Findings do not support the notion that patients in single rooms are not monitored effectively such that clinical deterioration goes un-noticed. Increased numbers of nurses per shift may be contributory in a protective fashion.
A ROOM OF ONE'S OWN: A SURVEY ASSESSING DIGNITY AND MOOD OF MEDICAL INPATIENTS IN SINGLE AND SHARED ACCOMMODATION, AND THEIR PREFERENCES FOR SINGLE OR SHARED ACCOMMODATION

J C Preston, P M Maskell

Tunbridge Wells Hospital at Pembury, Maidstone & Tunbridge Wells NHS Trust

Introduction
Newly built NHS hospitals must provide a minimum of 50% single-rooms. The rationale is based on infection control, dignity and patient choice. The existing evidence-base, neglects general medical and older patients. Our hospital moved from nightingale wards to a new building with 100% single-rooms. We examine the effect of hospital environment on dignity and preference in medical patients.

Method
700 recently discharged medical patients (aged>16, over 2 four-month periods) were sent a postal survey of dignity. 350 were invited pre-move and 350 post-move. Validated questions used to assess dignity, mood and preference. Tests used were Mann-Whitney for scaled responses and Chi-square for preference comparison.

Results
Responders represented the population. There was no difference in response rates (57%) by site (p=0.13). Median age: 75 (IQR 62-84).

<table>
<thead>
<tr>
<th>Aspect</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washing Assistance</td>
<td>0.87</td>
</tr>
<tr>
<td>Meal Assistance</td>
<td>0.94</td>
</tr>
<tr>
<td>Privacy</td>
<td>0.003</td>
</tr>
<tr>
<td>Discomfort</td>
<td>0.66</td>
</tr>
<tr>
<td>Involved in Decisions</td>
<td>0.55</td>
</tr>
<tr>
<td>Treated with Dignity &amp; Respect</td>
<td>0.19</td>
</tr>
<tr>
<td>Depressed</td>
<td>0.28</td>
</tr>
<tr>
<td>Anxious</td>
<td>0.83</td>
</tr>
<tr>
<td>Worthwhile</td>
<td>0.51</td>
</tr>
<tr>
<td>Supported</td>
<td>0.48</td>
</tr>
<tr>
<td>Lonely</td>
<td>0.43</td>
</tr>
<tr>
<td>Future Preference</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Single-room preference increased post-move (60 to 77%). Increases were due those under 80 (p=0.001). In those over 80, 35 and 37% (p=0.86) would prefer shared accommodation.

Conclusion
More than 1 in 5 medical inpatients would prefer shared accommodation after staying in a single-room, increasing to nearly 2 in 5 of over 80s.

With the exception of privacy, room occupancy was not found to impact provision of other aspects of dignity or mood. We did not find evidence to support the routine use of single-rooms for all medical inpatients especially those over 80.

Abstract No. 133
A CURTAIN AROUND A BED, NOT VERY PRIVATE IS IT?" THEMATIC ANALYSIS OF SURVEY RESPONSES OF MEDICAL PATIENTS IN SHARED COMPARED WITH SINGLE ACCOMMODATION

A Heskett, J C Preston, P M Maskell

Tunbridge Wells Hospital at Pembury, Maidstone & Tunbridge Wells NHS Trust

Introduction
All newly built NHS hospitals must provide 50% side rooms minimum. This is based on benefits assumed from infection control and patient preference studies however there is little evidence base for non-elective medical and older populations. In 2011, the Kent & Sussex Hospital moved from open wards of up to 24 patients to the Tunbridge Wells Hospital, with 100% single rooms.

Method
700 recently discharged medical patients (all ages) were invited to participate in a postal survey study of dignity. 50% were recruited pre-move and 50% post-move. Each question asked for a scaled response and a free comment (former analysed separately). Two assessors undertook thematic analysis separately.

Results
364 comments analysed from 174 of 396 (44%) returned surveys. 68% comments were from those in single rooms. Categories identified are split into those that are universal and those predominating at one site.

<table>
<thead>
<tr>
<th>Common to Both Sites</th>
<th>Open Ward</th>
<th>Single rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Staffing Levels</td>
<td>Lack of audio privacy</td>
<td>Loneliness</td>
</tr>
<tr>
<td>Personal Care</td>
<td>Dementia / Delirium</td>
<td>Timeliness of Care</td>
</tr>
<tr>
<td>Dignity / Respect</td>
<td>Precision</td>
<td>Pain / Discomfort Control</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td>Independence</td>
</tr>
<tr>
<td>Privacy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Loneliness: Exclusively seen in single room group.

Dementia / Delirium: Focused towards staff understanding and more negative experiences. Prevalence of awareness with respect to decision-making noted.

Timeliness: Especially management of pain / discomfort.

Pain / Discomfort: Discomfort was understood to include positioning not just pain requiring medication.

Independence: Enabling maintenance thereof.

Audio Privacy: Curtains insufficient to maintain confidentiality and dignity.

Conclusion
Potential benefits of side rooms should be balanced with disadvantages experienced by individual patients.
Examining Models of Specialist Healthcare Support to Care Homes

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². NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre (Greater Manchester PSTRC), Centre for Primary Care, University of Manchester

Introduction
Older care home residents are a particularly vulnerable population as they have multiple and complex needs, but frequently lack access to specialist support. The importance of determining how best to address these residents’ physical healthcare needs, and prevent unnecessary hospital admissions, cannot be underestimated. The aim of this study was to explore services designed to tackle this challenge.

Methods
A national survey of specialist healthcare support services for care homes was undertaken with British Geriatrics Society (BGS) consultant members and a snowball sample of service representatives. Obtained data were used to develop a typology of care models, and these were examined through in-depth focus groups and interviews with service staff.

Results
In total, 438 (35%) BGS consultant members and 54 (57%) further providers responded to the survey. Of these, 82 respondents described 64 separate specialist services. The services were delivered by lone healthcare providers, single- or multi-disciplinary teams and could be categorised into five distinct models of care based on whether they had dedicated input from a medical consultant, and whether assessment and management of residents were provided. Nine exemplar services were recruited from six sites. Discussions with staff highlighted the evolving nature of these services, the need for effective liaison with other providers and the benefits of working in partnership with GPs. Difficulties forming relationships with care homes had been overcome by passionate and committed staff offering support and sharing their expertise.

Conclusions
This comprehensive study of specialist healthcare support for care homes has captured the range of services operating within the UK and identified their key characteristics. A new typology of services has been developed and each model illustrated with in-depth case studies. This study provides a strong evidence base, which can inform service commissioning and from which further experimental research can be designed.
THE PREDICTIVE PROPERTIES OF FRAILTY-RATING SCALES IN THE ACUTE MEDICAL UNIT

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University of Leicester, University of Nottingham and University Hospitals of Leicester

Background
Older people are at an increased risk of adverse outcomes following attendance at acute hospitals. Screening tools may help identify those most at risk. The objective of this study was to compare the predictive properties of five frailty-rating scales.

