Communications
to the
Spring Meeting
of the
British Geriatrics Society

16 - 18 May 2012
Venue Cymru
Llandudno

programme of
abstracts
THURSDAY, 17 MAY

PLATFORM PRESENTATIONS

<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Abstract Book Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session C</td>
<td>09:30 - 10:30</td>
<td>1-2</td>
</tr>
<tr>
<td>Session D</td>
<td>09:30 - 10:30</td>
<td>3-4</td>
</tr>
<tr>
<td>Session E</td>
<td>11:45 - 13:00</td>
<td>5</td>
</tr>
<tr>
<td>Session F</td>
<td>11:45 - 13:00</td>
<td>6</td>
</tr>
<tr>
<td>Session G</td>
<td>11:45 - 13:00</td>
<td>7-9</td>
</tr>
</tbody>
</table>

POSTER PRESENTATIONS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Abstract Book Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Effectiveness</td>
<td>10-52</td>
</tr>
<tr>
<td>Bone, Muscle and Rheumatology</td>
<td>53-54</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>55</td>
</tr>
<tr>
<td>Education/Training</td>
<td>56-58</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>59-60</td>
</tr>
<tr>
<td>Falls, Fractures and Trauma</td>
<td>61-65</td>
</tr>
<tr>
<td>Health Services Research</td>
<td>66-69</td>
</tr>
<tr>
<td>Law and Ethics</td>
<td>70</td>
</tr>
<tr>
<td>Other Medical Conditions</td>
<td>71-73</td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td>74</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>75-77</td>
</tr>
<tr>
<td>Psychiatry and Mental Health</td>
<td>78-79</td>
</tr>
<tr>
<td>Respiratory</td>
<td>80</td>
</tr>
<tr>
<td>Stroke</td>
<td>81-83</td>
</tr>
</tbody>
</table>

FRIDAY, 18 MAY

PLATFORM PRESENTATIONS

<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Abstract Book Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session J</td>
<td>09:00 - 10:30</td>
<td>84-85</td>
</tr>
<tr>
<td>Session K</td>
<td>09:30 - 10:30</td>
<td>86-91</td>
</tr>
</tbody>
</table>

THE INFORMATION PRINTED IN THIS PROGRAMME IS CORRECT AT THE TIME OF GOING TO PRESS.
<table>
<thead>
<tr>
<th>Author</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ager, S</td>
<td>78</td>
</tr>
<tr>
<td>Agyapong-Badu, S</td>
<td>54, 80</td>
</tr>
<tr>
<td>Ahsan, M</td>
<td>39</td>
</tr>
<tr>
<td>Aihie Sayer, A</td>
<td>85</td>
</tr>
<tr>
<td>Aird, L</td>
<td>54</td>
</tr>
<tr>
<td>Alani, H</td>
<td>15</td>
</tr>
<tr>
<td>Allen, V J</td>
<td>71</td>
</tr>
<tr>
<td>Alwis, L</td>
<td>30</td>
</tr>
<tr>
<td>Anjum, Q T H</td>
<td>58</td>
</tr>
<tr>
<td>Ashraf, S</td>
<td>24</td>
</tr>
<tr>
<td>Back, D</td>
<td>2</td>
</tr>
<tr>
<td>Bailey, L</td>
<td>54</td>
</tr>
<tr>
<td>Baoku, Y</td>
<td>51</td>
</tr>
<tr>
<td>Barber, J</td>
<td>42</td>
</tr>
<tr>
<td>Barne, M</td>
<td>10</td>
</tr>
<tr>
<td>Barnes, K</td>
<td>12</td>
</tr>
<tr>
<td>Barnes, N</td>
<td>80</td>
</tr>
<tr>
<td>Bartfai, G</td>
<td>8, 59</td>
</tr>
<tr>
<td>Basu, R</td>
<td>17</td>
</tr>
<tr>
<td>Baxter, J</td>
<td>49</td>
</tr>
<tr>
<td>Baxter, M</td>
<td>43</td>
</tr>
<tr>
<td>Bell, J</td>
<td>84</td>
</tr>
<tr>
<td>Bertfield, D</td>
<td>31</td>
</tr>
<tr>
<td>Beveridge, L A</td>
<td>67</td>
</tr>
<tr>
<td>Bhalla, V K</td>
<td>91</td>
</tr>
<tr>
<td>Bindusri, A</td>
<td>61</td>
</tr>
<tr>
<td>Biram, R W S</td>
<td>33, 38, 91</td>
</tr>
<tr>
<td>Birns, J</td>
<td>15</td>
</tr>
<tr>
<td>Bizrah, M</td>
<td>15</td>
</tr>
<tr>
<td>Blundell, A G</td>
<td>5</td>
</tr>
<tr>
<td>Boonen, S</td>
<td>8, 59</td>
</tr>
<tr>
<td>Bostock, F</td>
<td>29</td>
</tr>
<tr>
<td>Bramble, J</td>
<td>44</td>
</tr>
<tr>
<td>Brayne, C</td>
<td>1</td>
</tr>
<tr>
<td>Briant, L</td>
<td>37</td>
</tr>
<tr>
<td>Buckley, H</td>
<td>18</td>
</tr>
<tr>
<td>Butchart, C</td>
<td>89</td>
</tr>
<tr>
<td>Butler, J</td>
<td>70</td>
</tr>
<tr>
<td>Butler, M J</td>
<td>33</td>
</tr>
<tr>
<td>Butt, J E C</td>
<td>84</td>
</tr>
<tr>
<td>Cam, S</td>
<td>17</td>
</tr>
<tr>
<td>Campbell, P M F</td>
<td>50</td>
</tr>
<tr>
<td>Carey, I</td>
<td>37</td>
</tr>
<tr>
<td>Carmichael, C</td>
<td>84</td>
</tr>
<tr>
<td>Carter, J L</td>
<td>86</td>
</tr>
<tr>
<td>Casanueva, F F</td>
<td>8, 59</td>
</tr>
<tr>
<td>Cattell, V</td>
<td>65</td>
</tr>
<tr>
<td>Chair, S Y</td>
<td>62</td>
</tr>
<tr>
<td>Chatterjee, D</td>
<td>87</td>
</tr>
<tr>
<td>Chattopadhyay, I</td>
<td>11</td>
</tr>
<tr>
<td>Chattopadhyay, T</td>
<td>24</td>
</tr>
<tr>
<td>Cheater, F</td>
<td>68</td>
</tr>
<tr>
<td>Chen, S</td>
<td>18</td>
</tr>
<tr>
<td>Cherubini, A</td>
<td>6</td>
</tr>
<tr>
<td>Chi, I</td>
<td>47</td>
</tr>
<tr>
<td>Chua, E</td>
<td>51, 53</td>
</tr>
<tr>
<td>Clarke, R</td>
<td>6</td>
</tr>
<tr>
<td>Conroy, S P</td>
<td>5</td>
</tr>
<tr>
<td>Cooper, C</td>
<td>85</td>
</tr>
<tr>
<td>Cotter, P E</td>
<td>91</td>
</tr>
<tr>
<td>Crabtree, L</td>
<td>23</td>
</tr>
<tr>
<td>Cracknell, A</td>
<td>22</td>
</tr>
<tr>
<td>Dalton, R N</td>
<td>86</td>
</tr>
<tr>
<td>D'Arcy, J</td>
<td>30</td>
</tr>
<tr>
<td>Dare, A</td>
<td>16</td>
</tr>
<tr>
<td>Datta, A</td>
<td>24</td>
</tr>
<tr>
<td>Datta-Chaudhuri, M</td>
<td>17, 24</td>
</tr>
<tr>
<td>Daunt, L A</td>
<td>5</td>
</tr>
<tr>
<td>Davies, R</td>
<td>35</td>
</tr>
<tr>
<td>Davis, D H J</td>
<td>1</td>
</tr>
<tr>
<td>Delaney, M P</td>
<td>86</td>
</tr>
<tr>
<td>Deo, K</td>
<td>23</td>
</tr>
<tr>
<td>Dewhurst, F</td>
<td>7</td>
</tr>
<tr>
<td>Dewhurst, M</td>
<td>7</td>
</tr>
<tr>
<td>Dhakam, Z</td>
<td>64</td>
</tr>
<tr>
<td>Diver, J M</td>
<td>38</td>
</tr>
<tr>
<td>Dockery, F</td>
<td>2</td>
</tr>
<tr>
<td>Doherty, D</td>
<td>83, 88</td>
</tr>
<tr>
<td>Doran, H</td>
<td>42</td>
</tr>
<tr>
<td>Downes, T</td>
<td>40</td>
</tr>
<tr>
<td>Durkin, C J</td>
<td>82</td>
</tr>
<tr>
<td>Dutta, R</td>
<td>48</td>
</tr>
<tr>
<td>Eaglestone, G</td>
<td>86</td>
</tr>
<tr>
<td>Earnshaw, A</td>
<td>44</td>
</tr>
<tr>
<td>Eeles, E M</td>
<td>41, 72</td>
</tr>
<tr>
<td>Elia, M</td>
<td>85</td>
</tr>
<tr>
<td>Ernst, T</td>
<td>18</td>
</tr>
<tr>
<td>Evans, L</td>
<td>12</td>
</tr>
<tr>
<td>Author</td>
<td>Page Numbers</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Fang, X</td>
<td>73</td>
</tr>
<tr>
<td>Farmer, C K T</td>
<td>86</td>
</tr>
<tr>
<td>Fergusson, N</td>
<td>39</td>
</tr>
<tr>
<td>Fernando, P</td>
<td>12</td>
</tr>
<tr>
<td>Ferrucci, L</td>
<td>6</td>
</tr>
<tr>
<td>Finn, J D</td>
<td>8, 59</td>
</tr>
<tr>
<td>Fisher, R</td>
<td>30</td>
</tr>
<tr>
<td>Fleet, J</td>
<td>2, 18</td>
</tr>
<tr>
<td>Folwell, A</td>
<td>20</td>
</tr>
<tr>
<td>Forti, G</td>
<td>8, 59</td>
</tr>
<tr>
<td>Foster, J A H</td>
<td>84</td>
</tr>
<tr>
<td>Fox, J</td>
<td>27, 42</td>
</tr>
<tr>
<td>Fraser, K</td>
<td>78</td>
</tr>
<tr>
<td>George, J</td>
<td>67</td>
</tr>
<tr>
<td>Gibson, W</td>
<td>40</td>
</tr>
<tr>
<td>Gielien, E</td>
<td>59</td>
</tr>
<tr>
<td>Gilmartin, D</td>
<td>75, 76</td>
</tr>
<tr>
<td>Giwercman, A</td>
<td>8, 59</td>
</tr>
<tr>
<td>Gladman, J R F</td>
<td>5, 26</td>
</tr>
<tr>
<td>Godfrey, M</td>
<td>68</td>
</tr>
<tr>
<td>Goff, A</td>
<td>84</td>
</tr>
<tr>
<td>Goodwin, V</td>
<td>3, 4</td>
</tr>
<tr>
<td>Goodwin, V A</td>
<td>60, 77, 90</td>
</tr>
<tr>
<td>Gordon, A L</td>
<td>5</td>
</tr>
<tr>
<td>Gosling, D</td>
<td>29</td>
</tr>
<tr>
<td>Gosney, M A</td>
<td>71</td>
</tr>
<tr>
<td>Graham, F J</td>
<td>32</td>
</tr>
<tr>
<td>Gray, W K</td>
<td>7</td>
</tr>
<tr>
<td>Green, A</td>
<td>20</td>
</tr>
<tr>
<td>Green, J</td>
<td>68</td>
</tr>
<tr>
<td>Gunawardena, I</td>
<td>35</td>
</tr>
<tr>
<td>Haden, A R</td>
<td>70</td>
</tr>
<tr>
<td>Haithem, E</td>
<td>17</td>
</tr>
<tr>
<td>Han, T S</td>
<td>8, 59</td>
</tr>
<tr>
<td>Hancock, J</td>
<td>84</td>
</tr>
<tr>
<td>Harari, D</td>
<td>2</td>
</tr>
<tr>
<td>Harriman, P</td>
<td>40</td>
</tr>
<tr>
<td>Harris, S</td>
<td>12</td>
</tr>
<tr>
<td>Harris, W</td>
<td>58</td>
</tr>
<tr>
<td>Harwood, R H</td>
<td>26</td>
</tr>
<tr>
<td>Hassall, I</td>
<td>13</td>
</tr>
<tr>
<td>Heade, S</td>
<td>41</td>
</tr>
<tr>
<td>Henley, W E</td>
<td>6</td>
</tr>
<tr>
<td>Hetherington, T</td>
<td>56</td>
</tr>
<tr>
<td>Hill, K</td>
<td>81</td>
</tr>
<tr>
<td>Holden, C</td>
<td>35</td>
</tr>
<tr>
<td>Holmes, D</td>
<td>21</td>
</tr>
<tr>
<td>Holt, C</td>
<td>30</td>
</tr>
<tr>
<td>Hooper, L</td>
<td>83, 88</td>
</tr>
<tr>
<td>Hopper, A</td>
<td>37</td>
</tr>
<tr>
<td>Howlett, W</td>
<td>7</td>
</tr>
<tr>
<td>Hubbard, R E</td>
<td>3, 4, 41, 77, 60, 72, 90</td>
</tr>
<tr>
<td>Huhtaniemi, I T</td>
<td>8, 59</td>
</tr>
<tr>
<td>Iliffe, S</td>
<td>87</td>
</tr>
<tr>
<td>Inouye, S K</td>
<td>68</td>
</tr>
<tr>
<td>Irving, J</td>
<td>86</td>
</tr>
<tr>
<td>Jaafar, A</td>
<td>78</td>
</tr>
<tr>
<td>Jackson, K</td>
<td>55</td>
</tr>
<tr>
<td>Jackson, T A</td>
<td>79</td>
</tr>
<tr>
<td>James, C M</td>
<td>36</td>
</tr>
<tr>
<td>James, M</td>
<td>46</td>
</tr>
<tr>
<td>Jameson, K A</td>
<td>85</td>
</tr>
<tr>
<td>Jaye, P</td>
<td>56</td>
</tr>
<tr>
<td>Jensen, H</td>
<td>56</td>
</tr>
<tr>
<td>Jewell, A</td>
<td>65</td>
</tr>
<tr>
<td>Jones, S</td>
<td>39</td>
</tr>
<tr>
<td>Juby, A G</td>
<td>45</td>
</tr>
<tr>
<td>Kafri, M W</td>
<td>83, 88</td>
</tr>
<tr>
<td>Kailani, O</td>
<td>15</td>
</tr>
<tr>
<td>Kearney, F</td>
<td>26</td>
</tr>
<tr>
<td>Keedwell, E C</td>
<td>84</td>
</tr>
<tr>
<td>Kerr, A D</td>
<td>63</td>
</tr>
<tr>
<td>Kessel, B</td>
<td>74</td>
</tr>
<tr>
<td>Khonje, M</td>
<td>29</td>
</tr>
<tr>
<td>Kidd, A</td>
<td>89</td>
</tr>
<tr>
<td>Kilbride, H S</td>
<td>86</td>
</tr>
<tr>
<td>Kirk, C</td>
<td>66</td>
</tr>
<tr>
<td>Knight, S</td>
<td>86</td>
</tr>
<tr>
<td>Kos, K</td>
<td>6</td>
</tr>
<tr>
<td>Kula, K</td>
<td>8, 59</td>
</tr>
<tr>
<td>Lamb, E J</td>
<td>86</td>
</tr>
<tr>
<td>Lang, I</td>
<td>60, 90</td>
</tr>
<tr>
<td>Lang, I A</td>
<td>3, 4, 6, 77</td>
</tr>
<tr>
<td>Langa, K M</td>
<td>6</td>
</tr>
<tr>
<td>Lazarus, G</td>
<td>41</td>
</tr>
<tr>
<td>Lean, M E J</td>
<td>8, 59</td>
</tr>
<tr>
<td>Lee, C</td>
<td>25</td>
</tr>
<tr>
<td>Lee, D M</td>
<td>8, 59</td>
</tr>
<tr>
<td>Author</td>
<td>Page(s)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Lee, J S</td>
<td>28</td>
</tr>
<tr>
<td>Leung, A Y M</td>
<td>47</td>
</tr>
<tr>
<td>Leung, D Y P</td>
<td>47, 62</td>
</tr>
<tr>
<td>Levy, S</td>
<td>53</td>
</tr>
<tr>
<td>Lincoln, N</td>
<td>26</td>
</tr>
<tr>
<td>Lisk, R</td>
<td>43, 64</td>
</tr>
<tr>
<td>Liu, B</td>
<td>45</td>
</tr>
<tr>
<td>Llewellyn, D</td>
<td>3, 4, 6, 90</td>
</tr>
<tr>
<td>Llewellyn, D J</td>
<td>60, 77</td>
</tr>
<tr>
<td>Longdon, A</td>
<td>7</td>
</tr>
<tr>
<td>Lunt, C J</td>
<td>89</td>
</tr>
<tr>
<td>MacLullich, A M J</td>
<td>1</td>
</tr>
<tr>
<td>MacNamara, A</td>
<td>39</td>
</tr>
<tr>
<td>Mahmood, R</td>
<td>64</td>
</tr>
<tr>
<td>Makin, S</td>
<td>34</td>
</tr>
<tr>
<td>Marinescu, I</td>
<td>63</td>
</tr>
<tr>
<td>Marion, J</td>
<td>27</td>
</tr>
<tr>
<td>Marrett, H</td>
<td>20</td>
</tr>
<tr>
<td>Martin, F</td>
<td>18</td>
</tr>
<tr>
<td>Masud, T</td>
<td>26</td>
</tr>
<tr>
<td>Matthews, F E</td>
<td>1</td>
</tr>
<tr>
<td>Mayne, D J F</td>
<td>78</td>
</tr>
<tr>
<td>McCusker, L</td>
<td>31</td>
</tr>
<tr>
<td>McLeod-Kennedy, L A G</td>
<td>32</td>
</tr>
<tr>
<td>McMillan, H</td>
<td>32</td>
</tr>
<tr>
<td>McMurdno, M E T</td>
<td>67, 69</td>
</tr>
<tr>
<td>Medhi, M</td>
<td>78</td>
</tr>
<tr>
<td>Mehat, M S</td>
<td>48</td>
</tr>
<tr>
<td>Melzer</td>
<td>6</td>
</tr>
<tr>
<td>Methven, L</td>
<td>71</td>
</tr>
<tr>
<td>Michael, A</td>
<td>61</td>
</tr>
<tr>
<td>Michell, S L I</td>
<td>84</td>
</tr>
<tr>
<td>Mishir, Q</td>
<td>71</td>
</tr>
<tr>
<td>Mitnitiski, A</td>
<td>9, 72, 73</td>
</tr>
<tr>
<td>Mohamed, B</td>
<td>12</td>
</tr>
<tr>
<td>Morgan, C</td>
<td>84</td>
</tr>
<tr>
<td>Morris, M</td>
<td>37</td>
</tr>
<tr>
<td>Morris, R</td>
<td>12</td>
</tr>
<tr>
<td>Morse, R E</td>
<td>41</td>
</tr>
<tr>
<td>Moussa, G</td>
<td>48</td>
</tr>
<tr>
<td>Mulligan, P</td>
<td>56</td>
</tr>
<tr>
<td>Munyombokwe, T</td>
<td>81</td>
</tr>
<tr>
<td>Murison, J</td>
<td>41</td>
</tr>
<tr>
<td>Musgrave, R</td>
<td>21</td>
</tr>
<tr>
<td>Musonda, P</td>
<td>89</td>
</tr>
<tr>
<td>Myint, P K</td>
<td>83, 88, 89</td>
</tr>
<tr>
<td>Nagaratnam, K</td>
<td>14, 82</td>
</tr>
<tr>
<td>Nari, R</td>
<td>43</td>
</tr>
<tr>
<td>Neilson, J</td>
<td>61</td>
</tr>
<tr>
<td>Ngoma, P</td>
<td>24</td>
</tr>
<tr>
<td>Nicholas, J</td>
<td>78</td>
</tr>
<tr>
<td>Nicholl, C G</td>
<td>30</td>
</tr>
<tr>
<td>Nicolson, P</td>
<td>79</td>
</tr>
<tr>
<td>O'Connell, M D L</td>
<td>8, 59</td>
</tr>
<tr>
<td>O'Mahony, D</td>
<td>75, 76</td>
</tr>
<tr>
<td>Onda, S</td>
<td>13</td>
</tr>
<tr>
<td>O'Neill, T W</td>
<td>8, 59</td>
</tr>
<tr>
<td>Ong, T</td>
<td>35</td>
</tr>
<tr>
<td>Oomeer, S</td>
<td>11</td>
</tr>
<tr>
<td>Opare, N</td>
<td>15</td>
</tr>
<tr>
<td>Orega, G</td>
<td>7</td>
</tr>
<tr>
<td>O'Riordan, S E</td>
<td>86</td>
</tr>
<tr>
<td>O'Toole, R</td>
<td>50</td>
</tr>
<tr>
<td>Pai, Y</td>
<td>89</td>
</tr>
<tr>
<td>Parke, B</td>
<td>45</td>
</tr>
<tr>
<td>Pattison, T</td>
<td>29</td>
</tr>
<tr>
<td>Pendleton, N</td>
<td>8, 59</td>
</tr>
<tr>
<td>Perini, A</td>
<td>36</td>
</tr>
<tr>
<td>Pilgrim, A L</td>
<td>85</td>
</tr>
<tr>
<td>Polvikoski, T</td>
<td>1</td>
</tr>
<tr>
<td>Potter, J F</td>
<td>83, 88, 89</td>
</tr>
<tr>
<td>Prakash, K</td>
<td>17</td>
</tr>
<tr>
<td>Puffett, A J</td>
<td>36, 46</td>
</tr>
<tr>
<td>Punab, M</td>
<td>8, 59</td>
</tr>
<tr>
<td>Pye, S R</td>
<td>8, 59</td>
</tr>
<tr>
<td>Quraishi, H</td>
<td>15</td>
</tr>
<tr>
<td>Rajeevan, T</td>
<td>25</td>
</tr>
<tr>
<td>Ramage, L</td>
<td>67, 69</td>
</tr>
<tr>
<td>Ravindrarajah, R</td>
<td>8, 59</td>
</tr>
<tr>
<td>Reynish, E</td>
<td>52</td>
</tr>
<tr>
<td>Roberts, H C</td>
<td>85</td>
</tr>
<tr>
<td>Robinson, S M</td>
<td>85</td>
</tr>
<tr>
<td>Rockwood, K</td>
<td>9, 72, 73</td>
</tr>
<tr>
<td>Rockwood, M R H</td>
<td>72</td>
</tr>
<tr>
<td>Ross, A</td>
<td>56</td>
</tr>
<tr>
<td>Saharia, R</td>
<td>20</td>
</tr>
<tr>
<td>Sajjad, K</td>
<td>11</td>
</tr>
<tr>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Sakoana, R</td>
<td>10</td>
</tr>
<tr>
<td>Sampson, P</td>
<td>12</td>
</tr>
<tr>
<td>Samuel, D</td>
<td>54, 80</td>
</tr>
<tr>
<td>Schiff, R</td>
<td>56</td>
</tr>
<tr>
<td>Seetharaman, S K</td>
<td>51</td>
</tr>
<tr>
<td>Sekhar, A</td>
<td>46</td>
</tr>
<tr>
<td>Shah, M</td>
<td>53</td>
</tr>
<tr>
<td>Shandilya, S</td>
<td>11</td>
</tr>
<tr>
<td>Sheehan, B</td>
<td>79</td>
</tr>
<tr>
<td>Sheridan, R P</td>
<td>84</td>
</tr>
<tr>
<td>Shi, J</td>
<td>73</td>
</tr>
<tr>
<td>Shipway, D J H</td>
<td>53</td>
</tr>
<tr>
<td>Shouls, S</td>
<td>37</td>
</tr>
<tr>
<td>Silvester, K</td>
<td>40</td>
</tr>
<tr>
<td>Singh, N</td>
<td>10</td>
</tr>
<tr>
<td>Skevington, S</td>
<td>63</td>
</tr>
<tr>
<td>Skinner, J</td>
<td>89</td>
</tr>
<tr>
<td>Smith, J</td>
<td>68</td>
</tr>
<tr>
<td>Soiza, R L</td>
<td>89</td>
</tr>
<tr>
<td>Sommerville, P</td>
<td>16</td>
</tr>
<tr>
<td>Song, X</td>
<td>9, 73</td>
</tr>
<tr>
<td>Spiers, L</td>
<td>14, 82</td>
</tr>
<tr>
<td>Sriranjan, S</td>
<td>16</td>
</tr>
<tr>
<td>Stevens, P E</td>
<td>86</td>
</tr>
<tr>
<td>Stokes, M</td>
<td>54, 80</td>
</tr>
<tr>
<td>Sulkava, R</td>
<td>1</td>
</tr>
<tr>
<td>Sykes, R</td>
<td>27</td>
</tr>
<tr>
<td><strong>Tajar, A</strong></td>
<td>59</td>
</tr>
<tr>
<td>Tamimi, A</td>
<td>15</td>
</tr>
<tr>
<td>Tan, S C</td>
<td>69</td>
</tr>
<tr>
<td>Tang, Z</td>
<td>73</td>
</tr>
<tr>
<td>Teale, E A</td>
<td>81</td>
</tr>
<tr>
<td>Teh, M</td>
<td>55</td>
</tr>
<tr>
<td>Terrera, G</td>
<td>1</td>
</tr>
<tr>
<td>Tevendale, E</td>
<td>49</td>
</tr>
<tr>
<td>Thomson, A</td>
<td>27, 57</td>
</tr>
<tr>
<td>Thum, L P</td>
<td>53</td>
</tr>
<tr>
<td>Tsikritzi, R</td>
<td>71</td>
</tr>
<tr>
<td>Tu, Y K</td>
<td>81</td>
</tr>
<tr>
<td>Turpin, S J</td>
<td>52</td>
</tr>
<tr>
<td><strong>Van der Veen, E</strong></td>
<td>28</td>
</tr>
<tr>
<td>Vanderschueren, D</td>
<td>8, 59</td>
</tr>
<tr>
<td>Vernon, M</td>
<td>29</td>
</tr>
<tr>
<td><strong>Wagg, A</strong></td>
<td>66</td>
</tr>
<tr>
<td>Wahed, M</td>
<td>16</td>
</tr>
<tr>
<td>Walker, R W</td>
<td>7</td>
</tr>
<tr>
<td>Wallace, J</td>
<td>57</td>
</tr>
<tr>
<td>Wallis, P J</td>
<td>39</td>
</tr>
<tr>
<td>Wallis, S J</td>
<td>91</td>
</tr>
<tr>
<td>Walsh, B</td>
<td>80</td>
</tr>
<tr>
<td>Wang, C</td>
<td>73</td>
</tr>
<tr>
<td>Wang, Q</td>
<td>51, 53</td>
</tr>
<tr>
<td>Wardlaw, J M</td>
<td>34</td>
</tr>
<tr>
<td>Wardle, A</td>
<td>24</td>
</tr>
<tr>
<td>Warner, M</td>
<td>54</td>
</tr>
<tr>
<td>Warren, N</td>
<td>7</td>
</tr>
<tr>
<td>West, R</td>
<td>81</td>
</tr>
<tr>
<td>Wheldon, A</td>
<td>22</td>
</tr>
<tr>
<td>Wilkinson, I</td>
<td>10</td>
</tr>
<tr>
<td>Williams, E J</td>
<td>74</td>
</tr>
<tr>
<td>Williams, R</td>
<td>22</td>
</tr>
<tr>
<td>Wilson, A</td>
<td>88</td>
</tr>
<tr>
<td>Wilson, A H</td>
<td>89</td>
</tr>
<tr>
<td>Wiltshire, H</td>
<td>41</td>
</tr>
<tr>
<td>Witham, M D</td>
<td>67, 69</td>
</tr>
<tr>
<td>Wong, E M</td>
<td>62</td>
</tr>
<tr>
<td>Wu, F C W</td>
<td>8, 59</td>
</tr>
<tr>
<td><strong>Yeo, J L</strong></td>
<td>29</td>
</tr>
<tr>
<td>Yeong, K</td>
<td>43, 64</td>
</tr>
<tr>
<td>Young, J</td>
<td>81</td>
</tr>
<tr>
<td>Young, J B</td>
<td>68</td>
</tr>
<tr>
<td>Yu, P</td>
<td>73</td>
</tr>
</tbody>
</table>
## PLATFORM PRESENTATIONS