Method
This was a secondary analysis of a cohort study involving participants aged 70 years and above attending two acute medical units in the East Midlands, UK. Participants were classified at baseline as frail or non-frail using five different frailty-rating scales. The ability of each scale to predict outcomes at 90 days (mortality, readmissions, institutionalisation, functional decline and a composite adverse outcome) was assessed using area under a receiver operating characteristic curve (AUC).

Results
667 participants were studied. Frail participants according to all scales were associated with a significant increased risk of mortality (relative risk (RR) range 1.6 to 3.1), readmission (RR range 1.1 to 1.6), functional decline (RR range 1.2 to 2.1) and the composite adverse outcome (RR range 1.2 to 1.6). However, the predictive properties of the frailty-rating scales were poor, at best, for all outcomes assessed (AUC ranging from 0.44 to 0.69).

Conclusion
Frailty-rating scales alone are of limited use in risk stratifying older people being discharged from acute medical units.
PHYSICAL STRENGTH PREDICTS BOTH CHANGE IN COGNITION AND BRAIN VOLUMES TEN YEARS LATER, EVEN BETWEEN IDENTICAL TWINS

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². Clinical Age Research Unit, Clinical Gerontology, Kings College Hospital NHS Foundation Trust, London UK

Background
Growing literature suggests that physical activity levels and performance are important in determining cognitive change in older adults. This relationship is potentially confounded by other lifestyle factors, or by common causation through genetic or early developmental factors (e.g., birth weight). We report a series of results in a twin cohort followed longitudinally for ten years which show that physical performance specifically leg strength remains predictive of cognitive change, and gross brain volumes despite control for such factors.

Methods
324 (127 MZ, 197 DZ) female twins from TwinsUK cohort, aged 43-73 at baseline, performed the Cambridge Neuropsychological Automated Test battery (CANTAB) twice over a ten-year interval. At baseline, lifestyle factors and clinical measures were comprehensively assayed. A subsample of identical twins underwent brain MRI in year 11. Change in cognition was modelled using factor analysis such that higher score meant more successful cognitive ageing. Analysis presented includes: 1. Multivariate regression adjusting for family structure. 2. Twin-pair analysis using within-pair differences. 3. Paired t-test of differences in structural MRI in pairs discordant for physical performance.

Results
Leg strength at baseline was significantly positively associated with subsequent cognitive change over ten years (beta 0.22 (0.10-0.34), p=0.001), despite adjusting for age, diet, vascular risk factors, mental health, birth weight, adult height, occupation and reading IQ. Within twin difference in monozygotic pairs was also predictive (beta 0.43 (0.05-0.80) p=0.025). In 11 identical twin pairs discordant by more than 25 Watts in leg strength, structural MRI more than ten years later revealed significantly greater grey matter (3% (0-6%) one-sided p=0.03) and significantly smaller ventricles (-24% (-2% -45) one-sided p=0.019) in stronger compared to weaker twins.

Conclusions
Leg strength is predictive of both successful cognitive ageing and preservation of brain volumes independent of genetics, early and late lifestyle factors and vascular risk.
IP-10 AND IL-13 AS POTENTIALLY NEW, NON-CLASSICAL BLOOD-BASED CYTOKINE BIOMARKERS FOR ALZHEIMER’S DISEASE

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2. Brain Research Laboratory, Faculty of Pharmacy, Universiti Teknologi Mara (UiTM), Puncak Alam Campus, Bandar Puncak Alam, Selangor, Malaysia
3. Division of Geriatric Medicine, Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Introduction
The diagnosis of Alzheimer’s disease (AD) currently relies heavily on clinical assessments by trained specialists or high cost imaging methods. These methods of diagnoses are not easily accessible in poorer nations. As such, it is essential to identify reliable biomarkers to facilitate early, low cost, detection of AD. The present study therefore aims to identify potential blood-based cytokine biomarkers through cytokine profiling of blood samples from Malaysian AD patients.

Method
Further to informed consent from 39 healthy subjects and 39 probable AD patients, 8.5ml peripheral blood was collected and serum extracted. 25μl serum was added to ELISA kits which bind and detect specific targeted cytokines. Concentrations of cytokines were measured at 615nm using a flurometer. Ethics approval was obtained from the local ethics committee.

Results
IP-10 in AD patients (113.0±5.8 pg/ml) was four-fold higher (p<0.0001) than healthy subjects (28.2±2.2 pg/ml) and this fold change is twice as high when compared to European AD patients. Besides, IP-10 exhibited strong inverse correlation with MMSE score (r = −0.7908; p<0.0001). ROC curve analysis of the cutoff between IP-10 in AD patients and healthy subjects yielded an area of 1.0 (p<0.0001). On the contrary, IL-13 in AD patients (1.6±0.2 pg/ml) was 18-fold lower (p<0.0001) than healthy subjects (29.5±1.2 pg/ml). This fold change is nine times lower as opposed to those of European AD patients. IL-13 was strongly correlated to MMSE score (r = 0.7715; p<0.0001) and ROC curve analysis demonstrated strong evidence of diagnostic accuracy (area = 1.0; p<0.0001).

Conclusion
Both the non-classical pro-inflammatory IP-10 and anti-inflammatory IL-13 cytokines showed promising potential as blood-based cytokine biomarkers for AD. This was the first study to report the non-classical cytokine profiles of Malaysian AD patients. Further investigations into the causal effects of both these cytokines in mediating the pathogenesis of AD should be carried out.
**HOW NORMAL IS THIS BRAIN? A NEW NONPARAMETRIC VOXEL-BASED METHOD OF COMPARING BRAIN SCANS TO AGE-APPROPRIATE REFERENCE TEMPLATES**

D A Dickie¹,³, D E Job¹,³, D Rodriguez Gonzalez¹,³, S D Shenkin¹,², J M Wardlaw¹,³*

1. Brain Research Imaging Centre (BRIC)
2. Geriatric Medicine Unit, University of Edinburgh

**Introduction**

Differences in brain structure on magnetic resonance imaging (MRI) between normal ageing and early dementia are subtle. Without serial imaging, these differences may be highlighted by comparing individual scans to templates of normal brain structure. Previous templates had limitations, e.g. based on parametric assumptions that are potentially not met in brain structure data. Therefore, we describe the development of a nonparametric voxel-based method for determining the boundaries of normality, and how this might inform future templates.

**Methods**

We used structural brain MRI from 236 normal subjects and 138 subjects diagnosed with Alzheimer’s Disease (AD) (55-90 years) from the Alzheimer’s Disease Neuroimaging Initiative (ADNI) and the Open Access Series of Imaging Studies (OASIS). Half (49) of the normal subjects from OASIS and 49 normal subjects from ADNI were used to create nonparametric voxel-based templates of grey matter (GM), white matter (WM), and cerebrospinal fluid (CSF), according to the calculated values of the 2.5th, 25th, 50th, 75th, and 97.5th percentile ranks of GM, WM or CSF in each voxel. For comparison, we also created a parametric voxel-based template of GM. In a validation study, we ranked each voxel from the remaining normal and AD subjects with the nonparametric templates, and compared these to the parametric methods.