<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Abstract Book Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session C</td>
<td>09:30 - 10:30</td>
<td>1-2</td>
</tr>
<tr>
<td>Session D</td>
<td>09:30 - 10:30</td>
<td>3-4</td>
</tr>
<tr>
<td>Session E</td>
<td>11:45 - 13:00</td>
<td>5</td>
</tr>
<tr>
<td>Session F</td>
<td>11:45 - 13:00</td>
<td>6</td>
</tr>
<tr>
<td>Session G</td>
<td>11:45 - 13:00</td>
<td>7-9</td>
</tr>
</tbody>
</table>
DEMENTIA AFTER DELIRIUM: DO THE PATHOLOGIES DIFFER?

D H J Davis¹, G Terrera², T Polvikoski², R Sulkava⁴, F E Matthews², A M J MacLullich⁵, C Brayne¹

¹. Department of Public Health and Primary Care, University of Cambridge, 2. MRC Biostatistics Unit, Cambridge, 3. Institute for Ageing and Health, University of Newcastle, 4. University of Kuopio, Finland, 5. Edinburgh Delirium Research Group, University of Edinburgh

Introduction
There has been interest in the relationship between delirium and dementia, though the majority of research has been in hospital series. In the context of a population-based cohort study, we asked two questions: First, is delirium associated with increased dementia risk? Second, is any increased risk of dementia associated with delirium mediated by markers of pathology known to be associated with dementia?

Method
The Vantaa study comprised 92% (n=553) of the population aged ≥85 years followed up over ten years with clinical and cognitive examinations. History of delirium was recorded at each interview.

Brain autopsy was available in 52%.

The association between delirium and dichotomous outcomes (dementia, worsening dementia severity, mortality) was estimated in regression models. Random-effects models were used to examine the trajectory of MMSE change. The relationship between dementia and common neuropathological markers (Braak stage, neuritic amyloid, apolipoprotein ε4, vascular lesions, pathology in substantia nigra) was modelled and assessed stratified by history of delirium.

Results
Delirium was associated with dementia (OR 8.7; 95%CI 2.0-33); worsening of dementia severity (OR, 3.1; 1.5-6.5); and increased mortality (hazard ratio, 1.6; 1.2-2.2).

MMSE change was best modelled as a curved trajectory. Lower baseline MMSE was associated with delirium, age, and functional status. In addition, delirium had an adverse effect on rate of cognitive decline.

The relationship between dementia and pathology was different when stratified by delirium history. In people with dementia, but no delirium, all pathologies were significantly associated with dementia. However, when delirium was associated with dementia, no statistical relationship between dementia and these markers was evident.

Discussion
Taken together, these results suggest that delirium is a risk factor for cognitive decline and dementia but that the pathological substrates for these are not explained by typical dementia pathology in this sample.
POST-OPERATIVE DELIRIUM IS ASSOCIATED WITH INCREASED RISK OF EMERGENCY RE-ATTENDANCE FOLLOWING HIP FRACTURE

J Fleet, D Harari, D Back, F Dockery

Department of Ageing & Health, St. Thomas’ Hospital, Westminster Bridge Road, London

Introduction

Emergency re-attendances following hospital discharge after hip fracture are common, with older age, dementia and co-morbidities being the main factors associated from studies. Given the recent proposals to link readmission rates with hospital funding, we wanted to look at potentially modifiable factors associated with re-attendances rates in order to consider a strategy to improve.

Methods

We included 735 consecutive hip fractures discharged alive from this hospital. Co-morbidities and post-operative complications were collected prospectively. Telephone clinics and hospital records were used for follow-up.

Results

Fifteen were lost to follow up. Mean age: 77.8±12.9 years, (median 81y) of whom 33% were male. 193 (26%) re-attended A&E within 120 days of whom 140 were readmitted. 110 (57%) re-attendances occurred within 30 days. Post-op delirium occurred in 16.5%. Delirium was the only post-operative complication independently associated with both 30d and 120d emergency re-presentation (AOR 1.742; 95% CI: 1.052-2.885, p=.031 for 30d, and AOR 1.678; 95% CI: 1.054-2.672, p=.029 for 120d). Other factors independently associated with emergency re-attendance at 30d and 120d were age >80y, ASA grade≥3, dementia and longer length of stay (>median of 16d). Post-op cardio-respiratory or septic complications were no longer associated on adjustment. COPD, a fall on the ward post-operatively, and discharge to a rehabilitation unit were additionally associated with increased likelihood of 120d (but not 30d) emergency re-presentation, whereas a cancer diagnosis was associated with reduced likelihood of emergency representation at 120d, possibly due to better community support services for this group.

Conclusions

In addition to older age, dementia and co-morbidities, post-operative delirium is associated with a higher likelihood of early and late emergency re-presentation following hip fracture, more so than all other post-operative complications. This suggests that delirium, a potentially modifiable factor, warrants specific management strategies as in-patient and early post-discharge, in order to reduce subsequent re-attendance rates.
HEALTHY BEHAVIOURS IN MIDDLE AGE: LONG-TERM CONSEQUENCES FOR FUNCTIONING AND MORTALITY

I A Lang¹,², V Goodwin¹, R E Hubbard³, D Llewellyn⁴

1. PenCLAHRC, Peninsula College of Medicine and Dentistry, Exeter, 2. NHS Devon, Exeter 3. Centre for Research in Geriatric Medicine, University of Queensland, Brisbane, 4. Epidemiology and Public Health Group, Peninsula College of Medicine and Dentistry

Introduction
Physical activity, healthy body weight, smoking, and alcohol consumption are related to mortality and physical function but their combined long-term effect is unknown. We examined the individual and combined influence of these risk factors on mortality and subjective and measured function in middle-aged adults followed for 18 years.

Methods
Data came from the Health and Retirement Study (HRS), a biennial, longitudinal, nationally representative survey of older adults. 11,597 participants aged 51 to 61 were followed from study enrolment for an 18-year period. A health behaviour score was calculated with one point for each behaviour: moderate physical activity three times per week; BMI 20 to 25; alcohol consumption less than 7 drinks/week; non-smoking. Outcomes were all-cause mortality, problems with activities of daily living (ADLs), lung function, grip strength, and walk speed. Adjusted logistic and linear regression models were used to examine the relationships between health behaviours and outcomes separately by gender.

Results
For all outcomes except grip strength there was a dose-response relationship between healthy behaviour score and outcomes. For example, in men with four healthy behaviours and no baseline ADL problems at 18-year follow-up 78.4% had no ADL problems, 6.6% had ADL problems, and 15.0% had died. In men with no health behaviours and no ADL problems at baseline, at follow-up 35.1% had no ADL problems, 8.8% had ADL problems, and 56.1% had died. Results in women were comparable but ADL differences were more marked. Number of healthy behaviours was related to follow-up walk speed and lung function but not grip strength.

Conclusions
Simple differences in lifestyle behaviours in middle age are associated with major differences in functioning and mortality risks as people progress into old age. Effective health promotion in these age groups could bring substantial health benefits.
FRAILTY AND OBESITY IN LATER LIFE

R E Hubbard¹, I A Lang², V Goodwin², D J Llewellyn²

1. Centre for Research in Geriatric Medicine, The University of Queensland, Princess Alexandra Hospital, Brisbane, Queensland, 2. Public Health and Epidemiology Group, Peninsula Medical School, University of Exeter, Exeter, England

Introduction
Frailty is sometimes conceptualised as a wasting disorder involving weight loss but there is some evidence obesity in later life is associated with higher levels of disability. In this study we explored the longitudinal relationship between frailty and obesity in a cohort of older people.

Methods
Data were from 5,602 community-dwelling adults aged 50+ who participated in the English Longitudinal Study of Ageing in 2004 and 2008. Frailty was assessed using an index of accumulated deficits (Frailty Index). BMI was divided into five categories (below 20, 20-25, 25-30, 30-35, 35 plus) and waist circumference 88 cm or more (in women) and 102 cm or more (in men) was defined as high. Analyses were adjusted for sex, age, wealth, education, and smoking.

Results
The BMI-frailty association was U-shaped at baseline. Over four years, those in the highest BMI category were significantly more likely to experience a further increase in frailty compared to those of recommended weight. This effect was more pronounced in younger age groups: for example, comparing recommended weight to the highest weight category the adjusted odds ratio for experiencing a frailty decline of ten points or more (out of 100) was 3.32 (95% CI 1.71 to 6.43) in those aged 50 to 64 at baseline, 1.82 (95% CI 1.02 to 3.24) in those aged 65 to 79, and not significantly different in those aged 80+.

Conclusions
Obese older adults experience higher levels of frailty than those of recommended weight and are at elevated risk of further decline.
COMPUTER AIDED LEARNING (CAL) IMPROVES EDUCATION IN GERIATRIC MEDICINE

L A Daunt¹, A G Blundell¹, A L Gordon¹, S P Conroy², J R F Gladman¹

¹. Nottingham University Hospitals NHS Trust, Queen’s Medical Centre, Derby Road, Nottingham, ². Clinical Sciences Building, Leicester Royal Infirmary, Leicester

Introduction
Computer aided learning (CAL) is increasingly used in medical education. It is well received by students, but its effects on learning are uncertain. We introduced a new teaching package on falls and continence, and evaluated its effect on student learning by assessing their performance at final examination.