**Results**

The nonparametric GM template identified areas of atrophy known to be abnormal in AD, e.g. the hippocampus. These are shown on colour-coded brain images. There were differences between the nonparametric and parametric methods.

**Conclusion**

Nonparametric voxel-based brain ranking may highlight subtle brain structure abnormalities and allows comparison with age-appropriate templates. This may increase the utility of brain imaging in supporting diagnoses of neurodegenerative disorders. The development of robust templates of normal brain structure using nonparametric methods will require large numbers of normal subjects (see: [http://www.sinapse.ac.uk/research-resources/brains-project](http://www.sinapse.ac.uk/research-resources/brains-project)).
LIFE COURSE INFLUENCES OF PHYSICAL AND COGNITIVE FUNCTION AND PERSONALITY ON ATTITUDES TO AGING IN THE LOTHIAN BIRTH COHORT 1936

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Introduction
Attitudes to aging in older people themselves may relate to current physical or cognitive abilities, or may reflect factors from across the life course. This study investigated whether life course factors predicted attitudes to aging in healthy, community-dwelling people in the UK, taking account of relevant contemporary gerontological theories on the attitude and experience of ageing.

Methods
Participants in the Lothian Birth Cohort 1936 completed a cross-sectional postal survey including the self-report Attitudes to Aging Questionnaire (AAQ) around age 75 years (n=792, 51.4% male). Demographic, social, physical, cognitive and personality predictors were assessed three to six years previously. This included recall of childhood education and socio-economic circumstances, and recorded cognitive ability data at age 11.

Results
Generally positive attitudes were reported in all three domains: low Psychosocial Loss, high Physical Change, and high Psychological Growth. Hierarchical multiple regression found that attitudes to Psychosocial Loss were predicted by high neuroticism, low extraversion, openness and agreeableness, high anxiety and depression, (explaining 20.7% of the variance), and more physical disability (8.1%). Predictors of a positive attitude to Physical Change were: high extraversion, openness and conscientiousness (7.3% of the variance), and female sex, higher social class and less physical disability (10.4%). Personality predictors of attitudes to Psychological Growth were similar: high extraversion, openness, conscientiousness and agreeableness (14.0% of the variance). In contrast, a less affluent environment, living alone, lower National Adult Reading Test (vocabulary) scores and slower walking speed predicted a more positive attitude in this domain (7.1%). Childhood cognitive ability or early life socio-economic environment did not predict attitudes to ageing.

Conclusion
Older people’s attitudes to their own aging are generally positive, and are predicted mainly by enduring personality traits, as well as current social, physical and affective state.
HYDRATION IN THE OLDER HOSPITAL PATIENT – IS IT A PROBLEM?

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2. Department of Elderly Medicine, Nottingham University Hospitals, Queen’s Medical Centre, Nottingham
3. School of Sport, Exercise and Health Sciences, Loughborough University, Loughborough

Introduction
The number of elderly patients treated in hospital has grown considerably over the last decade compared to any other age group. Fluid and electrolyte abnormalities are found in up to 42% of elderly hospital patients and can also lead to significant morbidity and mortality.

We aimed to assess the prevalence of dehydration in elderly patients admitted to hospital and to assess the effects of the hydration status on clinical outcome.

Methods
Patients 65 years of age and over were recruited on admission to hospital. Patients were also assessed at 48 hours after admission and followed up post discharge. The hydration status was assessed using biochemical markers, including serum and urine osmolality and kidney function tests. Bioelectrical impedance measurements were also recorded to estimate total body water. Dehydration was defined as serum osmolality >300 mOsmol/kg in men and >295 mOsmol/kg in women.

Results
103 patients were recruited with mean (range) age 81 (65-99) 40%(n=41) were dehydrated on admission to hospital. 53(n=55) were reviewed at 48 hours after admission and followed up post discharge. The hydration status was assessed using biochemical markers, including serum and urine osmolality and kidney function tests. Bioelectrical impedance measurements were also recorded to estimate total body water. Dehydration was defined as serum osmolality >300 mOsmol/kg in men and >295 mOsmol/kg in women.

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There was an associated increase in length of hospital stay (LOS) in patients who were dehydrated on admission and at 48 hours when compared with the euhydrated group, median (range) LOS, 4(2-48) and 2(0-59) respectively, p=0.026. There was also an association between mortality at 4 months after discharge in patients who were dehydrated on admission and at 48 hours after admission, p=0.025.

Conclusions
A significant proportion of elderly patients admitted to hospital were dehydrated at admission and at 48 hours, some of which were dehydrated on admission to hospital. Dehydration at admission and at 48 hours was associated with increased length of hospital stay and mortality.
British Geriatrics Society 2013 Autumn Meeting

TOTAL ANTICHOLINERGIC BURDEN (ACB) AND IN-PATIENT HOSPITAL MORTALITY AND LENGTH OF STAY IN PATIENTS AGED >= 90 YEARS ADMITTED WITH AN ACUTE ILLNESS

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Introduction
Medication usage in older people is high and many commonly prescribed drugs have anticholinergic effects usually unwanted. Few studies have investigated the possible association between the use of anticholinergic drugs and mortality in oldest olds.

Methods
We analysed prospectively collected audit data from all acute medical admissions aged 90 years or more to hospitals in England and Scotland over a three month period. Baseline use of possible or definite anticholinergic drugs was determined according to the Anticholinergic Cognitive Burden Scale (ACB). Odds ratios for unadjusted and adjusted models for study outcomes were calculated. Risk ratios of outcomes according to ACB <2 and >=2 in those with and without cardiovascular disease were examined. Adjusted models included all variables with a P-value of <0.10 from the univariate analysis of characteristics between ACB categories. The main outcome measures were in-hospital mortality, early in-hospital mortality at 3- and 7-days and in-patient length of stay.

Results
Of the 419 patients included (median age = 92.9, IQR 91.4–95.1 years), 256 (61.1%) were taking anticholinergic medications. Younger age, greater number of pre-morbid conditions, ischaemic heart disease, number of medications, higher urea and creatinine levels were significantly associated with higher total ACB burden on univariate regression analysis. There were no significant differences observed in terms of in-patient mortality, in-patient hospital mortality within 3- and 7-days and likelihood of prolonged length of hospital stay between ACB categories. Compared to those without cardiovascular disease, patients with cardiovascular disease showed similar outcome regardless of ACB load (either <2 or >=2 ACB).

Conclusion
We found no evidence that anticholinergic burden at baseline predicted early (within 3- and 7-days) or later in-patient mortality, nor hospital length of stay in the oldest old in the acute medical admission setting.

Abstract No. 142
Introduction
An acute hospital admission is often a life changing event for older adults with up to 50% of patients over 65 losing ADL function whilst hospitalised. Physical activity is associated with maintaining independence and restoration of functional capacity. Our purpose was to pilot an observational coding system of physical activity levels on the Unit.