Methods
Fifty minute didactic lectures on falls and continence were replaced by CAL packages and forty minute interactive sessions, where students used knowledge from the CAL to discuss clinical scenarios. Cohorts in the same academic year, taught immediately before and after the change to teaching, were assessed. Six multiple choice questions related to falls and incontinence were repeated across examination cohorts, pre- and post- introduction of CAL. A question about stroke was also repeated to provide control data on cohort differences. The maximum total score was 11 for the falls and continence questions, and a single best-of-five question on stroke received a maximum score of 1. Data were analysed using Mann-Whitney U for the falls and continence questions, and Chi-squared for the stroke question.

Results
There were 168 students in the pre-CAL cohort assessed in December 2010, and 162 students in the post-CAL cohort in May 2011. The median pre- and post-CAL scores were 9 (IQR 1, range 2-11) and 9 (IQR 2, range 5-11) respectively. Although medians were the same, the distribution of scores was significantly better post intervention (p<0.01). This improvement was not seen for the control question (p=0.05).

Conclusions
The introduction of CAL for falls and continence resulted in better examination performance, which was not seen in the control topic. As CAL is standardised, supports self directed learning, can be shared and is known to be acceptable to students, our findings further support use of this method for teaching.
PLASMA LEPTIN LEVELS AND COGNITIVE DECLINE IN OLDER ADULTS

D J Llewellyn¹, K Kos¹, K M Langa², L Ferrucci³, W E Henley¹, I A Lang¹, R Clarke⁴, A Cherubini⁵, D Melzer¹

1. Peninsula College of Medicine and Dentistry, UK, 2. University of Michigan, USA, 3. National Institute on Aging, USA, 4. University of Oxford, UK, 5. Perugia University Hospital and Medical School, Italy

Introduction
The effects of excess adipose tissue on the brain may be mediated by recently discovered adipokines that cross the blood brain barrier and whose functions have yet to be fully established. Adipokines may influence the risk of conditions related to dementia such as atherosclerosis and stroke through inflammatory mechanisms. However, recent large population-based studies suggest that the proinflammatory adipokine leptin may paradoxically be neuroprotective.

Methods
We determined whether serum leptin levels were associated with the risk of substantial cognitive decline in the InCHIANTI study conducted in Italy between 1998 and 2009 with follow-up assessments every 3 years. 808 adults aged 65 years or more completed interviews, cognitive assessments, medical examinations, and had valid serum leptin measurements. Cognitive decline was assessed using the Mini-Mental State Examination (MMSE; substantial decline defined as ≥5 points) and the Trail Making Tests A and B (substantial decline defined as worst 10% of the distribution of decline or if testing discontinued).

Results
Higher leptin levels were associated with a reduced risk of substantial cognitive decline on the MMSE in multivariate adjusted models (relative risk [RR] per 1-SD increment in sex-standardized log leptin was 0.81 [95% CI=0.68-0.95]). There was no statistically significant interaction between leptin levels and obesity (P=0.21) or baseline cognition (P=0.50). Elevated leptin was also associated with a lower risk of substantial decline on both Trail Making Tests A (RR=0.76, 95% CI=0.62-0.93) and B (RR=0.89, 95% CI=0.78-1.00).

Conclusions
High serum leptin levels are associated with a reduced risk of substantial cognitive decline in the elderly over a nine year period. Further studies are therefore needed to investigate whether leptin has therapeutic potential for the prevention of cognitive decline and incident dementia in older adults.
THE PREVALENCE OF NEUROLOGICAL DISORDERS IN PEOPLE AGED 70 YEARS AND OVER IN THE HAI DISTRICT OF NORTHERN TANZANIA

F Dewhurst, M Dewhurst, W K Gray, W Howlett, N Warren, G Orega, A Longdon, R W Walker

1. Northumbria Healthcare NHS Foundation Trust, North Tyneside General Hospital, North Shields, UK, 2. Kilimanjaro Christian Medical Centre, Moshi, Tanzania, 3. Newcastle-upon-Tyne Hospitals NHS Foundation Trust, Royal Victoria Infirmary, Newcastle-upon-Tyne, UK, 4. Institute of Health and Society, Newcastle University, Newcastle upon Tyne, UK

Introduction
There are few data on neurological disorder prevalence from developing countries, particularly sub-Saharan Africa (SSA), and none specific to the African elderly despite a need highlighted by the World Health Organisation (WHO) (WHO, www.who.int/mental_health/neurology/neurodiso/en/index.html, 2006).

Methods
We determined the prevalence of neurological disorders in those aged 70+ in a rural African community, described their sub-groups, level of diagnosis and treatment and associated disability. A cross-sectional two-phased community epidemiological survey was performed in the Hai district demographic surveillance site in northern Tanzania (n=161,119). 2232 participants (1/4 of the 70+ population) were screened with a validated screening questionnaire with high sensitivity (87.8%) and specificity (94.9%). Positive responders underwent full neurological history and examination to confirm or refute the presence of a neurological diagnosis (classified using WHO International Statistical Classification of Disease and Related Health Problems 10th Revision (ICD 10)).

Results
In 2232 participants, there were 384 neurological diagnoses amongst 349 people. The age-adjusted prevalence of neurological diagnoses was 168.9/1000 (95% confidence interval 153.4 to 184.5) and of people with neurological diagnoses, 154.1/1000 (139.2 to 169.1). The age-adjusted prevalences of the most common neurological disorders were: headache - 41.8/1000, essential tremor - 30.1/1000, stroke - 23.0/1000, peripheral neuropathy - 18.6/1000 and Parkinsonism - 5.9/1000. 58.6% had sought medical help, 14.6% had been correctly diagnosed and 10.6% were on appropriate treatment. Those with neurological disorders had significantly greater odds of having moderate to severe disability (odds ratio 4.67(3.51 to 6.22)).

Conclusions
This is the first community-based neurological disorder prevalence study specifically in the elderly in SSA. It reveals a high prevalence of neurological morbidity, low diagnosis and treatment levels and high associated disability. It demonstrates the contribution neurological morbidity in the elderly makes to the non-communicable disease epidemic, a burden that is likely to worsen as the populations of low-income countries age.
FRAILTY IS LINKED WITH AN INCREASED MORTALITY IN EUROPEAN MEN

R Ravindrarajah¹, D M Lee¹, T W O'Neill¹, S R Pye¹, N Pendleton¹, J D Finn¹, M D L O'Connell¹, G Bartfai², S Boonen³, F F Casanueva⁴, G Forti⁵, A Giwercman⁶, T S Han⁷, I T Huhtaniemi⁸, K Kula⁹, M E J Lean¹⁰, M Punab¹¹, D Vanderschueren³, F C W Wu¹


Introduction
Frailty is considered a multisystem physiological dysfunction, making older adults vulnerable to stressors. It is an important geriatric concept and has been validated by its ability to predict adverse outcomes. Data on the prevalence of frailty and its association with mortality across Europe remain limited.

Methods
3,369 men aged 40-79 years were recruited from population registers in eight European centres for participation in the European Male Ageing Study (EMAS). Subjects were invited by letter to attend for an interviewer-assisted questionnaire, functional assessments and anthropometric measurements including height and weight. Frailty was assessed at baseline using a phenotype (FP) model based on five criteria: sarcopenia, exhaustion, slowness, weakness and low activity. Men having 0 criteria were considered robust, 1-2 criteria as pre-frail, and 3-5 as frail. Subjects were followed prospectively for a median of 4.5 years. Deaths were confirmed where possible by death certificates. The ability of FP to predict mortality was assessed using Cox proportional hazards regression. Adjustments were made for age, centre, body mass index (BMI), smoking, alcohol consumption and comorbidities, with results presented as hazard ratios (HR) and 95% confidence intervals (CI).

Results
3047 men, mean (±SD) age 59.8±11 years were included in this analysis. 167 died during the follow-up period, of these 21 (12.6%) were classified as frail, 83 (49.7%) pre-frail and 63 (37.7%) robust. After adjustment for age and centre, compared to those who were robust at baseline, the risk of death was increased in those who were pre-frail (HR=2.0; 95%CI 1.4, 2.8) and frail (HR=5.4; 95%CI 3.2, 9.0). FP status remained predictive of mortality after further adjustment for BMI, smoking, alcohol consumption and comorbidities: pre-frail (HR=2.0; 95%CI 1.4, 2.9), frail (HR=4.9; 95%CI 2.8, 8.7).

Conclusions
Frailty as classified by the FP predicts mortality in European men, independent of comorbidities and lifestyle factors.
ACROSS THE ADULT LIFESPAN, THE DISTRIBUTION OF THE FRAILTY INDEX IS QUASI-STATIONARY OVER 16 YEARS

K Rockwood, X Song, A Mitnitski

Division of Geriatric Medicine, Dalhousie University, Halifax, Canada

Introduction
Frailty can be measured by accumulated health deficits, in a frailty index (FI) the mathematical properties of which are of interest. For example, the mean FI value increases across the adult lifespan, so that the prevalence of frailty increases with age. We investigated the change in the distribution of the FI over 8 cycles of the National Population Health Survey of Canada (NPHS).

Methods
The longitudinal NPHS is a representative cohort study. We studied 14,713 respondents (54.2% women) aged 15+ years, followed for up 16 years. The baseline frailty prevalence and its outcomes have been reported [Rockwood et al., CMAJ 2011;183:E487-494]. The FI was calculated according to a standard procedure [Searle et al. BMC Geriatr 2008] using 42 self-reported variables. These include symptoms, signs, diseases, disabilities, health attitudes and practices. An individual's FI value is the number of deficits they report divided by 42, giving a theoretical range of 0 (no problems) to 1.0 (all problems).

Results
At each successive wave, the shape of the FI remained almost exactly the same, being skewed with a long right tail that never exceeded 0.7. The proportion with the lowest FI values (≤0.03) fell from 55% at baseline to 38% at year 16.

Conclusion
In a representative Canadian cohort study of adults the shape of the FI was quasi-stationary over 16 years. We highlight two implications. First, the decline in the proportion with FI ≤0.03 suggests that simply knowing the proportion of people with the least wrong can characterize the health of the entire population. Second, the limit to the FI was never exceeded. The frailest people did not become frailer still; rather, at least in community-dwelling people, there is a limit to frailty, beyond which survival at any age is not possible.

POSTER PRESENTATIONS

Clinical Effectiveness .............................................. Abstract Book Nos 10-52
Bone, Muscle and Rheumatology ................................. 53-54
Cardiovascular .......................................................... 55
Education/Training ..................................................... 56-58
Epidemiology ............................................................ 59-60
Falls, Fractures and Trauma ......................................... 61-65
Health Services Research ........................................... 66-69
Law and Ethics .......................................................... 70
Other Medical Conditions ......................................... 71-73
Parkinson’s Disease .................................................. 74
Pharmacology ........................................................... 75-77
Psychiatry and Mental Health ..................................... 78-79
Respiratory ................................................................. 80
Stroke ................................................................ 81-83
A COMPLETED AUDIT CYCLE OF THE QUANTITY OF PATIENTS FOOD INTAKE FOLLOWING HIP FRACTURE AND THE EAT MORE INTERVENTION

I Wilkinson, M Barne, R Sakoana, N Singh

Hip fracture Unit, St Helier Hospital, Carshalton, Surrey

Introduction
BGS/BOA guidelines state that patients with hip fractures receive half their necessary nutritional intake. Multi-disciplinary efforts are needed to increase this. We completed an audit cycle assessing the EAT MORE initiative (Everyone helps, be Around at meal times, give patients Time, Motivate, Offer, Review, Encourage) to improve the quantity of patients' intake.

Method
Prospective data was collected for both parts of the audit. All patients with hip fractures on the hip fracture unit were included. For a 2 week period the amount (in grams) of main course eaten at lunch time was calculated. Following the first audit key patient groups were identified as under-eating (AMTS <7, those needing feeding and Charlson Comorbiditiy Score(CCS)>5). Interventions were: Red trays for these groups of patients, EAT MORE education to ward staff, one HCA to “lead” lunch service, deserts to be kept warm on one side initially and each staff member to be responsible for supervision of 4-5 beds. The data was then collected again.

Results
Audit 1: 160 meals from 30 patients, mean age 83.5 yrs, AMTS 8.16. N=8(26.7%) needed some assistance with eating. AMTS>7 = 152.9g, AMTS<7 = 93.7g(P<0.01), CCS<5 = 195.25 CCS>5 = 114g(P<0.01).

Audit 2: 197 meals from 38 patients, mean age 82yrs, AMTS 7.32. N=13(33%) needed some assistance with eating.

There was no significant difference in the amount of food eaten following the intervention.

Conclusions
The reasons why patients with hip fractures are undernourished in hospital is muti-factorial and are not improved by targeted interventions based around patient encouragement.
IMPROVEMENT IN PRACTICE OF HYPODERMOCLYSIS IN OLDER IN-PATIENTS IN A COMMUNITY HOSPITAL

I Chattopadhyay, S Shandilya, K Sajjad, S Oomeer

Care of the Elderly Department, Glan Clwyd Hospital, Rhyl

Evidence-base
Subcutaneous fluid (SCF) infusion (hypodermoclysis) is a useful alternative for treating older or palliative care patients with mild to moderate dehydration in whom intravenous access is impractical, impossible or inappropriate. Good practice suggests use of appropriate gravity-fed fluids at appropriate rate and sites with needle, tubing and site changes at least 72-hourly with regular site inspection and adequate documentations.1,2

Change Strategies
21 patients on SCF in a community hospital were prospectively audited [67% females; mean(SD) age: 86.8(4.6) years] over 6 months. 81% had an indication for hypodermoclysis documented. Mean(SD) duration of hypodermoclysis was 9.4(7.7) days. Clinical response was not documented in 43%; SCF site was not documented in 76%; 85.7% had no documentations of regular site, needle or tubing changes. Only 4 had evidence of regular site inspection. The auditors detected 4 patients with complications (bleeding, redness, oedema) - all had SCF greater than 72 hours without site change. Only 1 of these was recorded. The data was presented for medical and nursing staff education. Nursing staff were empowered to develop a SCF administration chart with a simple checklist that prompts good practice.

Change Effects
In a re-audit of 20 patients [mean(SD) age 87.3(6.9) years], 100% had clinical response documented (p<0.01); SCF site was documented in 87.5% (p<0.001); 100% had evidence of regular site, needle or tubing changes (p<0.001). 100% had documented site inspection (p<0.001). 1 had site redness that was promptly addressed. Compliance with SCF chart use was 100%.

Conclusion
The initial audit demonstrated sub-optimal practice of hypodermoclysis. Subsequent staff education, nurse engagement and introduction of a SCF administration chart with checklist significantly improved practice as per standards.

References
IMPROVING NUTRITIONAL INTAKE IN HOSPITAL INPATIENTS – FOOD FOR THOUGHT

P Fernando¹, B Mohamed¹, S Harris², P Sampson¹, L Evans¹, K Barnes¹, R Morris²

1. Dept. of Academic Geriatrics, University Hospital of Wales, 2. Dept. Nutrition and Dietetics, University Hospital of Wales, Cardiff, UK

Evidence-base
Malnutrition remains a common problem within hospital settings contributing to patient morbidity and mortality and is frequently underestimated.¹

Change Strategies
Initial audit evaluated the nutritional support provided to older patients in a acute rehabilitation ward (University Hospital of Wales) as per NIcE guidelines.² Subsequently, a new hospital menu and milk shake rounds were introduced. The follow-up audit was carried out a year later.

Change effects
Despite improvements in the hospital menu, protected mealtimes scheme and a dedicated ward-feeding assistant, 50% of our cohort in the second cycle had an increased Nutritional Risk Score (NRS) and Clinical Frailty Score of >4.

Changes in the hospital menu appeared to offer an increased energy intake (average 133 kcal); however, our most vulnerable patients (71% of ↑ NRS), were still unable to achieve > 60% of estimated kcal and >50% of protein requirement.

Milkshake rounds improved compliance with oral supplements from 40% to 70%, with 86% of nutritionally compromised patients accepting a drink & snack, a further 419kcal, 12.7g protein.

These rounds enabled those patients most at risk to achieve an additional average 22.5% (Median 23.5%) and 14.7% (Median 15%) of energy and protein requirements respectively, addressing the deficit by 28-128% energy and 12.3-51.6% protein.

Conclusion
Additional milk shake rounds improved compliance with oral supplements providing extra calorie and protein intake in this frail group and in combination with the new menu, their contribution in maintaining the nutritional status of our patients cannot be underestimated. In view of high nutritional risk in our cohort, further imaginative strategies are needed to address this significant clinical problem. Targeting patients with high frailty scores may be an appropriate strategy that needs further evaluation.

Reference
1. Lennard-Jones JE. A positive approach to nutrition as a treatment. London: King’s Fund Centre, 1992
DOES THE INTRODUCTION OF AN IN-PATIENT FALLS PROFORMA IMPROVE THE QUALITY OF FALLS REVIEWS?

I Hassall, S Onda

Trafford General Hospital, Manchester

Introduction
The morbidity and mortality of patients who suffer a fall while in hospital has long been a matter of concern.

Method
An initial audit was conducted to establish the thoroughness of in-patient falls reviews. Seven different categories were identified as the most important when reviewing falls and these were then looked for in existing falls reviews by junior doctors. They were found to be poor at certain areas of post falls reviews, most particularly in checking if the patient was on warfarin and how the patient was following the fall with only 14 out of 50 and 20 out of 50 being documented respectively.

The production of a standardised in-patient falls reviews proforma to make it easier and quicker for junior doctors to review patients who fall while providing them with a framework to ensure that all relevant areas are examined/asked about. This was developed in conjunction with one of the elderly care consultants and the hospital's quality department.

Results
The introduction of the standardised in-patient falls review proforma improved the documentation of falls reviews to 100% in all but one of the categories audited.

Conclusion
The improvement of quality in falls reviews across the board showed that the standardised proforma was a valuable tool in helping to improve in-patient review after falls. It was therefore introduced into the hospital's official falls prevention policy.
Evidence-base

The most widely prescribed oral bisphosphonate in the UK is alendronate, with over five million prescriptions issued in 2009-10. Bisphosphonates have poor oral bioavailability (1-2%). It is therefore recommended that bisphosphonates are taken at least 30 minutes before breakfast or before another oral medication to improve absorption and to reduce adverse effects. Co-administration with divalent cations such as calcium should particularly be avoided, as these reduce drug absorption.

We audited the alendronate prescribing in Stoke Mandeville hospital against the following recommendations:

- Alendronate should be prescribed before breakfast (6 – 7 am)
- It should not be co-administered with other oral medications
- A specific day should be assigned for prescription (once weekly)

All the prescription charts were analysed on two occasions, four weeks apart. Of 41 prescriptions, only a third (37%, n=16) allowed alendronic acid to be administered before breakfast as recommended. A specific day of the week was assigned for in 85% (n=35). Alendronate was co-administered with calcium or vitamin D in two thirds (n=27) of patients.

Change strategies

A sticker was introduced to be applied on the prescription charts with instructions as an aide memoire and a teaching session was organised for junior medical staff to improve awareness of correct prescribing of bisphosphonates.