Methods
Sixteen patients (mean age 83.6; SD 5.65) were observed over 4 separate sessions by a single observer during the same epoch (2pm-5pm) creating a total of 288 observations. Modal posture and activity were recorded at 10 minute intervals, using a pre-designed code form. Self-reported pre-morbid function and current physical function, reported by the ward physiotherapist, as well as gait velocity, CONFbal & Elderly Mobility Score (EMS) were captured during March 2012 for potential factors.

Results
All patients reported they were capable of ambulation before admission. At the time of observation 11 patients (69%) were ambulatory, mean (SD) physical measures; gait velocity 0.2m.sec\(^{-1}\) (0.13m.sec\(^{-1}\)), CONFbal 23.6 (3.8), EMS 10.6 (3.37).

Table 1: Position and Activity Summary

<table>
<thead>
<tr>
<th>Position</th>
<th>% of time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed</td>
<td>31%</td>
</tr>
<tr>
<td>Chair</td>
<td>63%</td>
</tr>
<tr>
<td>Standing</td>
<td>6%</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
</tr>
<tr>
<td>Sleep/rest</td>
<td>78%</td>
</tr>
<tr>
<td>Care needs</td>
<td>7%</td>
</tr>
<tr>
<td>Non-essential activity</td>
<td>3%</td>
</tr>
<tr>
<td>Off ward</td>
<td>12%</td>
</tr>
</tbody>
</table>

Conclusion
This group of patients had extremely slow gait speeds indicating their frailty and risk of functional decline during hospitalisation. Physical activity levels were extremely low on the Unit with ambulatory patients spending 78% of time inactive. CONFbal scores were high which may mean they do not ambulate because they fear falling. Research suggests that 55% of older adults have some degree of fear of falling, and 56% curtailed their activities because of this. We hypothesise that in hospital fear of falling may be more prevalent and result in greater activity curtailment.
### PREVALENCE, INCIDENCE AND AETIOLOGY OF HYponatraemia IN ELDERLY PATIENTS WITH FRAGILITY FRACTURES

K Cumming¹, G E Hoyle², J D Hutchison¹, R L Soiza²

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#### Introduction

Hyponatraemia (serum sodium < 135mMol/L) is the commonest electrolyte imbalance encountered in clinical practice. It is associated with multiple poor clinical outcomes including increased mortality, longer hospital stay, falls and fractures. Prevalence is higher in frail patient groups, and elderly patients with fragility fractures (EPFF) are particularly susceptible. Euvolaemic hyponatraemia due to the syndrome of inappropriate anti-diuretic hormone (SIADH) is widely assumed to be the commonest cause. However, little is known about the epidemiology and aetiology of hyponatraemia in EPFF. This study examined the prevalence, incidence and aetiology of hyponatraemia in EPFF.

#### Methods

Prospective observational study of consenting adults aged >65 years admitted with a fragility fracture to Aberdeen Royal Infirmary between 7th January - 4th April 2013. Prevalence of hyponatraemia on admission and incidence of cases developing in hospital were reported. Aetiology of cases of hyponatraemia was determined by consensus of an expert panel using pre-specified data collected daily.

#### Results

127/212 (60%) EPFF were recruited (mean age 79 yrs, 78% female); 2 participants withdrew mid-study. Of those not recruited, 66 had incapacity to consent and 19 refused participation. Point prevalence of hyponatraemia on admission was 13.4% and a further 12.6% developed hyponatraemia during admission. Hypovolaemic hyponatraemia was predominant (70%). 73% of cases were multi-factorial in aetiology. The commonest causative factors in cases of hyponatraemia were thiazide diuretics (76%), dehydration (70%), proton pump inhibitors (70%), SIADH (27%) and mirtazapine (15%).

#### Conclusion

Hyponatraemia is highly prevalent in EPFF, seen in 26% of cases. Dehydration and prescription of thiazide diuretics and proton pump inhibitors were the commonest causative factors, not SIADH.
BIOELECTRICAL IMPEDANCE ANALYSIS IS MORE ACCURATE THAN CLINICAL EXAMINATION IN DETERMINING THE VOLAEMIC STATUS OF ELDERLY PATIENTS WITH FRAGILITY FRACTURE AND HYponatraemia

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1. School of Medicine, University of Aberdeen
2. Department of Medicine for the Elderly, NHS Grampian

Introduction
Hyponatraemia (serum sodium<135mMol/L) is the commonest electrolyte imbalance encountered in clinical practice. It is associated with multiple poor clinical outcomes including increased mortality, longer hospital stay, falls and fractures. Management of hyponatraemia depends crucially on accurate determination of volaemic (hydration) status but this is notoriously challenging to measure, especially in older people. Bioelectrical impedance analysis (BIA) provides a quick, validated and inexpensive means of determining total body water (TBW), but its’ clinical utility in determining volaemic status in hyponatraemia has never been tested. The aim of this study was to assess the utility of BIA in the clinical management of hyponatraemia in elderly patients with fragility fractures (EPFF), a group at especially high risk of hyponatraemia.

Methods
A service evaluation was conducted in patients >65 years, admitted to Aberdeen Royal Infirmary with fragility fractures, with capacity to consent to participation. BIA and standard clinical examination procedures (JVP, skin turgor, mouth and axillary moistness, peripheral oedema, capillary refill time and overall impression) were performed daily throughout each participant’s hospital stay. In cases of hyponatraemia, volaemic status was determined by an expert panel using clinical data (history, examination, nursing observations and laboratory tests) blinded to TBW readings. Cohen’s kappa was calculated to assess the level of agreement between the expert panel and both BIA and standard clinical examination measures in determining the volaemic state of hyponatraemia.

Results
26/33 cases of hyponatraemia had sufficient clinical information to allow determination of volaemic status by BIA. There was moderate level of agreement between BIA and the expert panel, kappa 0.52 (p<0.001). All kappa values for standard clinical assessments of volaemic status neared zero, indicating nil to slight agreement.

Conclusion
BIA outperformed all aspects of the standard clinical examination in determining the volaemic status of hyponatraemic EPFF, suggesting it may be useful in clinical practice.
FRAILTY PREDICTORS AND OUTCOMES FOR GERIATRIC IN-PATIENTS

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Introduction
Frailty results in vulnerability which increases adverse outcomes, such as disability, falls, institutionalisation, hospitalisation, and mortality. Our average length of stay (LOS) is above national average therefore we wanted to test the hypotheses that frailty is a contributor, and among many frailty indicators recorded routinely during admission; if there are any significant predictors.

Method
This is a retrospective cohort study of case notes of the patients who were admitted to the geriatric ward at the Royal Bournemouth Hospital.