Change effects

On repeat audit, after introduction of changes, 74% of 27 prescriptions allowed alendronate to be administered before breakfast and 93% had a specific day of the week assigned for the prescription. Only a fifth of patients had alendronate co-administered with Calcium/vitamin D. An overall improvement was observed in the prescribing of bisphosphonates.

Conclusion

A simple, pragmatic and cost effective intervention has significantly improved the safe and appropriate prescription of alendronic acid.
AUDIT OF VISUAL ASSESSMENT FOR ELDERLY PATIENTS WITH FALLS

M Bizrah¹, A Tamimi², H Alani², N Opare¹, H Quraishi², O Kailani⁴, J Birns¹


Evidence-base
British Geriatrics Society and College of Optometrists recommend that all elderly fallers should undergo assessment of visual acuity and visual fields. An initial audit of visual assessment was undertaken in 71 in-patients that presented with a fall to elderly care wards (ECWs) at 3 London teaching hospitals over a 1 week period in early 2011. 2 of the 71 patients (2.8%) were assessed for visual impairment; both had visual acuity ≤6/12. All hospitals had a falls proforma outlining a pathway for visual assessment.

Change Strategies
On a single day in April 2011, an audit of visual assessment was undertaken on the 3 ECWs at St Thomas’ s Hospital. Of the 80 in-patients, 31 had presented with a fall and only 1 had visual assessment. No Snellen charts were freely available. 3 metre Snellen charts and ophthalmoscopes were then made available on all ECWs. A visual assessment teaching session was arranged for junior doctors in August and November 2011. A poster outlining the audit findings, the falls proforma and a free iPhone Snellen chart app link was placed in clinical areas and doctors’ offices. Snellen charts were also placed above all the beds in one of the ECWs.

Change Effects
A re-audit of visual assessment and specialist referral on the 3 ECWs showed an increase in the rate of visual assessment from 1/31 patients (3%) to 5/27 patients (19%). 2 patients assessed had visual impairment. On the ward with Snellen charts above beds, 4/9 patients (44%) had visual assessment.

Conclusion
Visual assessment is severely neglected in the assessment of elderly patients with falls. Education strategies and provision of visual assessment equipment increased rates of visual assessment. Placement of a Snellen chart above patient’s beds proved to be a cheap, easy and effective intervention to improve visual assessment in elderly fallers.
FALLS RISK FACTORS IDENTIFIED MORE SUCCESSFULLY FOLLOWING IMPLEMENTATION OF FORMALISED ASSESSMENT

A Dare, P Sommerville, S Sriranjan, M Wahed

*Department of Elderly Care, Queen Elizabeth Hospital Woolwich*

**Evidence Base**
Falls are a common problem in the elderly. 25% result in injury and cost the NHS £1.7 billion annually. They are associated with up to 14,000 deaths and significant morbidity. The National Falls Audit (2007) shows that most local health services provide inadequate care to those who fall. The NICE guidance on managing falls, including the multifactorial falls risk assessment tool (MFFRAT), outlines key areas for assessment and risk modification. Despite this there had still not been routine use of any falls risk assessment tool at our hospital.

**Change strategies**
We retrospectively audited notes from 36 patients admitted on the medical take with a fall. We determined whether or not an assessment had been made of each component of the MFFRAT. These results were presented at a local meeting which included education on falls assessment. Subsequently, a universal medical clerking proforma was adopted for the hospital and we stuck a ‘falls checklist’, containing a reminder of the MFFRAT components into every one. We then reaudited 48 patients’ notes.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>% Completed before intervention</th>
<th>% Completed after intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls History</td>
<td>91</td>
<td>96</td>
</tr>
<tr>
<td>Gait</td>
<td>74</td>
<td>88</td>
</tr>
<tr>
<td>Balance</td>
<td>71</td>
<td>90</td>
</tr>
<tr>
<td>Weakness</td>
<td>49</td>
<td>97</td>
</tr>
<tr>
<td>Focal neurology</td>
<td>51</td>
<td>97</td>
</tr>
<tr>
<td>Vision</td>
<td>11</td>
<td>88</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>ECG</td>
<td>91</td>
<td>95</td>
</tr>
<tr>
<td>Postural hypotension</td>
<td>34</td>
<td>52</td>
</tr>
<tr>
<td>Cognition</td>
<td>43</td>
<td>92</td>
</tr>
<tr>
<td>Osteoporosis risk</td>
<td>54</td>
<td>73</td>
</tr>
<tr>
<td>Incontinence</td>
<td>29</td>
<td>83</td>
</tr>
<tr>
<td>Home hazards</td>
<td>37</td>
<td>31</td>
</tr>
<tr>
<td>Medication</td>
<td>49</td>
<td>63</td>
</tr>
<tr>
<td>Outpatient</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>80</td>
<td>69</td>
</tr>
</tbody>
</table>

**Change effects**
There was a significant difference in the MFFRAT assessment rates before and after our intervention using a chi-square test (p=0.0007)

**Conclusion**
These data show that formalising the MFFRAT into a proforma significantly improves the assessment of patients who have fallen. This translates into improved care.
As a result of this audit a falls checklist was introduced trustwide onto the hospital medical clerking proforma.
PRESCRIPTION OF LOW MOLECULAR WEIGHT HEPARIN IN ACUTE ISCHAEMIC STROKE

S Cam, E Haithem, R Basu, K Prakash, M Datta-Chaudhuri

Manchester Royal Infirmary, Central Manchester University Hospitals

Evidence-base
Cochrane review of prophylactic heparin in acute ischaemic stroke concluded that this will prevent deep vein thrombosis but with a small but definite increased risk of major haemorrhage. The review did not support routine prophylaxis with low molecular weight heparin in the treatment of acute ischaemic stroke.

Change strategies
Recommendation 27 of the NICE clinical guidelines CG68 on the diagnosis and initial management of acute stroke and transient ischaemic attack states that anti-coagulation treatment should not be used routinely for the treatment of acute stroke. The guidelines also acknowledge that there may be a subgroup of people for whom the risk of venous thromboembolism outweighs the risk of haemorrhagic transformation. Our audit evaluated compliance with the NICE recommendation in the Stroke Unit.

Change effects
In the first cycle of 28 patients with a diagnosis of acute ischaemic stroke, 71% (20 patients) did not receive low molecular weight heparin. For 1 patient, prescription of low molecular weight heparin was not documented. Of the remaining 25% (7 patients) who did receive low molecular weight heparin, 4 patients had co-morbidities such as PE and DVT which justified the prescription of low molecular weight heparin.

In the re-audit which included 19 patients, 79% (15 patients) did not receive low molecular weight heparin. The 21% (4 patients) who did receive low molecular weight heparin had co-morbidities for which the benefits of low molecular weight heparin treatment could possibly outweigh the risk of haemorrhagic transformation.

Conclusion
1. Compliance to NICE recommendation 27 was observed in 85.7% (cycle 1) and 100% (cycle 2) of acute ischaemic stroke

2. Prescription of low molecular weight heparin was justifiable in 57% (cycle 1) and 100% (cycle 2) due to presence of co-morbidities eg. PE, DVT.

Implementation of NICE recommendation requires education, awareness raising sessions and PDSA style repeated audit.
A MULTIFACETED INTERVENTION PACKAGE TO IMPROVE THE DIAGNOSIS AND MANAGEMENT OF DELIRIUM

S Chen, J Fleet, H Buckley, F Martin, T Ernst

Guy's and St. Thomas' Hospital Trust, London

Introduction
NICE identifies delirium as a major cause of morbidity and mortality amongst hospital patients (NICE CG 103). Previous audits showed it is often poorly recognised and managed. This audit assesses whether delirium management can be improved through a multifaceted intervention.

Measurement
The following data were audited pre and post intervention: delirium knowledge through questionnaires; documented use of Confusion Assessment Method (CAM) and identification and management of 8 common precipitating factors. Re-audit 4 months post baseline audit with interventions within this period.

Change strategies
The Trust delirium guideline including the use of CAM, common precipitants, Dos and Don'ts of management were adapted into A7 sized cards and A3/2 posters displayed on wards. Cards were distributed following teaching sessions highlighting delirium guidelines delivered to junior doctors, pharmacists, physiotherapists and nurses. Computer screen-savers were displayed and delirium promotion days held.

Chi-squared tests were used for statistical significance.

Change effects
100 randomly selected medical trainees completed questionnaires; 27 clinical notes were selected via retrospective identification of delirium. Significant improvements were demonstrated in: recognising CAM as the diagnostic tool for delirium (24 vs 71%, p < 0.00001); documentation of CAM for inpatient delirium assessments (0 vs 77%, p < 0.0001); identifying haloperidol as 1st line pharmacological management (55 vs 98%, p < 0.000001) and its correct treatment dose (40 vs 67%, p = 0.008).

No significant improvements were seen in the screening of the 8 common delirium precipitants, an average of 5 was identified.

Trainees found the delirium card particularly helpful (82%) and carry it with them at all times (70%).

Conclusion
This multifaceted intervention improved CAM use in delirium recognition and the knowledge of pharmacological management. There was no increased identification of delirium precipitants. The delirium card received high popularity and this low cost intervention could be considered in other Trusts.
WITHDRAWN
AUDIT TO EVALUATE THE EFFICACY OF THE HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST FALLS PHYSIOTHERAPY INTERVENTION

A Green¹, H Marrett², A Folwell³, R Saharia²

1. Therapy Services, Hull and East Yorkshire Hospitals NHS Trust, 2. Department of Medicine for the Elderly, Hull and East Yorkshire Hospitals NHS Trust

Evidence Base
The Otago Exercise Programme (OEP) is a supervised exercise programme of 12 month duration, designed to reduce falls in older people [i], [ii].

Change Strategies
Implementation of the OEP with 100 community dwelling older adults (March 2009-March 2011). Comparison of patient falls data over 6 months prior to the OEP with data gathered during OEP programme.

Change effects
A significant reduction in the number of falls in the first 6 months (p=0.0005) and second 6 months (p=0.0005) of the programme compared with pre-OEP falls. Also a reduction in number of falls related A&E attendances and hospital admissions. The number of falls in first 8 weeks predicted the likelihood of subsequent falls.

The greatest change effect of the OEP (by Tinetti [iii] risk category) occurred between programme commencement and 8 week review (p>0.0005). A gradual deterioration in Tinetti risk category occurred from week 8, but remained statistically reduced at 12 months compared with pre-OEP levels.

Conclusion
Introduction of the OEP was effective in reducing falls and admissions. On the basis of these findings 36 patients had improved to low risk Tinetti score with no falls at 8 weeks and could be followed up by an administrator following a telephone protocol or a community exercise group thereby releasing physiotherapy capacity to provide more intensive intervention to those who remain high risk or continue to fall.

IS THERE VALUE FOR USING THE GLOBAL TRIGGER TOOL TO IDENTIFY AND MONITOR ADVERSE EVENTS WITHIN GERIATRIC MEDICINE?

D Holmes, R Musgrave, A Cracknell

1. Geriatric Department St James University Hospital Leeds

Background
Voluntary hospital reporting systems do not provide an accurate picture of the extent and nature of harm. Case note review with structured training of reviewers is a reliable method for detecting adverse events; validated tools include the Global Trigger Tool (GTT). GTT is used widely within the U.K. at organisational level to measure harm; evidence suggests levels of harm range from 18-40% using this method.

Innovation
GTT has not been evaluated within Departments of Geriatric Medicine, for identifying and monitoring adverse events in frail older people in hospital. We wished to assess whether:

1. GTT is a practical method to measure harm within a Department of Geriatric Medicine at a large NHS Teaching Hospital.
2. GTT can identify key areas to focus improvements in safety for frail older patients.

Trained reviewers carried out case note review using GTT on 55 random admissions lasting ≥ 24 hours.

Evaluation
65 triggers were identified in 55 admissions. All patients were ≥ 85 years old. 30 patients (55%) had ≥1 trigger. 21 of the 65 triggers (32%) resulted in an adverse event. In total 20 patients (36%) experienced ≥1 adverse event. 70% of the triggers were in the category “General Care”; 15% within “laboratory tests” and 13% medication related. The top three triggers were:

1. lack of response to early warning score
2. falls
3. readmission <30 days

Of the 21 triggers resulting in harm 42% resulted in temporary harm requiring intervention; 53% resulted in temporary harm requiring initial or prolonged hospitalisation; 1 case contributed to death.

Conclusion
GTT is practical to measure harm within a Department of Geriatric Medicine. Identifying harm alone does not result in improvement, but its use prioritises key areas to address. It has value to track and monitor harm when used routinely within clinical governance programmes.
DEVELOPMENT OF A GERIATRICIAN LED OUTREACH SERVICE FOR OLDER PRISONERS

A Wheldon, R Williams

Royal Bournemouth Hospital, Dorset County Hospital

Background
Studies have shown that the health of older prisoners is worse than the general population. Many prisons offer a GP led service with nursing input. Secondary care input usually requires transfer of the patient (with a very limited number of transfer slots) to the hospital for medical assessment and investigations.

Sampling Methods
An assessment tool using System 1 was developed to allow easy communication with GPs involved in prisoners care. Prisoners in a category C prison who were 55 and over were invited to a prison based clinic appointment where a comprehensive geriatric assessment was made by a secondary care outreach service. A careful history and examination was performed. Assessment of mood, cognition, BMI and routine blood tests were made.

Results
26 prisoners were assessed in the clinic. The age range was 55 to 77. 46 prisoners were identified as over 55, 36 of whom had identified chronic illness, including one patient with dementia. Over one year 50 hospital attendances had been cancelled due to a lack of capacity for escort to hospital.

Table shows the outcome following assessment of 26 prisoners over 55 years old:

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Diagnosis Made</td>
<td>2</td>
</tr>
<tr>
<td>New Prescription Provided</td>
<td>6</td>
</tr>
<tr>
<td>Medication Stopped</td>
<td>1</td>
</tr>
<tr>
<td>New Referral Made</td>
<td>6</td>
</tr>
<tr>
<td>Discussion with Speciality to Stop the Need for Hospital Referral</td>
<td>2</td>
</tr>
<tr>
<td>Investigations Requested</td>
<td>11</td>
</tr>
<tr>
<td>Health Advice Provided</td>
<td>15</td>
</tr>
</tbody>
</table>

Conclusions
There remains an unmet health need for older people in prison. They frequently miss hospital attendances due to problems with the provision of an escort to hospital and through prison moves. The use of a comprehensive geriatric assessment of older patients by a secondary care outreach service identified new diagnoses, provided treatment and was able to reduce the need for attendance to hospital.
**SURVEY OF EFFECTIVE COMMUNICATION OF DNAR DECISIONS BETWEEN SECONDARY AND PRIMARY CARE**

**K Deo, L Crabtree**

*Queen Elizabeth Hospital, Gateshead Health NHS Foundation Trust*

**Background**

Do Not Attempt Resuscitation (DNAR) decisions are a subject frequently encountered in elderly medicine. Health professionals are aware that decisions about attempting cardiopulmonary resuscitation (CPR) raise sensitive and potentially distressing issues for patients and relatives. Current guidelines state that any discussion regarding CPR should be documented by the communicating clinician. It is the clinician’s responsibility to ensure this decision is communicated to healthcare professionals in primary and secondary care. Should the patient lack capacity, those close to the patient should be involved (British Medical Association 2007, [http://www.resus.org.uk/pages/dnar.pdf](http://www.resus.org.uk/pages/dnar.pdf)).

Anecdotal evidence has led us to believe general practitioners are often unaware about discussions regarding CPR having taken place in hospital.

This survey set out to investigate the effectiveness of this process.

**Sampling Methods**

The notes of those patients who had an indefinite DNAR issued in hospital and survived to discharge over a 6 month period were reviewed. The notes were assessed to determine clarity of documentation, and how decisions were communicated to both primary care and patients/relatives. Telephone follow up took place to establish if a community DNAR was in place.

**Results**

Due to availability, 40 cases were assessed from an initial sample of 44.

- 78% (n=31) documented the decision in the patient notes.
- 65% (n=26) had clear documentation of discussion with patient/relative.
- 2.5% (n=1) had the decision documented on the patient's discharge script.
- 28% (n=9) of these patients had a community DNAR in place.

**Conclusions**

Current guidelines are not being met, especially regarding communication of the decision to primary care. One third of DNAR decisions are not being communicated to a patient or relative. These factors may explain why only a small number of patients have a community DNAR in place. Improving communication may aid those involved in decision making in the community and help to optimize patient care.
IMPACT OF CARE HOME EDUCATION PROGRAMME ON THE CARE HOME STAFF AND THEIR PRACTICE

S Ashraf¹, M Datta-Chaudhuri², T Chattopadhyay³, P Ngoma³, A Wardle⁴, A Datta³

¹. University Hospital of South Manchester NHS Foundation Trust, ². Central Manchester University Hospitals NHS Foundation Trust, ³. Stockport NHS Foundation Trust, ⁴. Contracts & Performance Dept, Social Services, Stockport M B C

Background
A significant number of older people live in Care Homes (CH). Staff caring for older people need basic knowledge and understanding in their management. A structured Care Home education programme was lacking in Stockport Borough. Formal feedback is vital in ensuring such a scheme achieves its aim of improving knowledge and changing practice.

Innovation
A structured education programme was introduced in liaison with Social Services. Stockport CH managers were encouraged to sign staff to the course running over eight months. Modules taught covered general topics including communication, teamwork, nutrition; in addition to disease-specific modules including stroke, diabetes, Parkinson’s disease, infection prevention & control.

Evaluation
Knowledge based assessment was under-taken pre and post completion of the course by 15 participants (Table 1). Feedback was by likert style and open questions (Table 2). All stated that learning would be shared with colleagues at work and recommended the course. 8 participants gave examples of change in practice as a result of attending the course (Table 3).

Table 1

<table>
<thead>
<tr>
<th>% Mark</th>
<th>Pre-course</th>
<th>Post-course</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>10/15</td>
<td>0/15</td>
</tr>
<tr>
<td>51-70</td>
<td>1/15</td>
<td>0/15</td>
</tr>
<tr>
<td>&gt;71</td>
<td>4/15</td>
<td>15/15</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>% Mark</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant to practice in care homes</td>
<td>10/15</td>
<td>5/15</td>
<td>0/15</td>
</tr>
<tr>
<td>Improved knowledge</td>
<td>8/15</td>
<td>7/15</td>
<td>0/15</td>
</tr>
<tr>
<td>Content was right</td>
<td>7/15</td>
<td>8/15</td>
<td>0/15</td>
</tr>
<tr>
<td>Course was interactive</td>
<td>10/15</td>
<td>5/15</td>
<td>0/15</td>
</tr>
</tbody>
</table>

Table 3 Change implemented

<table>
<thead>
<tr>
<th></th>
<th>% Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dignity in care</td>
<td>8/8</td>
</tr>
<tr>
<td>Communication style</td>
<td>6/8</td>
</tr>
<tr>
<td>Nutritional care</td>
<td>5/8</td>
</tr>
<tr>
<td>Urgent stroke referral</td>
<td>5/8</td>
</tr>
<tr>
<td>Care of the Dying</td>
<td>4/8</td>
</tr>
</tbody>
</table>

Conclusion
Structured care home education programme using general and disease-specific modules leads to i) improvement of staff knowledge and ii) implementation of good practice in CH. We recommend such education programmes be encouraged and if possible, become mandatory for all CH for raising standards of care for older people.
AUDIT ON URINARY INCONTINENCE

T Rajeevan¹, C Lee²

Dept of Elderly care, Kingston Hospital

Introduction
Urinary Incontinence is one of the major health problems, but never been a priority for improvement. Continence has an impact on all of the other geriatric core conditions.

Aim
Aim of this audit is to compare the standards of care provided for the patients with urinary incontinence against national guidelines – NICE, SIGN and DoH. All these reinforce the necessity of focussed history taking, examination, investigation and draw conservative management before considering further treatment modalities.

Method
Two separate prospective audits were conducted on Orthogeriatric unit and patients aged 65 and above were included. On first round conducted between February to April 2011, 120 patients were interviewed and 40 of them identified to be incontinent. On second round conducted between July to September 2011, 160 patients were interviewed and 40 were identified to be incontinent. Data were collected on screening for urinary incontinence, assessment methods and management plans by reviewing case notes, nursing notes and interviewing the patients. Training sessions were carried out for the health professionals on the ward following first round of audit with 80% attendance.

Results

<table>
<thead>
<tr>
<th>Audit Criterion</th>
<th>Results of 2nd Audit %</th>
<th>Results of 1st Audit %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening for urinary incontinence</td>
<td>76</td>
<td>75</td>
</tr>
<tr>
<td>Type of UI identified by nursing staff</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Type of UI identified by auditor</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Focused history taken</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Focused Examination – Per Rectal</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>AMTS recorded</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>ADLS recorded</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Urine dip</td>
<td>50</td>
<td>35</td>
</tr>
<tr>
<td>Conservative management</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Managed with pads</td>
<td>78</td>
<td>83</td>
</tr>
<tr>
<td>Care plan discussed or documented on discharge</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion
Although there is improvement in continence care following teaching, it is not adequate. Health professionals need to be confident in assessing and planning management strategy. The audit highlighted the need for cultural change, implementation of care plan and adequate training in urinary incontinence.
EXECUTIVE FUNCTION AND ITS RELATIONSHIP TO FALLS AND GAIT ABNORMALITIES IN OLDER ADULTS: A SYSTEMATIC REVIEW

F Kearney¹, R H Harwood¹², J R Gladman¹, N Lincoln¹, T Masud¹²

¹ University of Nottingham, 2. Nottingham University Hospitals

Scope
Older adults with dementia have a two-fold increased risk of falls, which multi-factorial interventions fail to reduce. A better understanding of specific cognitive factors and their relationship to gait, balance, and falls is required.

Search Methods
Systematic searches of MEDLINE, EMBASE, PsycInfo, and CINAHL databases to April 2011 were conducted and reference lists of retrieved articles examined to identify prospective studies in adults over 65 years examining executive function (EF) and its relationship with falls, balance and gait abnormalities. Two independent reviewers extracted data on study populations, measures of EF, outcome measures, and study findings.

Results
Of 8985 abstracts identified, 14 studies met inclusion criteria. Eleven studies examined EF and falls, the remaining studies examined EF and gait speed. No studies using balance as an outcome were identified. Most studies found a relationship between poor EF (using the trail making and digit substitution tests) and increased risk of falls and between poor EF and declines in gait speed. EF impairment predicted more serious falling patterns, defined by recurrent or injurious falls.

Conclusions
EF predicts falls and gait speed slowing in older adults. Future research should consider executive dysfunction as a training target for fall prevention, or as a factor mediating the failure of conventional falls prevention interventions.
PROMOTING HARM FREE CARE ON AN ELDERLY MEDICINE WARD

J Marion, R Sykes, J Fox, A Thomson

Department of Elderly Medicine, Salford Royal Foundation Trust

Background
Quality care is ‘clinically effective, personal and safe’ (Darzi, 2008). Despite healthcare professionals striving to achieve this, unintentional but preventable medical errors still occur, sometimes leading to adverse outcomes or ‘harm’ to patients. Annually, 10% of patients suffer harm, costing the National Health Service £2 billion (Department of Health, 2000).

Innovation
We undertook 1-hour long ‘Harm Free Care’ (HFC) meetings every Friday afternoon on a 24-bed elderly medicine ward in Salford Royal Foundation Trust (SRFT). 2 Consultants and 1-4 training grade doctors undertook an electronic review of all ward patients. Within SRFT the electronic patient record (EPR) allows easy access to all medical and nursing notes, results and prescription charts.

We looked specifically at allergy status, hospital-associated-thromboembolism (HAT) risk assessment, blood and microbiology results, current medications and resuscitation status. Any aberrant findings were acted upon.

Evaluation
► 178 patients were admitted between July and September 2011. 67 were excluded as they were discharged prior to a meeting. Of the 111 patients included, 65 (59%) had one or more intervention.
► Allergy status was inaccurate and therefore updated in 6 (5%) patients.
► HAT risk was edited in 11 (10%) patients. 3 (3%) were commenced on low molecular weight heparin which had inappropriately been omitted.
► Review of blood and microbiology results led to interventions in 12 (11%) patients and 6 (5%) patients respectively.
► Following medication review, 47 (42%) patients had medications resumed, started, stopped or altered.
► Resuscitation status was revised in 6 (5%) patients often prompting timely discussion with patients and relatives.

Conclusions
On our ward, HFC meetings have resulted in the identification of preventable medical errors prompting timely interventions and as such are a method of reducing potential sources of harm.

We would encourage other wards in all specialities to undertake similar meetings in order to reduce harm on a larger scale.
INPATIENT OCCUPATIONAL THERAPY WASH AND DRESS INPUT FOLLOWING HIP FRACTURE: CAN WE REDUCE DEPENDENCY ON COMMUNITY SERVICES?

J S Lee, E van der Veen

1. Department of Occupational Therapy, Guys and St Thomas' NHS Foundation Trust

Background
Amongst the serious consequences following a hip fracture is the lost of independence in activities of daily living (ADL). Community rehabilitation services provide wash and dress retraining for patients, however, these services are costly and may increase hospital length of stay. Inpatient rehabilitation post hip fracture focuses primarily on functional transfers and mobility, whereas specific goals of independence in washing and dressing are left to the post discharge rehabilitation team. Therefore we wanted to determine whether increased inpatient OT assessment and rehabilitation for washing and dressing could reduce the requirement for community rehabilitation in patients following hip fractures post discharge.

Sampling Method
Pre and post intervention study carried out on consecutive patients admitted with a non-pathological hip fracture in this hospital over six months. Main inclusion criteria were: aged > 60 years, previously independent, no prior cognitive impairment. The pre group (n=27) studied retrospectively, received standard OT assessment and goal setting for community rehabilitation services (as per usual practice at this hospital). The post group (n=27) studied prospectively, received regular input by OT during the inpatient stay, on achieving independence in washing and dressing.

Result
Mean age was 78 ± 8 years, 72% female, both groups similar in proportion. There was a significant increase in the proportion who achieved independence in washing and dressing at discharge following the OT intervention (15% verses 59%; p=0.002). There was no difference in length of stay (Median 13 days- pre verses 11 days-post; p=0.15). Consequently, rehabilitation for washing and dressing was not required from community rehabilitation services for the post group on discharge.

Conclusion
Increased inpatient OT rehabilitation significantly impacts on ADL independence, and a reduction of dependency on community services, and possible associated costs.
REDUCING THE USE OF ANTIPSYCHOTICS IN NURSING HOMES THROUGH JOINT WORKING AND ACTIVE CASE MANAGEMENT

J L Yeo, F Bostock, M Khonje, T Pattison, D Gosling, M Vernon

Dept of Elderly Medicine, University Hospitals South Manchester

Background
The nursing home case management service in South Manchester provides input into care home residents in 9 nursing homes, providing comprehensive geriatric reviews including review of medications including use of antipsychotics. 2 of these homes are specialist EMI homes with high rates of dementia residents with challenging behaviour issues.

Method
We audited the prevalence of antipsychotic use in 9 nursing homes in South Manchester and repeated the audit cycle one year later following changes to practice and prescribing of antipsychotics.

In August 2010 we had a total of 276 residents (age range 61-101, mean age 83). 67% of this cohort had a diagnosis of dementia. 23% of all residents were on antipsychotic medication. In the last 6 months 51% of residents had their doses of antipsychotic unchanged, but 43% of residents had their doses decreased by the nursing home team.

Following this we instigated a number of changes, firstly we held regular monthly MDT meetings with colleagues in old age psychiatry and where appropriate, joint reviews were undertaken. All antipsychotic prescriptions were highlighted via our database. New residents arriving in a home on an antipsychotic medication were reviewed within two weeks.

Results
Our repeat audit carried out in August 2011 demonstrated that our total number of residents had increased from 276 to 296. Despite this the number of residents on antipsychotics had now fallen to 12.6%. Of these residents 32% had had their doses discontinued within the last 6 months, and 48% had their doses decreased.

Conclusion
Our results indicate that the prevalence of antipsychotic use in South Manchester care homes are well below the national average and with appropriate strategies in place use of these drugs can be reduced further still.
THE PATTERN OF READMISSIONS AND CHARACTERISTICS OF RAPID RETURNEEES FOLLOWING DISCHARGE FROM A MEDICINE FOR THE ELDERLY DEPARTMENT

C Holt, L Alwis, J D’Arcy, R Fisher, C G Nicholl

Cambridge University Hospitals NHS Foundation Trust

Background
Since April 2011, hospital readmissions have attracted financial penalties on the assumption that readmission reflects poor care in the index admission. As the first step towards reducing readmissions, we examined the pattern of readmissions, and characteristics of patients readmitted within three days of discharge as these were most likely to reflect poor management.

Sampling methods
Retrospective analysis of hospital data identified all discharges from our department from November 2009 to October 2010 readmitted to Addenbrooke’s within 28 days. Detailed standardised case note review was undertaken for the patients who were readmitted within three days (53/83 records were available). Qualitative analysis of the cause of readmission, its relation to the index admission and possible preventable factors was undertaken.

Results
Of 2888 live discharges, 352 episodes of readmission within 28 days occurred in 289 individuals (12%). Of these, 245 individuals had a single readmission and 44 had between 2 and 5 readmissions in a single year; thus 107 (30%) of episodes of readmission occurred in 44 (15%) individuals. The time course is shown in figure 1. Median time to readmission was 7 days but 83 (24%) returned within 3 days.

The 53 cases were analysed and classified into 3 broad types: readmission due to problems developing during the index admission (n=19); a further discrete episode of the same problem (n=15); and readmission due an issue unrelated to the index admission (n=20). In 17 cases (32%) factors were identified that might have reduced readmission, such as capacity and falls-risk assessments and communication to ensure care packages/equipment arrive as planned

Conclusions
Any post–discharge intervention would need to be targeted the day after discharge to maximise potential impact. Even in patients with very rapid readmission, two thirds were due to discrete episodes or new problems and could not have easily been prevented.
KNOWLEDGE AND ATTITUDES TOWARDS ELDER ABUSE AND SAFEGUARDING ADULTS IN EMERGENCY MEDICINE TRAINEES WITHIN THE NORTH WEST THAMES DEANERY

L McCusker¹, D Bertfield²

1. Care of the Elderly Department, Hillingdon Hospitals NHS Foundation Trust, 2. Department of Medicine for the Elderly, Mid Essex Hospital Services NHS Trust

Background
The estimated prevalence of elder abuse in the UK is 500,000. Due to lack of identification and reporting this is likely to be an under-estimate.¹ Well-recognised presentations include repeated hospital attendances and recurrent falls.²

In 2004 the House of Commons health committee recommended mandatory training in elder abuse for professionals working with older people.¹ Emergency medicine trainees are frequently the first and only health professionals to assess older people. Elder abuse is not, however, an essential component of the Emergency Medicine trainees’ curriculum.³

Sampling Methods
A 20 question online survey was emailed and then circulated at a regional training day to emergency medicine trainees within the North-West Thames Deanery. Subjects included the ‘No Secrets’ document, awareness of current policies and previous training in elder abuse.

Results
There were 19 responses (76%) from grades ST4-7. All were aware of elder abuse but only 16% had heard of the ‘No Secrets’ document. 42% had received teaching as part of Emergency Medicine training (100% had training in child abuse). 37% had no training in elder abuse at undergraduate or postgraduate level.

58% were unaware of a departmental policy on elder abuse whilst 74% were unaware of a trust policy. 63% did not know how to initiate action in a suspected case.

All respondents felt further training in elder abuse would be beneficial.

Conclusions
This survey highlights that frontline Emergency Medicine trainee knowledge of elder abuse is sub-optimal. It is imperative that trainees receive adequate teaching to ensure improved recognition and management. Geriatricians, as advocates for all aspects of the care of older patients, have a responsibility to raise awareness of this important subject. Further action should include tailored training and inclusion on the curriculum.

1. www.publications.parliament.uk
3. www.collemergencymed.ac.uk
USE OF VISUAL PAIN SCALES IN PATIENTS WITH DEMENTIA

L A G McLeod-Kennedy, F J Graham, H McMillan

Care of the Elderly Department, Crosshouse Hospital, Kilmarnock

Background
Pain is often under-detected and under-reported within the elderly. There is limited evidence on the use of visual pain scales in patients with dementia. We explored the use of visual pain scales for these patients in our department using the faces pain scale developed by Bieri et al and the horizontal line scale.

Innovation
Patients with current Adult with Incapacity (AWI) certificate for general medical and nursing care were included in this study. All were assessed using the verbal pain scale which is currently used within the department. Patients were allocated the faces pain scale or horizontal line scale. After a 2 week period the study was repeated following analgesia assessment. All pain assessments were carried out by 2 assessors independently of one another.

Evaluation
18 patients were identified with current AWI. 3 patients were unable to comply with any pain assessment. For patients who reported no pain verbally, the faces pain scale revealed higher pain intensity for 5 patients and the horizontal line scale for 3 patients. Analgesia was increased for patients reporting pain on any scale. There was good agreement between the two assessors for all pain scales (p=1.00). The results of the assessment repeated 2 weeks later are illustrated below:

<table>
<thead>
<tr>
<th></th>
<th>Pain Reported 1st Stage</th>
<th>Pain Reported 2nd Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Rating Scale</td>
<td>20%</td>
<td>7.7% (p=0.6)</td>
</tr>
<tr>
<td>Faces Pain Scale</td>
<td>62.5%</td>
<td>0% (p=0.026)</td>
</tr>
<tr>
<td>Horizontal Line Scale</td>
<td>57%</td>
<td>16.6% (p=0.26)</td>
</tr>
</tbody>
</table>

Conclusions
These results show that visual pain scales can be used in patients with dementia and give reproducible results. Visual pain scales can detect levels of pain even when patients verbally report no pain. When visual scales are used to assess pain, the prevalence of pain within this population is reduced.
STREAMLINING THE ELDERLY PATIENT PATHWAY: WHO IS BEST SUITED FOR ADMISSION TO AN ACUTE MEDICINE FOR THE ELDERLY (AME) UNIT?

M J Butler, R W S Biram

*Cambridge University Hospitals NHS Foundation Trust*

**Background**
All non-elective admissions to our hospital are seen in the Emergency Department (ED) and admitted directly to a speciality ward within 4 hours. This necessitates appropriate triage upon presentation.

**Innovation**
In 2008 an Acute Medicine for the Elderly ward (AME) was opened. Staffed with a higher ratio of nurses and physiotherapists, and with 7 day consultant cover, the aim was to develop a short-stay medicine for the elderly ward facilitating rapid turnover of acute admissions and improving patient flow.

**Evaluation**
Activity remains high, with 1202 discharges between November 2010 and October 2011, mean length of stay (LoS) 6.1 days. This compares favourably with a standard medicine for the elderly (DME) ward (682 discharges, mean LoS 16.1d).

Analysis of patient flow through AME over 3 months revealed 70.4% were discharged directly, 12.3% transferred to specialist ward areas, 11.9% were transferred to DME and 5.4% died. Inter-ward transfers reduce efficiency and worsen clinical outcomes and patient satisfaction. A review was undertaken to see if these could be minimised.

57 case records (29 transfers and 28 direct discharges as controls) were examined to identify factors indicating suitability for placement on AME (i.e. likelihood of shorter stay). Of a number of indices tested, the Charlson Co-morbidity Index (CCI) was the best indicator of need for transfer to a sub-acute bed. Median score was 4 for transfers versus 2 for those discharged directly (Mann-Whitney U = 219; Z=2.98; p= 0.0014). A CCI score of 4 or more indicated greater likelihood of need for a longer stay bed and may assist triage.

**Conclusions**
An acute medicine for the elderly ward has been a successful development, raising the profile and activity of our department. However patient selection remains problematic. The Charlson Co-morbidity Index could aid patient selection for a short stay facility.
COGNITIVE IMPAIRMENT AFTER LACUNAR STROKE: SYSTEMATIC REVIEW AND META-ANALYSIS

S Makin, J M Wardlaw

Division of Clinical Neurosciences, University of Edinburgh

Scope
Stroke is associated with cognitive decline and dementia. Lacunar strokes are small and do not cause acute cognitive disturbance, but might be linked to late cognitive decline due to an association with small vessel disease. We systematically reviewed evidence for cognitive decline after lacunar stroke.

Search Methods
We searched Medline and Psychinfo for studies that examined the frequency of post-stroke dementia or mild cognitive impairment (MCI) in patients with lacunar stroke. We excluded studies where there was no measure of cognition, or which did not provide details of cognition by stroke subtype.

Results
We found twenty studies of 2562 lacunar stroke patients, of whom 745 had either MCI or dementia when assessed up to one year after stroke. The pooled prevalence of MCI and dementia was 41\% (95\% CI 25-62\%) and 20\% (95\% CI 14-27\%) respectively. In previously non-demented patients, the pooled incidence of dementia was 14\% (95\%CI 9-20\%).

Eight studies (580 subjects) measured depression, though only two studies (126 subjects) accounted for in analysis. One study (46 subjects) measured pre-morbid IQ and two (70 subjects) measured other signs of small vessel disease; neither were accounted for in their analyses.

In previously non-demented patients with a first lacunar stroke, one study (n=21) found 9\% of subjects to be demented at three months post stroke, another study (n=64) found that 45\% had any cognitive impairment three weeks post stroke. Most studies included patients with previous dementia (7 studies, 1456 subjects) or previous strokes (12 studies, 1054 subjects).

Conclusions
Cognitive impairment is a common complication of lacunar stroke. However the true incidence is clouded by the inclusion of patients with prior cognitive impairment and recurrent stroke. Future studies should account for other factors that may affect cognition, including depression and pre-morbid IQ.
Background
Orthostatic hypotension affects up to 58% of patients with idiopathic Parkinson’s disease and is asymptomatic in 38.5% (Senard et al. J Neurol Neurosurg Psychiatry, 1997; 63:584-589). Measuring postural blood pressure (BP) is essential as it has implications on treatment, management of co-morbidities and risk of falls. The National Institute for Health and Clinical Excellence (NICE) currently recommend regular assessment for atypical features, which includes early autonomic involvement (NICE Clinical Guidelines 35). This survey aims to assess documentation of postural BP in our movement disorder clinics.