Length of stay as dependent variable was studied for frailty indicators as independent variables; demographics, socio-economic status, mini-mental state examination (MMSE), geriatric depression score (GDS), MUST score, Barthel index, medications, previous falls, elderly mobility score (EMS), Waterloo scores, BMI, co-morbidities: AF, CCF, CKD, IHD were recorded and subsequently analysed (SAS9.2).

Results
53 patients were recruited, 49% were males and mean age was 86 years. 40/53(75.5%) stayed on the ward for more than a week. 18/40 vs 4/13 had a Barthel score <25, p=0.022, OR 0.51(95%CI 0.03 to 0.98). 18/40 vs 2/13 had a very high Waterloo pressure score (20+), p=0.007, OR 1.141(95%CI 0.02 to 0.81).

26/40(65%) in the long stay vs 11/13(84%) had history of falls. However this was not significant. There was no significant difference for cardiovascular disease, BMI, MMSE and EMS in the length of stay.

37/53 had previous history of falls. Only 6 (16.2%) of those with previous falls were on bone protection medication. 10/37 of fallers had an EMS score <5 (p=0.055). The remaining parameters comparing against fall were insignificant.

Conclusion
It is observed that the frailty score, such as Barthel and Waterloo are significant predictors of LOS, however no significant correlation was found for MMSE, MUST score, IHD, mortality, falls and cardiovascular health. As this is a pilot study, the results documented are preliminary data.

Abstract No. 146
THE ROLE FRAILTY SYNDROME CAN PLAY IN SUPPORTING AND TARGETING RESOURCES IN OUR AGEING POPULATION - HIGH PREVALENCE OF FRAILTY SYNDROME IN A POPULATION ATTENDING THE DAY HOSPITAL

O Ntholang, R E Kelly, R Romero-Ortuno, S Cosgrave, C Tiernan, D Kelly, G Hughes, O Collins, J J Barry, M Crowe, D O'Shea

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Background
The frailty syndrome will become (has become) an important focus for supporting and targeting resources to our ageing population. Frail individuals are at higher risk of adverse outcomes and need priority access to Comprehensive Geriatric Assessment (CGA). In the community, the prevalence of frailty is 4-7%. Our aim was to establish the prevalence and correlates of frailty in new referrals to our geriatric Day Hospital (DH).

Method
Data was prospectively collected between August 2012–April 2013. Levels of frailty were measured with the SHARE Frailty Instrument for Primary Care (SHARE-FI, http://www.biomedcentral.com/1471-2318/10/57). Frailty correlates included demographics, physical performance scores, falls history, and need for higher level CGA services.

Results
Of the 257 patients assessed (90 men, 167 women), 81 (31.5%) were frail, 66 (25.7%) pre-frail and 110 (42.8%) non-frail. Mean age was 84.3 years for the frail, 83.2 for the pre-frail and 82.2 for the non-frail (P=0.021 frail vs. non-frail). Mean Berg Balance Score (BBS) was 43.1 for the frail, 47.1 for the pre-frail and 50.7 for the non-frail (P<0.01 frail vs. others). Mean Timed Up and Go (TUG) test was 33.9 seconds for the frail, 19.5 for the pre-frail and 14.5 for the non-frail (P<0.01 frail vs. others). Forty-one per cent of the frail reported two or more falls in the preceding year, compared to 38% of the pre-frail and 21% of the non-frail. Of the 27 patients who were referred to a higher level CGA service, 16(59.3%) were frail, 4(14.8%) pre-frail and 7(25.9%) non-frail.

Conclusions
The prevalence of frailty in our DH (31.5%) was higher than in the community (4-7%). Frail patients had worse physical performance scores, more history of falls and were in greater need for higher level CGA services. The use of SHARE-FI in primary care may aid the efficient targeting of CGA resources to our ageing population.
A DECADE OF STARTING HAEMODIALYSIS IN OCTOGENARIANS - EXPERIENCE FROM A SINGLE UK CENTRE

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Introduction
The world’s population is ageing. Old age was previously viewed as a relative contraindication to offering renal replacement therapy (RRT). This reticence was driven by concerns that the very elderly do not survive long enough to benefit from RRT and previous studies have quoted high mortality rates. This study assesses survival in an octogenarian cohort commencing haemodialysis (HD) and looks at factors potentially associated with prolonged survival.

Methods
We retrospectively analysed 11 years of data (1st January 2000 – 31st December 2010) of octogenarians starting HD at a teaching hospital in the West Midlands. Patients aged 80 years or older at the time of commencing HD were included in the analysis. Patients were excluded if they were already established on HD at another centre. Data was obtained from the hospital’s renal database. Data collected included patient demographics, aetiology of renal failure, duration of HD, access type at first dialysis, Charlson comorbidity index score, cause of death and indication for HD.

Results
Data from 139 eligible patients were included for analysis (85 men, 54 women. Mean age 83.6±2.8 years). This group accounted for 10.9% of new HD starters during this time period. Forty-two patients died within 90 days of starting dialysis (42/139, 30.2%). For those individuals who survived >90 days, mean (median) duration of HD is 871.8 (805) days. Long-term survival was more common in females and those whose first dialysis used an arteriovenous fistula.

Conclusions
This study demonstrates that there is a significant early mortality risk in octogenarians commencing HD. The majority of early deaths were caused by cardiac arrest and treatment withdrawal. Patients who survive beyond the initial 90 days, the majority have a good long-term survival. Long-term survival was more common in female patients and those who start HD with a fistula. Further study is needed to identify factors can reliably predict long-term survival.
# PREVALENCE AND PROGNOSTIC SIGNIFICANCE OF SARCOPENIA IN HOSPITALISED OLDER PATIENTS

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## Introduction
Sarcopenia is prevalent in older populations with many causes and varying outcomes however information for use in clinical practice is still lacking. We aim to identify the clinical determinants and prognostic significance of sarcopenia in older patients.

## Methods
Four hundred and thirty two randomly selected patients had their baseline clinical characteristic data assessed within 72 h of admission, at 6 weeks and at 6 months. Nutritional status was assessed from anthropometric and biochemical data. Sarcopenia was diagnosed from low muscle mass and low muscle strength-hand grip using anthropometric measures based on the European Working Group criteria.

## Results
Compared with patients without sarcopenia, those diagnosed with sarcopenia 44 (10%) were more likely to be older, have more depression symptoms and lower serum albumin concentration. The length of hospital stay (LOS) was significantly longer in patients diagnosed with sarcopenia compared with patients without sarcopenia [mean (SD) LOS 13.4 (8.8) versus 9.4 (7) days respectively, \( p = 0.003 \)]. The risk of non-elective readmission in the 6 months follow up period was significantly lower in patients without sarcopenia compared with those diagnosed with sarcopenia (adjusted hazard ratio .53 (95% CI: .32 to .87, \( p = 0.013 \)). The death rate was also lower in patients without sarcopenia 38/388 (10%), compared with those with sarcopenia 12/44 (27%), \( p \) value=0.001.