Sampling methods
Data was collected from 161 case notes (new and follow up attendees) by participants of the 19th Parkinson’s Academy at 9 national participating sites using a standardised proforma.

Results
56% of new patients and 39% of follow up patients had a postural BP documented at their initial assessment. Among the follow up patients, 33% had postural BP measurements taken at least every 12 months since diagnosis. The median duration of having a movement disorder diagnosis was 4.4 years (Q1 – Q3, 2.5 – 7.6yrs).

<table>
<thead>
<tr>
<th>Patient's Diagnosis</th>
<th>% of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkinson's Disease</td>
<td>87</td>
</tr>
<tr>
<td>Parkinson plus syndromes</td>
<td>3</td>
</tr>
<tr>
<td>Lewy Body Dementia</td>
<td>4</td>
</tr>
<tr>
<td>Vascular parkinsonism</td>
<td>3</td>
</tr>
<tr>
<td>Other diagnosis</td>
<td>3</td>
</tr>
</tbody>
</table>

Conclusion
Assessment for orthostatic hypotension is not routinely done as part of a new patient’s assessment or as part of a regular review in movement disorder clinics. We recommend that postural BP measurements be taken regularly to fully assess each patient. This means that atypical features are less likely to be missed and other factors can be taken into account such as a comprehensive medication review and falls risk assessment.
USE OF A COLOUR SORTING TEST AS A SCREENING TOOL FOR COGNITIVE ASSESSMENT IN A PARKINSON’S DISEASE CLINIC

A J Puffett, A Perini, C M James

Withybush Hospital

Background
Parkinson’s Disease is a complex condition with a wide range of motor and nonmotor symptoms. Addressing all the issues in a time pressured follow up clinic appointment can therefore present difficulties. Cognitive impairment is common but often not detected. The cognitive screening method used in our Parkinson’s Clinic was Mini-Mental State Examination (MMSE) combined with the Clock Drawing Test and three dimensional cube. Recent literature has suggested that MMSE is not considered sensitive in Parkinson’s Disease dementia and therefore alternative tests were trialled.

Innovation
A two minute Colour Sorting Test (CST) was performed during routine Parkinson’s Clinic review of twenty one patients alongside a Geriatric Depression Scale, Mini-Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA). The CST measures patient’s ability to sort twelve pieces by colour and shape.

Evaluation
21 patients were assessed, with a mean age of 73.7 years. 62% of the patients were male. A normal score on the CST is 4. A MoCA score of 26 or above is considered normal. In Parkinson’s Disease a MMSE score of 27 or above is considered normal.

<table>
<thead>
<tr>
<th>CST SCORE</th>
<th>MEAN MMSE</th>
<th>MEAN MOCA</th>
<th>RANGE MOCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>29.3</td>
<td>25.8</td>
<td>23-30</td>
</tr>
<tr>
<td>4-</td>
<td>26.3</td>
<td>21</td>
<td>20-22</td>
</tr>
<tr>
<td>2</td>
<td>26.8</td>
<td>24.2</td>
<td>21-27</td>
</tr>
<tr>
<td>1</td>
<td>27.2</td>
<td>20</td>
<td>17-23</td>
</tr>
<tr>
<td>0</td>
<td>21.3</td>
<td>15.6</td>
<td>7-21</td>
</tr>
</tbody>
</table>

The sensitivity of an abnormal CST score for detecting patients with an abnormal MoCA score was 75%, with a specificity of 50%. Sensitivity for detecting patients with an abnormal MMSE was 100% with a specificity of 43%.

Conclusions
The colour sorting test may be a useful screen to quickly identify patients in clinic who may have an abnormal cognitive assessment. If indicated from a low CST score, MoCA is the most discriminating next step. However a normal CST does not exclude cognitive impairment. Lower CST scores correlate with lower MoCA scores.
AMBER CARE BUNDLE: IMPROVING END OF LIFE DECISION MAKING

A Hopper¹, S Shouls², M Morris², L Briant², I Carey³

1. Department of Ageing and Health, Guy’s and St Thomas’ Trust, 2. Modernisation Initiative, 3. Palliative Care

Background
There are many patients whose recovery is uncertain who may be in the last 1-2 months of life where currently the quality of care planning is poor. End of Life is often focused on the dying phase in the last 24/48 hours of life. Bundles have been widely developed to improve reliability of clinical processes but have not been widely used to improve complex case management.

Innovation
The development of a four component care bundle (the AMBER Care Bundle)
1) Identification stage; 2) A four component intervention (Clear plan, Agreement of plan with nurses, decision on escalation of care and advance planning meeting with patient and carer; 3) Monitoring with daily review of progress by ward nurses.

Evaluation
The bundle was tested in 125 patients on wards specialising in cancer and geriatric medicine 113/125 of whom died within 100 days of starting, 72% of whom died in their preferred place of care. 49.6% of patients were discharged from hospital. Readmission rate at 30 days was reduced in AMBER patients (14%) when compared to patients who died within 100 days following discharge from the same wards (35%). Median duration on Amber was 5 days. Cardiac arrest rate fell from 0.35 to 0.05/1000 bed days when the bundle was introduced hospital wide.

Conclusion
A care bundle improved care and teamwork in areas of clinical complexity such as end of life care.
PREVENTING UNNECESSARY ADMISSIONS USING RADAR (RAPID ACCESS DME ASSESSMENT/REVIEW)

J M Diver, R W S Biram

Cambridge University Hospitals NHS Foundation Trust

Background
Emergency admissions account for approximately 65% of hospital bed days in England. Whilst an emergency admission may be necessary, the risks associated with hospitalisation of an elderly patient are not inconsiderable and in-patient stays may be protracted. Although much work has focussed on finding ways of reducing non-elective admissions, few interventions have evidence of efficacy and cost-benefit.

Innovation
In an unfunded pilot project, a Department of Medicine for the Elderly (DME) consultant held a mobile telephone, 0900–1700, Monday to Friday for one year (September 2010–11). The telephone number was distributed to local GPs, community matrons and the Emergency Department (ED) offering advice about frail older adults at risk of admission but not requiring emergency admission that day. Daily urgent outpatient slots were created within existing resources, enabling next-day assessment. The consultant provided real-time telephone advice regarding management and coordinated either admission, out-patient assessment or day case review as appropriate. In-patient referrals were seen by the consultant.

Evaluation
During the first year, 218 telephone calls were received. The majority were from GPs (117), an assessment and rehabilitation team based in the ED (45) and ED doctors (40). A few calls (≤5) were received from non-DME teams within the hospital, or community geriatric services. Of patients discussed or reviewed, 71 were admitted, 37 discharged, 55 reviewed in the urgent clinic and 15 admitted electively. Advice was sufficient in 40 cases. Clinical case review suggested that 113 non-elective admissions may have been averted over the year of the pilot (52%).

The 28 day readmission rate for all patients discussed with the RADAR consultant was 15.3% and the 3-month mortality 13.7%, comparable to baseline figures.

Conclusions
Implementation of the RADAR pilot was a safe and cost-effective way of reducing emergency admissions to the Medicine for the Elderly department.
ADMISSION PREVENTION OF THE FRAIL ELDERLY BY A GERIATRICIAN IN THE EMERGENCY DEPARTMENT

S Jones, M Ahsan, P J Wallis, N Fergusson, A MacNamara

Dept. of Elderly Medicine, Birmingham Heartlands Hospital, Heart of England Foundation Trust

Background
Frail elderly patients who are admitted to hospital are at risk of complications such as delirium, deconditioning and hospital-acquired infections. Involvement of a geriatrician in the decision to admit may reduce unnecessary admissions and their associated risks.

Innovation
A consultant geriatrician was based in the Emergency Department (ED) during normal working hours, initially for a pilot period, in order to assess frail elderly patients for whom the ED staff judged that acute hospital admission was either necessary or possible. The decision to admit was made by the geriatrician with the aim that medical, social and therapy interventions could take place outside of the acute hospital setting where safe to do so.

Evaluation
Outcomes were evaluated for 441 frail older patients assessed by a geriatrician in the ED. The geriatrician was able to discharge 260/441 (59%) of these. In order to allow safe admission prevention, 46% required outpatient follow-up and 38% required therapist assessment. Re-admissions were reduced by this intervention: 30/441 patients had already had an acute hospital admission with the same problem within the last 30 days, and the geriatrician was able to discharge 16/30 (53%) of these. The 7 day ED re-attendance rate was 10.2% (42/441) in this frail group of patients, higher than the overall hospital average of 7.4%. Of those admitted, 139/181 (77%) achieved direct admission to elderly care wards in keeping with NSF recommendations. Average length of stay (LOS) for those admitted was 14.2 days, compared with 15.7 days in non-rehabilitation elderly care wards. However, admission prevention measures in more stable patients will result in a higher proportion of unwell and complex patients reaching the wards, making significant overall LOS reduction difficult.

Conclusions
Based on these results, consultant geriatrician input supported by therapists within the ED is effective in admission avoidance of the frail elderly.
COMPLEX SYSTEM DESIGN – USING THE OOBeya TO REDESIGN INTERFACE
GERIATRIC CARE IN AN NHS FOUNDATION TRUST

W Gibson, P Harriman, K Silvester, T Downes

Sheffield Teaching Hospitals NHS Foundation Trust

Background
In 1997, the Toyota car company redesigned and brought to market the new five-door Corolla Matrix. This involved reinvigorating the design, introducing new features, and keeping the cost below a defined price point. To facilitate this complex redesign the company developed a new way of project management – the oobeya (ooh-bay-yuh), or “big room”.

Innovation
The big room is the centrepiece of a change management process which brings together all the stakeholders for regular, structured standing up meetings. It is the place where visual information is shared and interaction between stakeholders facilitates rapid decision making. The PDSA (Plan-Do-Study-Act) methodology of change is used to iteratively make small tests of change learning from both success and failure. Each step moves the team towards a successful and fully tested high quality product.

Geriatric care is complex. It is care that involves a broad spectrum of morbidities, often in complex combinations, multiple disciplines of staff and across the community/hospital interface. We describe the translation of the big room principals and concepts to change management in the NHS, with the aim of transforming the process of assessment and treatment of Geriatric patients in a large NHS Foundation Trust. We demonstrate testing, measurement and the use of statistical process control to redesign from a “post-take” model to an “on-take” model of real-time multidisciplinary assessment of patients. Bringing key stakeholders into our ‘Big Room’ has generated a bold enthusiasm to test new ideas in rapid small cycles.

Evaluation and Conclusion
Within two months of setting up our ‘Big Room’ we are challenging the artificial split of geriatric care into inpatient and outpatient silos whilst our testing of process has achieved a greater than 50% reduction in arrival to senior review, as well as producing an improvement in the quality of the service.
IMPACT OF GERIATRICIAN-LED CARE ON AN INTERMEDIATE CARE UNIT

E M Eeles¹, R E Morse¹, G Lazarus¹, J Murison¹, S Heade¹, H Wiltshire¹, R E Hubbard²

¹. Care of the Elderly Department, Cardiff and Vale NHS Trust, 2. University of Queensland, Centre for Research in Geriatric Medicine

Background
The development of alternatives to acute hospital care for older people has been a central tenet of the UK government National Health Service reforms. However, the evidence base for intermediate care remains inconclusive.

Innovation
Our innovation was the introduction of a consultant geriatrician to work with GP's from a single practice to develop a community hospital ward into a rehabilitation unit. Prior to the innovation, the 23-bedded ward functioned as a GP led unit, admitting older patients directly from the community or following acute hospital admission. Nursing establishment on the ward and therapy input remained unchanged.

In a retrospective study, all admissions to the ward between January 1st and June 30th in the years before and after the change in medical model were reviewed. Subsequent prospective multidisciplinary evaluation of patient centred goals was undertaken using Goal Attainment Scaling.

Evaluation
Average bed occupancy increased from 84% to 93% with no significant change in the number of admissions (175 versus 171). The number of patients admitted from the acute sector (33 versus 72, p<0.05) increased with no change in community admissions (57 versus 47, p=0.3). Urgent transfers back to the acute sector fell from 14(15.6%) to 9(7.6%) (p<0.05). Median length of stay increased from 17 days to 23.5 days (p=0.06), driven by greater need, [3 patients (3.3%) compared to 12 (10.1%) (p=0.06)], and wait [91.3 versus 121.8 days (p<0.05)], for institutional placement. Discharges to patients own home were unchanged (71% versus 70.6%; no significant difference).

Subsequent Goal Attainment Scaling was undertaken in 69 patients; average age 83.6years. Total number of goals: 180. Admission GAS: 36.2, pre-discharge GAS 50.4. Mean difference 14.1 (p<0.05). Effect size=1.7.

Conclusions
Intermediate care units can benefit from comprehensive geriatric assessment provided by collaboration between primary and secondary care resulting in an active, safe, efficient and patient centred environment for the rehabilitation of older people.
THE IMPACT OF A GERIATRICIAN ON SURGICAL WARDS

J Barber, J Fox, H Doran

Department of Elderly Medicine and Department of Surgery, Salford Royal Foundation Trust

Background
A recent National report showed only 37.5% of older people undergoing surgery receive 'good care' with the remainder falling short of this (NCEPOD, 2010). Amongst other recommendations was access to daily routine input from Elderly Medicine.

A retrospective case note audit in Salford Royal Foundation Trust of surgical admissions over the age of 65 years admitted for more than 72 hours during an eight week period demonstrated that of the 116 patients, 70 (60%) developed a medical complication. Medical care received was often fragmented (several different opinions from different clinicians) and relied heavily on the on-call service.

Innovation
Over a 3-month period, a single Consultant Geriatrician provided comprehensive specialist assessment of older adults within the peri-operative period during twice weekly 2-hour sessions on surgical wards and an on-demand service. All patients had a review of:
- Co-morbidities
- Social History
- Medications
- Cognition
- Delirium Screen
- Investigations

Following the intervention, all surgical ward doctors (10) were sent an anonymous e-survey to ascertain the service's impact.

Evaluation
► 51 patients were reviewed:
► 6 (12%) had multiple reviews and 4 (8%) were followed up in a Geriatric Medicine outpatient clinic.
► Medication reviews resulted in withdrawal of 39 unnecessary medications.
► 40 new diagnoses were identified, the commonest being delirium (13 patients, 25%) and pneumonia (6 patients, 12%).

The e-survey showed 100% of respondents believed the service was beneficial to both patient care and personal education and all recommended it be continued.

Conclusions
► Medical problems occur commonly in older people undergoing surgery and care is often fragmented.
► Regular Geriatrician input allows comprehensive specialist assessment and continuity of care.
► Patients and surgical trainee education benefit as a result of regular Geriatrician input.
GERIATRICIAN INPUT INTO NURSING HOMES REDUCES EMERGENCY HOSPITAL ADMISSIONS - 1 YEAR DATA AND EXPANSION OF THE NURSING HOME PROJECT

R Lisk¹, K Yeong¹, R Nari¹, M Baxter²

¹. Elderly Care Department, Ashford & St. Peter’s NHS Trust, ². Medical Director, Ashford & St. Peter’s NHS Trust

Introduction
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 that this group of patients spent 20,074 bed days over a 3 year period. The initial project over 3 months showed a significant reduction in emergency admissions from these 3 nursing homes. Due to this success, the nursing home project expanded to 6 nursing homes in October 2010 and then to 12 nursing homes in April 2011.

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

Evaluation
1 year data for the initial 3 Nursing homes. Table 1 showed a reduction in admissions during the intervention period which was significant. (chi square $\chi^2$= 8.1, $p$ 0.004).

Table 2 shows 6 month data for the 12 Nursing homes. This table showed a reduction in admissions during the intervention period which was significant. (chi square $\chi^2$= 9, $p$ 0.002)

Conclusion
The results show that geriatrician input into nursing homes had a significant impact on admissions from nursing homes. This reduction in admissions is sustained over a 12 month period. Expansion of the project also continues to show a reduction in admissions.
HOW WELL IS THE MENTAL CAPACITY ACT UNDERSTOOD BY FRONTLINE HEALTHCARE PROFESSIONALS?

J Bramble, A Earnshaw

St George’s Hospital, Tooting, London

Background
The Mental Capacity Act (MCA) was designed to provide a legal framework to ensure the protection of vulnerable adults who lack capacity to make their own decisions. Our aim was to assess how well the MCA is understood by clinical staff working in a tertiary London hospital two years after it’s implementation.

Sampling Methods
A questionnaire was designed looking at eight areas of the MCA with multiple choice questions testing individual’s knowledge. The questionnaire link was emailed to staff using the hospital email address book.

Results
219 responses were returned:
1) Overall 46% felt they had had no training in the MCA
2) Junior doctors performed better than consultants in all the questions except one
3) Nurses reported a higher percentage of training but performed less well
4) 21% of consultants thought that consent could be gained from family members and 7% that consent could be gained from a friend
5) Consultants performed better than junior doctors with regards to who can assess a patient’s capacity: consultants correct in 83% and juniors 77%.
6) Allied Health Professionals had a higher percentage correct on 2 out of the 7 questions.
7) CT1/2 were the best performing sub-group with no other group managing over 90% consistently

Conclusions
All frontline healthcare professionals should have a working knowledge of the MCA. It is reassuring that junior doctors performed well but Nurses lower scores show a perception that such decisions are out of their expertise. It is likely that the consultants will be disappointed that they performed less well than their juniors and showing lack of understanding on consent. Clearly further education is needed in this vital area. Potentially increased input on induction could be helpful but Care Group led small group teaching would likely be more effective. A MCA pro forma may be helpful to help guide the decision process and improve the documentation involved.
CREATING A NATIONAL COLLABORATION TO ENHANCE THE QUALITY AND SAFETY OF OLDER PEOPLE IN CANADIAN HOSPITALS

A G Juby¹, B Parke², B Liu³

¹. Faculty of Medicine and Dentistry, Geriatric Medicine, University of Alberta, Edmonton, ². Faculty of Nursing, University of Alberta, Edmonton, ³. Faculty of Medicine, Geriatric Medicine, University of Toronto, Canada

**Background**
There is accumulating evidence on effective care models and protocols designed for older patients. The efficiencies embedded within acute care systems and processes, and the omission of gerontologically sensitive interventions, gives rise to potentially preventable harm.

In Canada health care is primarily provincially managed and funded, with some federal government funding and overseeing principles.

The objectives of this project were: to establish a national collaboration to influence policy and practice change in hospital care for older adults in Canada; and to reach national consensus on recommended quality and safety standards.

**Sampling Methods**
A three phase method including: a scoping literature review; interactive workshops at three Canadian national conferences (Canadian Gerontological Nursing Association, Canadian Geriatrics Society, Canadian Association of Gerontology); round table meeting of Canadian experts (funding provided by the Canadian Institutes of Health Research) using nominal group process and Delphi electronic voting. These activities were designed to identify senior friendly initiatives underway across Canada, and to select priority content for development of national quality standards.

**Results**
The following dimensions were identified: care systems and processes of care; organizational policies, procedures and supports; social, emotional and behavioral environment; ethical considerations in clinical care and research; and physical environment and architectural design. Participants in the workshops and round table rated the priority issues in each of these domains. Pockets of excellence and innovation were identified.

**Conclusions**
Significant disparity exists across Canada in provision of elder care, and in the mandate for improvement of standards. We lack a national strategy to coordinate efforts and facilitate synergies to narrow the care gap. Partnerships are being developed with key national organisations to disseminate and promote the recommendations, with a goal to develop Accreditation Canada requirements to ensure the quality and safety of care of older people hospitalised in Canada.

A J Puffett¹, A Sekhar², M James³

¹. Withybush Hospital, 2. Royal Cornwall Hospital, 3. Acute Stroke Unit, Royal Devon & Exeter Hospital

B a c k g r o u n d
Despite 26% of strokes being cardioembolic in origin many cases of atrial fibrillation are undiagnosed. The SAFE study suggested that opportunistic screening could increase the identification of atrial fibrillation within primary care.

S a m p l i n g  M e t h o d s
The CHADS2 score on admission to the stroke unit was calculated for 101 cases of cardioembolic stroke and the general practitioner asked to complete a short questionnaire on the number of visits to primary care in the preceding year, pulse checks and documentation of atrial fibrillation. If atrial fibrillation had previously been diagnosed the decision and reasoning regarding anticoagulation.

R e s u l t s
Only 53% of patients with atrial fibrillation had a pulse check done in the year prior to admission. Of these patients, 80% did have a practice record of atrial fibrillation. The group of patients who did not have a pulse check were seen in primary care an average of three times in the year prior to their stroke (range 0 to 20) and therefore potentially missed the opportunity to detect atrial fibrillation. A significantly lower proportion of patients, 49%, had been picked up as having atrial fibrillation prior to their stroke if they had not had a pulse check than the group that had been. χ² test P = 0.004

Two thirds of the patients were aged over 75 and also had hypertension. All but three patients were reviewed in primary care within the previous year with blood pressure monitoring. However one third of these patients did not have any record of a pulse check. Of these patients aged over 75 with hypertension, who did have a pulse check recorded, 80% had a practice record of atrial fibrillation.

C o n c l u s i o n s
Opportunistic pulse checks can increase the diagnosis of atrial fibrillation. There is potential for increased screening in groups already undergoing primary care monitoring.
ASSOCIATION OF COGNITIVE FUNCTION WITH COLORECTAL CANCER SCREENING IN OLDER CHINESE ADULTS

D Y P Leung¹, A Y M Leung², I Chi³

¹. The Nethersole School of Nursing, The Chinese University of Hong Kong, Hong Kong, 2. School of Nursing, The University of Hong Kong, Hong Kong, 3. School of Social Work, University of Southern California, Los Angeles, CA, USA

Background
Screening for colorectal cancer (CRC) is recommended for older adults and identifying factors associated with the CRC uptake is of great concern. People with cognitive impairment are believed to be less likely to participate in screening. Few studies have looked specifically at the relationship among older adults although cognitive decline is prevalent in this age group.

Sampling Methods
Data collected from all 10,331 community dwellers who applied for long-term care services in Hong Kong in 2006. All the applicants completed the Minimum Data Set – Home care (MDs-HC) for screening. We included 2623 adults aged ≥60 who lived in their own home, had no prior/current home care services, and were not referred from clinical settings in the analysis. CRC and cognitive function were assessed by one item of whether they had taken fecal occult blood test/endoscopy in the past two years and the MDS Cognitive Performance Scale (CPS) respectively. The CPS ranges from 0-6, with higher scores indicating greater impairment. Data on demographic, health status, smoking, functional ability (IADL and ADL) and number of chronic diseases were also collected.

Results
Results from 1090 men and 1533 women, aged 60-104 (mean 79.4 yrs SD±7.5), show 12% of the respondents had undertaken a CRC screening test. Logistic regression results reveal that respondents with higher cognitive impairment score (adjusted OR=0.85, 95%CI=0.73-0.99, P=0.036) were less likely to have a CRC screening test after controlling the effects of other variables.

Conclusions
This study suggests that cognitive function is related to the uptake of CRC of older adults which contributes to a deeper understanding of the barriers to and facilitators of CRC in the literature.
HOW GOOD ARE WE AT ASSESSING VISION IN FALLS CLINICS?

M S Mehat¹, G Moussa², R Dutta³

1. Birmingham Midland Eye Centre, 2. School of Medicine, University of Birmingham, 3. Worcester Royal Hospital

Background
A third of people over 65 fall each year. Falls can result in serious injury and increased dependency. NICE guidelines recommend assessment of vision as a component of multifactorial risk assessment of fallers. We conducted a survey of Falls clinics to investigate how visual problems are assessed and managed and to identify barriers to good practice.

Sampling Method
An online survey was designed and disseminated via a link on the BGS website which was also supported by a reminder in the BGS newsletter. A link was emailed to geriatricians in the West Midlands and beyond, also to health visitors performing Falls assessment in Worcestershire. Results were collated over a 6-month period.

Results
Of Fifty-six responses received, 91% formally took a visual history. However, only 55% actually performed a visual assessment. Of those that formally assessed visual function the majority (84%) used the Snellen chart. 51% reported no formal definition of visual disability. Only 44% of participants assessed visual field as part of their visual assessment. In those places where visual assessment was not performed the principal reasons for not doing so included; lack of equipment (36%) and lack of trained staff (34%). 71% recorded type of glasses worn and 68% would not routinely refer to the Low Vision clinic.

Conclusion
Despite recommendations that all older patients presenting with falls should undergo a visual assessment, we found that only half of such patients actually had any form of objective visual assessment. This should be easily rectifiable since assessment of vision is cheap, quick and readily available. We suggest that greater awareness of poor vision as a risk factor, together with training on assessing visual acuity is needed. Furthermore we recommend that referral to community opticians or hospital eye services should form part of the written falls plan.
ARE CARDIOLOGISTS BETTER THAN GERIATRIANS AT LOOKING AFTER IN-PATIENT HEART FAILURE PATIENTS; A SURVEY OF IN-PATIENT MORTALITY AND FACTORS CONTRIBUTING TO IT?

E Tevendale, J Baxter

Department for care of the Elderly, Sunderland Royal Hospital

Introduction
The National Heart Failure Audit (NHFA) published in December 2010 identified that heart failure patients admitted to non-cardiology wards had a mortality twice that of cardiology wards and that this was only partly explained by age. The aim of this study is to look at how the in-patient mortality for elderly patients with heart failure varies between cardiology and care of the elderly (COTE) in Sunderland who have a specialist COTE heart failure service.

Sampling methods
We did a retrospective case note review of 20 consecutive heart failure discharges per month over an 11 month period from February 2010 to December 2010 in Sunderland Royal Hospital. These patients were those collected for the NHFA and hence were primarily coded for heart failure. Patients under the age of 70 and those not under the care of cardiology or COTE were excluded.

Results
Data on 157 patients was collected. One hundred and twenty-six (80.25%) were admitted under COTE and 31 (19.75%) under cardiology. Twenty-seven patients (17.2%) died as an inpatient. There was no significant difference between COTE and cardiology inpatient mortality (p=0.72) with 21 COTE patients (16.7%) and 6 cardiology patients (19.35%) dying. COTE patients were on average 4.4 years older than the cardiology patients and the mean admission estimated glomerular filtration rate (eGFR) wasn’t significantly different between the two groups. COTE patients that died were significantly older (on average 3.2 years older, p=0.022) than those that survived. In cardiology this tended towards significance (on average 4.9 years older, p=0.066). In cardiology and COTE those that died had a significantly worse admission eGFR (p=0.033 and p=0.002 respectively).

Conclusion
In Sunderland the majority of elderly heart failure inpatients are cared for by COTE. This survey showed no significant difference in inpatient mortality between COTE and cardiology for elderly heart failure patients.
PREDICTING READMISSIONS OF PATIENTS FROM AN ELDERLY CARE WARD

R O'Toole, P M F Campbell

Taunton and Somerset NHS Foundation Trust

Background
Eight per cent of patients discharged from hospital are readmitted within 30 days, costing the NHS around £2.2 billion a year. A 50% increase in emergency readmissions was observed in the NHS in England between 1998/99 and 2007/08 (1,2). The government announced in 2010 that hospitals in England may not be reimbursed for emergency 30 day readmissions. We need to reliably identify patients at risk to facilitate quality care within financial constraints. Readmission risk prediction models have been found to be unreliable (3). The aim of this study was to compare methods of identifying patients at risk of readmission to allow targeting of resource.

Sampling Methods
We compared two validated - RISC (Risk Identification and Stratification) and Blaylock and one unvalidated, but recognised, method of predicting risk of hospital readmission – the multidisciplinary team (MDT). Analysis was carried out on one day on two acute elderly care wards. Blaylock assessment and RISC scores were calculated. The MDT were asked – ‘Do you think this patient is at risk of readmission within 30 days of discharge?’

Results
Blaylock did not predict risk of readmission. RISC showed a trend to predict correctly but had high false positive and negative predictions. The best predictors were the MDT. Occupational therapists and physiotherapists had the highest number of true and low false positive predictions.

<table>
<thead>
<tr>
<th>Staff group</th>
<th>True Positive (%)</th>
<th>False Positive (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant</td>
<td>71</td>
<td>51</td>
</tr>
<tr>
<td>Junior Doctor</td>
<td>43</td>
<td>41</td>
</tr>
<tr>
<td>Nurse</td>
<td>60</td>
<td>15</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>86</td>
<td>41</td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td>86</td>
<td>26</td>
</tr>
<tr>
<td>MDT</td>
<td>71</td>
<td>36</td>
</tr>
</tbody>
</table>

Conclusions
Therapy staff, working in an MDT, evaluate multiple factors that contribute to readmissions and can predict those who are most at risk of readmission allowing us to focus resource appropriately.

References
1. www.dh.gov.uk
2. Department of Health. Payment by Results Guidance 2011-12
RELIABILITY OF ROUTINE BONE BIOCHEMISTRY TO PREDICT VITAMIN D DEFICIENCY IN THE OLDER PERSON

S K Seetharaman¹, Y Baoku², Q Wang¹, E Chua¹

1. Department of Elderly Care Medicine, Northwick Park Hospital, London, 2. Department of Clinical Chemistry, Northwick Park Hospital, London

Background
Vitamin D deficiency is common in the older people (Mosekilde L, Clinical Endocrinol. 2005;62(3):265-281). It results in muscle weakness leading to increased risk of falls, fractures (Pfeifer M 32 et al, Experimental and Clinical Endocrinology & Diabetes. 2001; 109(2): 87-92) and subsequently functional impairment. It is often suspected in patients with “abnormal” bone biochemistry and confirmed with serum 25-hydroxy vitamin D (25-OHD) measurement.

Sampling Methods
We retrospectively analysed serum corrected calcium, phosphate and alkaline phosphatase (ALP) in older subjects with falls (aged 65 years and older) attending the falls clinic. Subjects were categorised as “moderate” vitamin D deficiency (25-OHD < 25 but > 12.5 nmol/l) and severe deficiency (25-OHD <12.5 nmol/l). Fisher’s exact test was utilised for statistical analysis.

Results
Percentages in parentheses

<table>
<thead>
<tr>
<th>Vitamin D status (25-OHD level)</th>
<th>Low calcium (mmol/l)</th>
<th>Low phosphate (mmol/l)</th>
<th>Raised ALP (IU/l)</th>
<th>Low calcium, phosphate or raised ALP (all three)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25 nmol/l (n=95)</td>
<td>4 (4)</td>
<td>9 (10)</td>
<td>18 (19)</td>
<td>31 (33)</td>
</tr>
<tr>
<td>&lt; 12.5 nmol/l (n=24)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>3 (13)</td>
<td>3 (13)</td>
</tr>
</tbody>
</table>

One hundred and nineteen (41 males, 78 females) out of 633 subjects, mean age 82.7 (range 65-103 years) fulfilled the study criteria. Hypocalcaemia (0% vs 4%, p=0.58), hypophostaeemia (0% vs 10%, p=0.20), elevated ALP (13% vs 19%, p=0.56) and all three** (13% vs 33%, p=0.07) were not significantly more common in the severely deficient group compared to the moderately deficient group. Only 34 subjects (29%) displayed abnormal bone profile in this study.

Conclusions
Routine bone biochemistry measurements are not sensitive in alerting clinicians on vitamin D status in older subjects even in severe deficiency. Serum vitamin D measurements should be used instead.
THE COST OF DELIRIUM: A REVIEW OF CURRENT LITERATURE

S J Turpin¹, E Reynish²

¹. Royal Infirmary of Edinburgh, 2. Victoria Hospital, Kirkcaldy

Scope
Delirium is a common condition with many poor outcomes and an associated increased length of stay. The aim of this review was to explore the current literature on the cost of delirium and interventions to prevent delirium in all care settings.

Search Methods
A literature search of PubMed and MEDLINE and the Cochrane Library was performed using the MESH terms “cost” “delirium” and “economic”. The references of relevant publications were then searched manually.

Results
222 papers identified; 11 relevant publications within these results (7 studies, 1 editorial, 2 letters, 1 Cochrane review)

Initial and intermediate costs were estimated in 3 studies in different inpatient locations.

1. Medical unit: Delirious patients command higher total costs ($16,303-$64,424 increase per year per patient (p<0.001)) as well as increased costs per day of stay.
2. Surgical Ward:
   Costs increased in all areas of surgical care (delirium vs control)
   Nursing:$5,333.62 vs. $4,353.0 (p=0.023)
   Medical:$ 2,637.3 vs. $2,224.33 (p=0.063)
3. ITU (delirium vs control)
   Overall hospital costs:$41,836 vs. $27,106 (p≤0.002)

Longer-term costs were reviewed in 2 studies;

1 study of nursing home residents showed costs were reduced by $9,446 in patients who had received an intervention to prevent delirium. A study of a community dwelling care managed community showed patients with previous delirium cost $9,422 vs. $4,766 (control)

2 studies assessed the cost effectiveness of interventions to prevent delirium; 1 study showed they were cost effective, 1 study was equivocal.

Editorials and letters discussed indirect costs of delirium including informal care time, carer stress and financial days lost due to carer duties.

Conclusions
Results showed increased costs across all settings for patients with delirium. The studies were of variable size and quality. A Cochrane review identifies a lack of robust evidence in this area. Current evidence is sparse and there are no UK based studies.
INCIDENCE OF OSTEOPOROSIS AND OSTEOPENIA IN OLDER SUBJECTS WITH FALLS AND THE ROLE OF DEXA SCAN IN DIAGNOSING OSTEOPOROSIS

L P Thum, D J H Shipway, Q Wang, S Levy, M Shah, E Chua

Department of Elderly Care Medicine, Northwick Park Hospital, Watford Road, Harrow, Middlesex

Introduction
Osteoporosis is a well recognised risk factor for fractures. However, osteopenia may also be associated with increase fractures in older women[1]. PenCLAHRC, Peninsula College of Medicine and Dentistry, University of Exeter, 2. Centre for Research in Geriatric Medicine, University of Queensland, 3. Epidemiology and Public Health Group, Peninsula College of Medicine and Dentistry, University of Exeter There is little data on bone mineral density (BMD) measurements especially for older subjects over 80 years. We therefore obtained BMD measurements in older subjects with falls.

Methods
We measured the non-dominant forearm bone mineral density using peripheral DEXA in 806 older subjects attending a falls clinic from 2006 to 2011 and data subjected to chi-squared analysis.

<table>
<thead>
<tr>
<th>Age</th>
<th>Normal BMD % (T-Score&gt;-1)</th>
<th>Osteopenia % (T-Score:-1 to -2.49)</th>
<th>Osteoporosis % (T-Score:&lt;-2.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>65-79</td>
<td>33(n=33)</td>
<td>23(n=40)</td>
<td>29(n=29)</td>
</tr>
<tr>
<td>80+</td>
<td>20(n=38)</td>
<td>6(n=19)</td>
<td>19(n=37)</td>
</tr>
<tr>
<td>All</td>
<td>24(n=71)</td>
<td>11(n=59)</td>
<td>23(n=66)</td>
</tr>
</tbody>
</table>

Results
T-scores were obtained from 293 men (range 65-103 years) and 513 women (range 65-106 years). Subjects were sub-categorised into ages between 65-79 and >80 years. Abnormal BMD (osteopenia and osteoporosis) in both age groups was more common in women than in men: 65-79 years (77% vs 67%; $\chi^2=6.8$; $p=0.009$) and >80 years (94% vs 80%; $\chi^2=44.1$; $p<0.0001$). Osteoporosis in both age groups was also more common in women than in men: 65-79 years (46% vs 38%; $\chi^2=4.2$; $p=0.04$) and >80 years (77% vs 61%; $\chi^2=37.2$; $p<0.001$).

Conclusions
Both osteopenia and osteoporosis are more common in women than in men. Incidence is increased with advancing age. BMD measurement may not be essential before initiating bone protection, particularly for female subjects above the age of 80 years.

Reference
Introduction
Myotonometry offers an objective, portable, non-invasive way of testing viscoelastic properties of skeletal muscles. The present study examined inter-rater and within session reliability of using a device for measuring skeletal muscle characteristics in community dwelling older people.

Methods
Twenty one healthy older men aged 65-82 (mean 72.1, SD 4.9 years; body mass index, BMI 25.2, SD 3.41kg/m2) were recruited. Participants were excluded if they were medically unstable, had a history of neuromusculoskeletal conditions, taking medications known to affect muscle tone and movement, and had BMI > 30kg/m2. Participants were measured in supine lying on their dominant side with muscles in a relaxed state. Viscoelastic properties of rectus femoris (RF) and biceps brachii (BB) muscles including decrement, frequency and stiffness were measured using the MyotonPRO (Myoton Ltd, London). Damped oscillations of the muscles were recorded in response to a brief (15 milliseconds) mechanical tap applied perpendicular to the muscle surface. Two sets of 10 taps were taken for each muscle (mean of the two used for analysis) by two raters.

Results
The MyotonPRO showed excellent test-retest reliability for both raters and muscles (Intraclass correlation coefficients; ICC model 3,2 0.94-0.99). Inter-rater reliability for measuring RF was good to excellent for all three parameters (ICC 3,1 0.86-0.94). However in BB, only decrement demonstrated good inter-rater reliability (ICC 3,1 0.89), with frequency being 0.67 and stiffness 0.68.