## Conclusion
Older people with sarcopenia have poor clinical outcome following acute illness compared with those without sarcopenia.
FEASIBILITY AND UTILITY OF COMPREHENSIVE GERIATRIC ASSESSMENT SCREENING VIA POSTAL QUESTIONNAIRE (CGA-GOLD) IN OLDER PEOPLE WITH CANCER

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6. Cancer Services Innovation Directorate, Macmillan Cancer Support

Introduction
Almost two thirds of new UK cancer diagnoses are in people aged 65+. Despite this, there is no routine assessment of the wider needs of older people within NHS oncology services. This study investigates feasibility and utility of CGA screening using self-reported postal questionnaires (CGA-GOLD) covering evidence-based CGA domains and quality of life (using EORTC-QLQ-C30).

Methods
Patients aged 65+ were recruited via oncology clinics and chemotherapy day unit in a London teaching hospital (LREC 09/H0718/65). The questionnaire was mailed to patients with urological, lung, breast, gynaecological, hepatobiliary and gastrointestinal malignancies. Feasibility was assessed by delivery process, questionnaire completion time and assistance required, and utility by prevalence of CGA issues reported.

Results
1002 patients were approached, 418 (42%) consented and 417 completed the questionnaire. Mean age 73.9 +/- 5.4 (range 65-92), 56.9% male. Mean completion time was 11.7 +/- 7.9 minutes and 86.3% (345) required no assistance. Comorbidities reported included 16.9% (68) diabetes, 12.1% (50) IHD and 17.8% (73) chronic lung disease. 47.4% (195) reported weight loss, 21.4% (87) urinary incontinence and 13.3% (55) falls. Functional issues included difficulty walking and with stairs in 14.9% (61) and 17.3% (71) respectively. Quality of life issues included 32.5% (136) tiredness, 12.5% (51) pain interfering with daily activities and 10.5% (43) depression.

Conclusion
CGA screening using a self-reported postal questionnaire appears a feasible tool to use in older people presenting to UK cancer services. Screening identified potential issues which may affect tolerance to cancer treatment. These patients may benefit from broader, more in-depth clinical assessments.
A DESCRIPTIVE STUDY OF PATTERNS OF DISEASE AND CLINICAL OUTCOMES IN OLDER ADULTS ADMITTED TO MEDICAL WARDS IN A CENTRAL HOSPITAL IN MALAWI

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Introduction
The Queen Elizabeth Central Hospital (QECH) is the largest hospital in Malawi; approximately 8,000 patients are admitted yearly on the adult medical wards. Infectious disease admissions dominate, however there is an emerging epidemic of non-communicable diseases. QECH has an electronic medical record (EMR) which records information on demographics, HIV status, diagnosis and outcome (discharged alive/died).

Method
Diagnosis, HIV status, length of stay and outcome was extracted from the EMR and analysed according to age for the first 4 months of 2013.

Results
There were 2142 admissions, of which 17% were ≥55 years. The 10 commonest diagnoses and mortality by diagnosis differed across age categories (table). Age was associated with all-cause mortality (p=0.0212), peaking at 30% in the 50-54 age group. Analysis of the commonest diagnoses showed that pneumonia mortality was higher in those <45 years (15.7%) compared to those >45 years (8.7%), (p=0.0249) whereas sepsis mortality increased with older age (p=0.0230). Median length of stay (in live discharges) was 7 and 6 days respectively, among patients <55 years and ≥55 years (p=0.05). Younger patients were more likely to know their HIV status (68% vs 42.2%) and if known were more likely to be HIV reactive (74.9% vs 46.4%).

Conclusions
These data reveal important differences in disease pattern, HIV prevalence and outcome between young and older adults. Further research is needed to understand the factors underlying these differences.

<table>
<thead>
<tr>
<th>&lt;55 years (n=1779)</th>
<th>≥55 years (n=363)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnoses</td>
<td>% mortality</td>
</tr>
<tr>
<td>(ranked by prevalence)</td>
<td></td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>31.6</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>14.2</td>
</tr>
<tr>
<td>Sepsis</td>
<td>16.0</td>
</tr>
<tr>
<td>Meningitis</td>
<td>33.3</td>
</tr>
<tr>
<td>Anaemia</td>
<td>22.6</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>17.6</td>
</tr>
<tr>
<td>Malaria</td>
<td>15.1</td>
</tr>
<tr>
<td>Cancer</td>
<td>15.8</td>
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<tr>
<td>Diabetes</td>
<td>18.8</td>
</tr>
<tr>
<td>Heart Failure</td>
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</table>

Abstract No. 151
A SIMPLE PROTOCOL FOR OBSERVING BACKWARD STEPPING AMONG PEOPLE WITH PARKINSON’S: AN ACTION FREQUENTLY ASSOCIATED WITH FALLS

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Introduction
People with Parkinson’s (PwP) frequently fall when walking, often tripping or failing to change direction successfully. Stepping backward, necessitating both ground clearance and travel without visual guidance, commonly causes falling among PwP. The single step backward has been little investigated, in comparison with backward walking, though the former is ‘everyday’ and the latter unusual. Unlike certain fall-related actions (such as turning), there is little evidence from which to develop rehabilitation strategies for safer backward stepping. We conducted a feasibility study to develop methods for analysing the backward step and to suggest avenues for rehabilitation.

Methods
In a gait laboratory, 4 PwP (median age 75 years) and 4 healthy controls stepped back under two instructions: ‘Step back when you are ready’ and ‘Take a big step back’. Wall-mounted scanners tracked button-sized markers on their shoes, measuring step height and length, and base width (heel separation) before and after stepping. We present data as a percentage of participant height.

Results
Backward steps were a median 5% of participant’s height vertically and 20% in length, narrowing the base 3% in PwP. Values were 7%, 27% and <1%, respectively, in controls. ‘Big’ backward steps were a median 8% high and 29% long, narrowing the base 3% in PwP, compared with 11%, 39% and 2%, respectively, in controls. The protocol was successful; under close supervision, no-one fell and representative movements were recorded.

Conclusion
Among PwP, a history of instability moving backwards warrants investigation and intervention to reduce the risk of falling. Further research is required but clinicians might observe patients stepping backward to identify low, short steps (increasing tripping risk), base narrowing (decreasing stability) and an inability to ‘up-scale’ attempting ‘big’ steps. Following advice/education in the short term, these features are potentially amenable to intervention through movement-retraining in the longer term.
# THE WALKING STROOP – A NOVEL TEST FOR EXECUTIVE FUNCTION IN PARKINSON’S DISEASE

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## Introduction

Parkinson’s disease (PD) affects about 127,000 patients in the UK and its prevalence is set to rise. Executive function and dual-tasking are impaired in Parkinson’s disease dementia and non-demented PD patients. A Walking Stroop is a novel task designed to test executive function and dual-tasking. It combines a Stroop task and a 6m walk. We aim to ascertain whether there is any difference between PD participants and controls in Walking Stroop performance and to determine whether the ‘Walking Stroop’ tests executive function, dual tasking or both.

## Methods

Twenty PD patients and 20 controls completed a 6m walk, a congruent Walking Stroop condition (reading colour-names on the congruent side) and two incongruent Walking Stroop conditions (reading colour-names and naming ink colour on the incongruent side). Scores were compared to trail-making task and computerised Stroop performance, as well as mini mental state examination and Unified Parkinson’s Disease Rating Scale scores.

## Results

There was no significant difference in Walking Stroop performance between PD patients and controls. There was a significant correlation ($r=-0.704$, $n=40$, $p=0.000$) between Walking Stroop and Trail Making Test Scaled Score, which measures executive function and dual-tasking. There was no correlation between Walking Stroop and Trail Making Test Ratio or Walking Stroop and computerised Stroop – both these tasks test executive function only.

## Conclusion

The Walking Stroop was found to test a combination of executive function and dual-tasking but not executive function alone. The Walking Stroop could have future use as a clinical screening test for falls risk pending further validation.
NON-MOTOR SYMPTOMS AND NON-WHITE ETHNICITY ARE ASSOCIATED WITH WORSE QUALITY OF LIFE AND INCREASED CAREGIVER STRAIN IN PARKINSON’S DISEASE

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Introduction
Parkinson’s disease commonly causes non-motor symptoms (NMS) in addition to the well-recognized motor symptoms. Parkinson’s disease has a significant impact on quality of life, and also causes strain on caregivers.

Methods
This study sought to elucidate the impact of NMS on quality of life and caregiver strain in a sample of patients with Parkinson’s disease attending a multidisciplinary, community hospital-based, outpatient clinic. The clinic is situated in an area of ethnic diversity. Demographic and disease information was collected, together with standardized assessments of NMS and disease severity. Quality of life was assessed using the Parkinson’s Disease Questionnaire, and caregiver strain using the Caregiver Strain Index. Multivariate linear regression was used to analyse the effect of NMS and other explanatory variables.

Results
489 patients were assessed, with a mean age of 73 years. The majority of patients had mild or moderate disease (Hoehn and Yahr stage ≤3) and lived at home. Patients reported a mean of 8.6 NMS and only 1.2% of patients experienced no NMS. In multivariate analysis, motor symptoms were not associated with quality of life. However, more NMS and younger age were associated with worse quality of life and increased caregiver strain. Surprisingly, the strongest association with both quality of life and caregiver strain was being of non-white ethnicity.

Conclusions
In this sample of community dwelling patients with Parkinson’s disease, NMS had greater impact than motor symptoms on quality of life and caregiver strain. Being of non-white ethnicity has been associated with worse quality of life in other chronic diseases (AA Lopes, JL Gresham-Bragg, S Satayathum, Am J Kidney Disease, 2003, 41, 605-15). However, this was an unexpected finding, and further qualitative research may help to explain why patients from ethnic minorities with Parkinson’s disease experience worse quality of life.
GASTROPARESIS SYMPTOMS IN EARLY PARKINSON’S DISEASE

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Introduction
Gastroparesis is a chronic episodic disorder of delayed gastric emptying. Measurement of gastric emptying rates in PD suggests that 70-100% of patients may have abnormally delayed gastric emptying, which may contribute to the variable response to oral Levodopa seen in some patients.

The relationship between gastric emptying rate and gastroparesis symptoms in PD is unclear. This study aims to define the prevalence and clinical features associated with gastroparesis symptoms in people with early PD.

Methods
This is an interim report from a subset of patients recruited to the on-going Parkinson’s Repository of Biosamples and Networked Datasets (PRoBaND) cohort study. Patients diagnosed with PD within the preceding three years completed a validated questionnaire regarding symptoms of gastroparesis (gastroparesis cardinal symptom index: GCSI).

Results
Out of 672 patients, 64% were male, mean age 67.2 years (± 9.2 standard deviations [SD]), mean age at diagnosis 65.7 years (± 9.1 SD), median disease duration 1.4 years (interquartile range 1.67), mean UPDRS part 3 score 21.4 (± 11.7 SD).

The median GCSI total score was 0.17 (interquartile range 0.64). 3.9% of patients had a high GCSI total score (≥ 1.90) consistent with a diagnosis of gastroparesis. Higher GCSI scores were significantly associated with female gender (P < 0.001), higher UPDRS part 3 score (P < 0.05) and constipation (<1 bowel motion daily) (P = 0.01).

Conclusions
Although measured gastric emptying delay is common in PD, only 3.9% of patients with early PD report significant gastroparesis symptoms. This suggests that delayed gastric emptying may be largely asymptomatic, as has also been suggested in diabetic populations. The association of more severe gastroparesis symptoms with worse motor features and constipation is novel and will be further explored in the full PRoBaND cohort.
PHARMACOLOGY

CLINICAL EVIDENCE SUPPORTING THE USE OF SOUVENAID® IN EARLY ALZHEIMER’S DISEASE

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Introduction
Souvenaid® is a new nutritional drink for the dietary management of early Alzheimer’s disease that contains a unique patented combination of nutrients (Fortasyn Connect) that includes omega-3 polyunsaturated fatty acids, phospholipids, choline, uridine monophosphate, folic acid, vitamins B6, B12, C and E, and selenium(1). These nutrients can act as precursors and cofactors in the synthesis of synaptic membrane phospholipids.

Methods
Three randomised controlled trials of Souvenaid have been conducted over a 12-year development programme. The Souvenir I and II trials recruited AD-drug-naïve patients with mild AD (Mini-Mental State Examination [MMSE] score ≥20) over 12 or 24 weeks, respectively(1,2). The primary outcome measures were the delayed verbal recall task of the Wechsler Memory Scale-revised (WMS-r) and the 13-item AD Assessment Scale cognitive subscale (ADAS-Cog) in Souvenir I, and the memory domain score (z-score) of a modified Neuropsychological Test Battery (NTB) in Souvenir II. The 24-week S-Connect trial(3) was conducted in patients with mild-to-moderate AD (MMSE 14-24) on stable doses of standard AD medications, and the primary outcome measure was the ADAS-Cog.

Results
In Souvenir I, 40% of early AD patients receiving Souvenaid improved on the delayed verbal recall task compared with 24% of patients in the control group (χ² test, p=0.021). No change was reported for the 13-item ADAS-Cog. In Souvenir II, the NTB memory domain score increased significantly in the Souvenaid group compared with the control group over the 24-week trial. No change was reported for the 11-item ADAS-Cog in S-Connect. Souvenaid was well tolerated when taken with or without standard AD drugs. Compliance (≥75% adherence) with Souvenaid was high, at 94–97% across the three clinical trials.

Conclusions
Souvenaid provides the specific nutritional elements required by people living with mild AD and is well accepted and well tolerated. An active research programme (LipiDiDiet) is ongoing to identify other potential clinical uses for Souvenaid.
THE PASSIVE DEATH WISH AND THE FRAILTY SYNDROME: AN OPPORTUNITY FOR ACTIVE INTERVENTION

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Introduction
A passive death wish (PDW) increases risk for completed suicide. Depression in the presence of co-morbid physical illness is classically difficult to diagnose given overlapping somatic symptoms. Clinicians may benefit from knowledge of a simple screening question to assist targeting of further inquiry, investigation and treatment in older adults at high risk of both depression and physical frailty. We thus sought to investigate a potential relationship between the frailty phenotype and the report of a passive death wish in older adults.

Methods
Cross-sectional analysis of data from The Irish Longitudinal Study on Ageing (TILDA), from participants aged 60 and over, who completed a comprehensive health assessment (n=2,440). Frailty was defined using the Fried Frailty criteria whereby participants are classified as robust, pre-frail or frail. PDW was assessed via a single question whereby respondents were asked by a trained interviewer if they had had thoughts that they would rather be dead in the last month.

Results
A PDW was reported by 2.4% of the population over 60 years. Of those who attended the health assessment 2.3% were classified as frail. 17.9% of those classified as frail reported a PDW. Regression analysis found that a PDW was significantly and independently associated with being categorised as frail (RR 2.4; p=0.005) along with increasing age, higher levels of depressive symptoms, smoking and polypharmacy.

Conclusions
In those over 60 years the report of a PDW is associated with increasing risk of classification as frail, independent of depressive symptomatology. If further research were to confirm this association, a single question used to identify a PDW may provide a simple screening strategy in older adults at once highlighting increased risk of depression, physical frailty and suicide.

Abstract No. 157
ORTHOSTATIC INTOLERANCE IS ASSOCIATED WITH SUBJECTIVE MEMORY COMPLAINTS IN OLDER IRISH ADULTS

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Introduction
Growing evidence suggests a link between orthostatic blood pressure changes and cognitive function - this association has been reported even with subsyndromal orthostatic hypotension (OH). Orthostatic intolerance (OI) may reflect transient cerebral hypoperfusion resulting from orthostatic challenge. Subjective Memory Complaints (SMC) in the absence of objective deficits in older adults have been suggested as a possible early indicator of future cognitive decline yet present a diagnostic dilemma given significant overlaps with mood disorders and personality traits. Both SMC and OH have been associated with cerebral white matter hyperintensities on MRI. Building on earlier work from our group, we hypothesised that OI may be more common in those with SMC.

Methods
Cross-sectional in design, participants were those aged 50 and older who completed the TILDA health centre assessment which included comprehensive cognitive testing, screening for SMC and measurement of orthostatic phasic blood pressure changes using beat-to-beat digital photoplethysmography (Finometer®). OI was defined as reporting feelings of dizziness, light-headedness or unsteadiness during active stand.

Results
4,672 participants were free from dementia (MMSE>23; DWR>2). 4018 (84%) rated their memory as excellent, very good or good and 654 (14%) rated their memory as fair or poor. 1,730 (37%) expressed symptoms of OI upon standing. A logistic regression model found that in addition to male gender, treatment with antidepressant medications, high levels of neuroticism and higher educational background, orthostatic intolerance was independently associated with SMC (OR 1.37; CI 1.05-1.8; p<0.05).

Conclusions
These preliminary findings suggest a link between OI and SMC in community-dwelling older adults at population level while controlling for a broad range of bio-psycho-social variables (notably depression, anxiety and personality variables). If the relationship between OI and SMC were to be confirmed in longitudinal analysis, OI may represent a potential modifiable risk factor for subjective cognitive dysfunction in the elderly.
EFFECT OF PNEUMONIA ON ALL-CAUSE AND CAUSE SPECIFIC MORTALITY IN MIDDLE AGED AND OLDER PERSONS IN THE EPIC-NORFOLK COHORT

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Introduction
Pneumonia and lower respiratory tract infections are the third leading cause of death globally. Mortality is assessed at 30 days post diagnosis; however, there is increasing evidence that pneumonia affects long term mortality. We aimed to compare the short, intermediate and long-term mortality of people in middle and older age with pneumonia compared to matched controls.

Methods
Participants were drawn from the European Prospective Investigation into Cancer-Norfolk prospective population study. Participants were aged 40-79 years recruited between 1993 and 1998 with demographic, physiological and behavioural factors ascertained at a baseline examination. Participants were followed up until 2012 (total person year 23,780 years; mean 4.6 years; maximum 15.2 years). Pneumonia cases were identified from record linkage and death certificates (ICD 10 J12-J18). Each case was matched by age, sex and year of pneumonia occurrence with 4 controls without pneumonia that year. Cox-regression models were constructed to examine the all-cause, cardiovascular and respiratory mortality using controls as the reference category from the pneumonia event date. Short term, intermediate term and long term survival were defined as <30 days, ≥30 days <1 year and ≥1 year respectively.

Results
5184 participants (1064 cases of pneumonia and 4120 controls) were included in the study. 63.3% of cases and 61.5% of controls were over 65 years old at entry. All-cause, respiratory and cardiovascular mortality were significantly higher in cases compared to controls; hazards ratio (HR) were 6.03, 31.18 and 4.14 respectively (p<0.001 for all) after adjusting for age, sex, asthma, smoking status, pack years, systolic and diastolic blood pressure, diabetes, physical activity, waist-to-hip ratio, prevalent cardiovascular and respiratory diseases. The mortality was highest within first month; the corresponding HR were 15.17, 25.20 and 14.12, respectively (p<0.001 for all).

Conclusions
Pneumonia was associated with increased all-cause, respiratory-cause and cardiovascular-cause mortality in all time periods.
INVolving stroke patients and Carers in planning, and conducting a research study exploring the use of art Therapy in stroke rehabilitation

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Introduction
Involving stroke patients and carers in planning and designing a stroke research trial has several advantages in informing trial methodology, assessment tools, and consent procedures (Ali K 2006). Planning a trial exploring the use of a creative intervention such as Art Therapy (AT) in stroke warrants meaningful patient involvement.

Methods
The research team (4 stroke specialists, 2 stroke survivors, a stroke research nurse, two arts therapists, and a speech and language therapist) designed a study exploring AT in stroke rehabilitation. The study proposal was discussed in a semi-structured focus group meeting (meeting 1) with 4 stroke patients recently discharged from hospital explaining the AT intervention, proposed assessment tools, and follow up measures.

Following completion of the pilot study (6 patients were involved over 6 weeks) (Waller D et al 2013) feedback was obtained from all patients through face to face meetings (4 patients), and telephone interview (2 patients).

Results
Initial study planning meetings with the two stroke survivors shaped the AT intervention as a group interactive session rather than a 1-1 session, and added a qualitative narrative of the study. Meeting 1 helped select the assessment tools which were finally used (Hospital anxiety and depression scale and Therapy outcome measure) in the study.

Communications following completion of pilot study with the stroke survivors informed another 2-centre study proposal, and a current grant application.

Conclusions
Engaging stroke survivors in planning research trials is feasible, beneficial in selecting appropriate methodology and preparing grant applications.


abstract No. 160