Conclusions
The MyotonPRO demonstrated excellent intra and inter-rater reliability for objective assessment of RF of all three viscoelastic properties in asymptomatic older people. The device needs to be used with caution for BB, since inter-rater reliability was only robust for decrement. Reliability needs to be established between days and for other muscles in healthy populations and patients with various conditions, before the device can be applied in clinical populations.
TIGHT GLYCAEMIC CONTROL AND HYPOGLYCAEMIA IN ELDERLY PATIENTS ADMITTED TO HOSPITAL – ARE THEY OVERTREATED?

K Jackson, M Teh

Good Hope Hospital, Sutton Coldfield

Introduction
Intensive diabetes treatment in the elderly patients is associated with high risk of severe hypoglycaemia. There is no specific guideline for management of diabetes in elderly patients. Therefore, special considerations need to be given when treating elderly patients with diabetes. The aim of this study is to determine the correlation between hypoglycaemia, glycaemic control and pharmacological management of diabetes in the elderly patients.

Method
Retrospective interrogation of laboratory records to identify diabetes patients older than 75 years, with venous glucose of less than 4 mmol/l in a one year period. Data on Hba1c, patients’ demographics and diabetes treatments were extracted from electronic patients’ records.

Results
46 patients were included. There were 23 men and 23 women, with mean age of 81±5.1(mean+SD) years. The venous glucose of the group was 2.8±0.8mmol/l and Hba1c was 7.4 ±1.3%.

Twenty-three of the 46 (50%) patients were on insulin only with Hba1c of 8.2±1.3%. Eighteen of the 46 (39%) patients were on oral hypoglycaemic agents only. Of these, nine patients were on sulphonylurea alone with Hba1c of 6.2±0.7%, 6 patients were on metformin alone with Hba1c of 6.7±0.4% and 3 patients were on sulphonylurea and metformin with Hba1c of 7.9±0.9%. Five patients were on insulin and metformin with Hba1c of 6.8±0.8%.

Conclusion
Tight glycaemic control in the elderly patients is associated with hypoglycaemia. Glycaemic control in the elderly needs to be individualised. A significant proportion of hypoglycaemia episodes are associated with treatment with oral hypoglycaemic episodes alone and even metformin is associated with hypoglycaemia in the elderly diabetes patients.
CARE AND COMPASSION; A NOVEL MULTIFACETED PROGRAMME IMPROVES THE NON-TECHNICAL SKILLS OF CARING FOR FRAIL OLDER PEOPLE

R Schiff¹, H Jensen¹, P Jaye², P Mulligan¹, T Hetherington¹, A Ross³

¹. Department of Ageing and Health and 2. The Simulation and Interactive Learning (SaIL) centre, Guy’s and St Thomas’ NHS Foundation Trust, London, 3. NIHR Patient Safety and Service Quality Centre, King’s College, London

Introduction
The complexity and difficulties associated with nursing frail older inpatients has been highlighted by National reports of substandard care. The issues raised relate to virtues traditionally difficult to teach; communication, team working, dignity and empathy. Educational programmes to tackle these issues are rarely provided for nurses involved in such care.

Method
A multifaceted, multidisciplinary programme was designed to tackle these non-technical skills. It involved a culture change programme, leadership development, simulation training, releasing time to care modules and an art of caring workshop. All nursing staff (bands 2-7) within the 3 wards of an Elderly Care Unit attended the course. Staff surveys and interviews with staff and patients pre course and 7-9 week post course were used to evaluate the programme.

Results

Staff survey
41 nursing staff (46% of total) completed pre and post programme surveys using validated scales. Mean staff survey scores improved for patient care (pre 3.33; post 3.47; t = 2.3; p<.05; 95% CI .02-.26) and team work (pre 3.15; post 3.34; t= 2.4; p<.05; 95% CI .03-.35). Measures of empathetic orientation were high both pre and post programme (pre 4; post 4.1; t=.15; 95% CI -.17-.2).

Interviews
Staff interviews (n=40) showed positive changes with specific improvements in communicating with patients, nurse handover, team support, empowerment to speak out and engagement with senior colleagues. Multidisciplinary staff (n= 9) noted similar improvements. Patients and relatives (n=25) reported positively pre and post programme.

Conclusion
This programme is perceived by nursing staff and the rest of the multi-disciplinary team to have improved non-technical skills of communication and team working. Evaluation measures were not sensitive enough to determine a change in empathy or patient perception. The future challenge is to maintain and further develop these positive changes within this unit. Other Elderly Care Units could benefit from this programme.
REFINING PROBLEM-BASED LEARNING FOR POSTGRADUATE DOCTORS: EXPERIENCES OF HIGHER SPECIALIST TRAINEES IN GERIATRIC MEDICINE

J Wallace, A Thomson

Salford Royal Foundation Trust

Introduction
Problem-based Medicine (PBL) is a well-established tool in medical education for undergraduates. Its application for post-graduates is less well described. On-call rota issues and other work-related commitments make it more difficult to consistently deliver traditional PBL sessions to this professional group. Carry-over from one session to the next is particularly problematic. The aim of this study was to investigate the delivery of an alternative model of PBL to Higher Specialist Trainees in Geriatric Medicine in the North-Western Deanery.

Methods
Four topic-related cases were e-mailed to the trainee cohort 4 weeks prior to a teaching day. An enquiry-based learning (EBL) approach was encouraged to research the issues relating to each case. On the teaching day, trainees were divided into groups to discuss the cases. Four pre-designated trainees would then present each of the topics in 10-minute Powerpoint presentations. This would facilitate a further general group plenary discussion to close the session. This model was employed across 5 days of a module in Gerontology, part of a Masters programme in Geriatric Medicine. A web-based survey was used to compare the new model with the traditional PBL system previously used on the course. Free text responses were encouraged.

Results
31/41 trainees (75.6%) completed the survey. 67.7% and 19.4% felt that the new model was ‘Excellent’ or ‘Good’ respectively. 25/31 (80.6%) had previous experience of PBL at previous training days in other modules of the Masters programme. 21/25 (84%) felt that the EBL model was superior. 28/30 recommended that it be adopted in preference to PBL for future training days.

Conclusions
Free text responses supported the hypothesis that the PBL model logistics were unsuitable for such trainees due to working patterns. The course organisers for this Masters programme plan to adopt the new model for future modules.
KNOWLEDGE AND ATTITUDES OF MEDICAL STUDENTS AFTER A DEDICATED MODULE ON GERIATRIC MEDICINE

Q T H Anjum, W Harris

Department of Geriatric Medicine, Singleton Hospital, Swansea

Introduction
Medical students have limited knowledge of ageing, variable attitudes towards older adults and a low interest in Geriatric Medicine (GM) (Fitzgerald et al. Gerontologist. 2003;43(6):849-55). Understanding students' attitudes towards the older people may highlight ways to augment their interest in GM.

Methods
Effects of a new clinical GM module on medical students' knowledge and attitudes towards the older people were assessed as a planned service evaluation. Anonymous self rated questionnaire were completed by 4th year students before and after attending the module. The questionnaire included a validated geriatrics attitudes scale (Reuben et al.JAGS 1998;46:1425-30)

Results
73/78 (94%) students responded (mean age 23.7 years; 60% females). 63% had not done a similar module before. Self-rated knowledge in Geriatric domains improved significantly post-modules. Average scores on 10/14 items on the Geriatric attitude scale indicated significantly improved attitudes after completing the module. Students found Geriatric history taking an ordeal (p=0.005), due to challenging communication with older patients (61.6%) and non-specific clinical presentations in the older population (38.4%). After the modules 32% of the students wanted to pursue GM as a career vs. 7% pre modules.

Conclusions
A dedicated clinical GM module helps improve student's knowledge and perception of older people which in turn may influence their career choice. It can also improve their attitudes towards old people.

GM curriculums in medical schools should incorporate specific techniques to overcome the reasons for challenging history taking in GM in order to make it more appealing and engaging for medical students.
Influence of Body Mass Index and Waist Circumference on Frailty Status in European Men


Introduction
Frailty is a syndrome characterised by multisystem dysfunction and adverse health outcomes. The aim of this analysis was to determine the association between frailty and body composition in ageing European men.

Methods
3,369 men aged 40-79 years were recruited from eight European centres as part of the European Male Ageing Study (EMAS). Subjects were invited to attend for an interviewer-administered questionnaire, functional tests and assessment of height, weight and waist circumference (WC). Frailty was defined using the five dimensions in Fried’s phenotype model (FP) adapted to EMAS, i.e., sarcopenia, exhaustion, slowness, weakness and low activity. Men with 3-5 criteria were considered to be frail. Multinomial logistic regression was used to explore the relationship of body mass index (BMI) and WC (both categorised into tertiles) with frailty. Adjustments were made for age, centre, life-style factors and co-morbidities.

Results
3053 men who had complete FP data were included in the analysis. Mean age was 60±11.0 years; mean BMI 27.7±4.1Kg/m² and WC 98.5±11.1cm. Compared to those in the middle tertile of BMI, those in the lowest tertile (<26 Kg/m²) were more likely to be frail (Odds Ratio (OR) 2.3; 95% confidence intervals (CI) 1.3, 4.3). Compared to those in the middle tertile, those in the highest tertile (>29 Kg/m²) were also more likely to be frail, though the CI included unity (OR 1.3; 95%CI 0.7-2.3). For WC compared to those in the middle tertile, those in the lowest (< 93.5cm) and highest tertiles (> 102.3cm) were more likely to be frail (OR 3.1; 95%CI 1.6, 6.2) and (OR 1.4; 95% CI 1.2, 1.8), respectively.

Excluding the ‘sarcopenia’ criteria attenuated these associations, though the relationship between frailty and higher WC remained significant.

Conclusion
Increased WC is associated with frailty in middle aged and elderly European men.
HEALTH, WEALTH AND WELL-BEING IN OLDER PEOPLE

V A Goodwin¹, R E Hubbard², D J Llewellyn³, I A Lang¹

1. PenCLAHRC, Peninsula College of Medicine and Dentistry, University of Exeter, 2. Centre for Research in Geriatric Medicine, University of Queensland, 3. Epidemiology and Public Health Group, Peninsula College of Medicine and Dentistry, University of Exeter

Introduction
While the physical manifestations and clinical consequences of frailty have been extensively investigated, little is known about psychological aspects of frailty. Here we aimed to assess the association between frailty and subjective wellbeing in older people and investigate the impact of socioeconomic status on this relationship.

Methods
Data come from the English Longitudinal Study of Ageing (ELSA) a population-based cohort study. A Frailty Index was determined for each participant as a proportion of accumulated deficits. Subjective wellbeing was assessed using the CASP-19 instrument, and levels of household wealth quantified using a range of questions about financial, housing and other assets. Linear regression models were used to assess the relationship between frailty and wellbeing. In this analysis, we included 3230 adults aged between 65 and 79 who had complete data on frailty, wellbeing, and household wealth.

Results
There was a significant negative correlation between frailty and wellbeing; the correlation coefficient between Frailty Index and CASP-19 scores was -0.52. The relationship was robust to adjustment for sex, age, and health behaviours (smoking, alcohol consumption, physical activity) and persisted when participants with depressive symptoms were excluded from analysis. At different levels of frailty, those with greater wealth reported only marginally better subjective wellbeing.

Conclusion
Higher levels of frailty are associated with poorer subjective wellbeing. The association between frailty and wellbeing was not impacted by higher levels of household wealth, suggesting that socioeconomic resources cannot provide a buffer against the detrimental psychological effects of frailty.
PREVALENCE OF ANAEMIA IN HIP FRACTURE PATIENTS

A Michael, J Neilson, A Bindusri

Russells Hall Hospital, Dudley, UK

Introduction
Anemia is common in older people and the prevalence of anemia rises with advancing age. As the mean age of hip fracture patients is 82 years it is not unexpected that preoperative anemia is prevalent in these patients. There is also operative, and may be postoperative, blood loss contributing to anaemia in this group of patients.

Aim
To study the prevalence of anaemia on hospital admission and postoperative anaemia in patients with hip fracture.

Methods
Retrospective analysis of consecutive hip fracture patients admitted in a 6 months period to a UK teaching hospital. The notes and electronic records were studied. Haemoglobin on admission and within 48 hours postoperatively were collected. The WHO definition of anaemia was used; haemoglobin<13gm/dL for males and <12gm/dL for females.

Results
183 patients with hip fracture were admitted in the study period, the data of 6 patients were not completely available. 73% were female and 27% male. The mean age was 81.5 years. 91% were discharged alive.

For the female patients (130): on admission: the mean haemoglobin was 11.8gm/dL. 49% of patients were anaemic. 12% had haemoglobin < 10 gm/dL. Postoperatively: the mean haemoglobin was 9.7gm/dL. 93% of patients were anaemic. 38% were transfused.

For the male patients (49): on admission: The mean haemoglobin was 12.9 gm/dL. 47% of patients were anaemic. 8% had haemoglobin < 10 gm/dL. Postoperatively: the mean haemoglobin was 10.7 gm/dL. 94% of patients were anaemic. 10% were transfused.

Conclusion
Anaemia is common in hip fracture patients on admission and postoperatively.

Nearly half of all hip fracture patients were anaemic on admission to hospital.

Postoperatively; 93% of all hip fracture patients were anaemic. 32% patients received blood transfusion.

Preoperative and expected postoperative anaemia should be identified, assessed and managed appropriately.
HOW CAN AN EDUCATIONAL INTERVENTION IMPROVE OUTCOMES IN EMERGENCY ORTHOPEDIC SURGICAL PATIENTS?

E M Wong, D Y P Leung, S Y Chair

Hong Kong

Background
Traumatic limb fractures and the consequential surgery are stressful events. Anxiety is common problems for patient and it may lead to poor sleep satisfaction, delay in the rehabilitation progress and eventually affect the length of hospitalization of the patient. Empirical studies support educational intervention on post-operative outcomes for planned surgery; few have addressed older Chinese patients with emergency orthopaedic surgery.

Methods
This study aims to examine the effectiveness of an educational intervention (EI) on anxiety level, sleep satisfaction and length of stay among older patients undergoing emergency orthopedic surgery due to limb fracture.

A pre- and post-test design (quasi-experimental) was employed with patients assigned either to a control group (usual care) or an experimental group (usual care plus EI). The 30-minute EI consisted of information about anxiety coping strategies and breathing relaxation exercises. The outcome measures were anxiety level, sleep satisfaction scale and length of stay. Anxiety level and sleep satisfaction were measured before surgery and on the second day, fourth day, seventh day, during hospitalisation.

Results
A total of 125 patients completed the study (control, n=63; experimental, n=62). There was no significant difference between groups in term of demographic characteristics. Mean age was 55 years and 55% were male for all patients. The experimental group achieved a statistically significant lower level of anxiety (p<.001) and a higher level of sleep satisfaction (p<.001) compared with the control group. Although the experimental group had shorter mean length of stay (8.1 days; SD 5.8) when compared with the control (10.1 days; SD 7.3), the result was non-significant.

Conclusion
Patients may benefit from this EI in terms of reducing anxiety and improving sleep satisfaction, and the EI could be incorporated as part of routine care to prepare injured patients for the emergency surgery.
Does a Six Week Balance Course Improve Physical, Psychological and Quality of Life Measurements in a Community-Dwelling Falls Population?

I Marinescu¹, A D Kerr², S Skevington¹

¹ University of Bath, Department of Psychology, 2. Falls clinic, St Martin's Hospital, Bath

Introduction
This study investigated the effect of a 6 week balance course on physical, psychological and quality of life measurements in a falls' population.

Methods
Community-dwelling participants were recruited from a Falls Clinic who had fallen in the previous year. Questionnaires were completed before and after a 6 week (twice a week) balance course assessing their fear of falling (Short FES-I), and health-related quality of life (SF12-v2). This was matched with their functional mobility (Timed up & Go test), balance (Berg Balance) and balance confidence (CONFbal).

Results
There were 13 participants (8 female and 5 male) with a mean age of 79.8 yrs who had a mean number of co-morbidities of 5 and were taking on average 6 medications.

Paired sample statistical comparisons were made between each of the before and after results. There were significant improvements in Timed up & Go (p=0.002), Berg Balance (p=0.006), CONFbal (p=0.035), short FES-I (p=0.022) and the physical component of SF12-v2 (p=0.001).

There was no significant improvement in the mental component of SF 12-v2 (p=0.156) although on further sub-section analysis, there was a significant improvement in social functioning (p=0.004). It was also found that people who live with someone have a greater tolerance to bodily pain than people who live alone (p=0.006).

Conclusions
There are physical, psychological and health related quality of life (physical component) benefits of a six week, twice a week balance course in a community falls' population. There are also added benefits of improved social functioning as a result of attending the course. The lack of improvement in the other sub-sections of the mental component of quality of life suggests a possible role for psychologists working alongside therapists in a falls clinic.
Introduction
Blood loss after hip fracture surgery can be substantial and may lead to adverse patient outcome with longer hospital stay and increased inpatient mortality. Blood transfusion with aim to maintain haemoglobin (Hb) at higher levels may reduce length of stay, inpatient mortality and improve outcome. However, there is sparing evidence to prove that.

Method
We retrospectively gathered data from 501 patients admitted to Ashford & St Peters Hospital NHS Trust after hip fracture from Jan 2010 to May 2011. Postoperative haemoglobin level was checked. Patients were divided into four groups according to postoperative haemoglobin levels (Hb > 8 g/dl, Hb 8-8.9 g/dl, Hb 9-9.9 g/dl, Hb <10 g/dl) and were compared with mortality, length of stay and outcome.

Analysis of variance (F=0.302, p-value 0.824) showed that there was no significant difference in length of stay between levels of post-operative Hb. However, there was a significant difference in inpatient mortality between levels of post-operative Hb as suggested by chi-square with Yates' correction ($\chi^2 = 9.845$, p = 0.019).

Post-operative Hb was also associated with outcome (chi-square $\chi^2 = 17.819$, p = 0.037). Patients with higher post-operative Hb were more likely to be discharged home.

Conclusions
Our cohort showed that postoperative haemoglobin is related to inpatient mortality and outcome. Blood transfusion to higher post operative haemoglobin levels may reduce mortality. Larger randomised control trials are needed to confirm this.
DOES AN EVIDENCE-BASED INPATIENT EXERCISE INTERVENTION IMPROVE FUNCTIONAL OUTCOMES FOLLOWING HIP FRACTURE?

V Cattell¹, A Jewell²

1. Orthopaedic Physiotherapy Department, Guy’s and St Thomas’ NHS Foundation Trust,
2. Faculty of Health and Social Care Sciences, St George’s University of London

Introduction
Outcomes following hip fracture are often poor, with few people achieving their pre-fracture level of function. Physiotherapy during the immediate hospital rehabilitation period following surgery has been shown to determine functional recovery, but the content of this therapy is poorly defined. An evidence-based group exercise intervention was compared with standard physiotherapy to evaluate the intervention’s effectiveness on improving functional outcomes.

Method
A quasi-experimental study was conducted in a tertiary urban hospital. Forty one patients participated: 23 received standard one to one physiotherapy and 18 received the group exercise intervention, which incorporated muscle strengthening, aerobic activity, flexibility and balance exercises. Mobility and basic physical function were assessed pre and post interventions by the Timed Up and Go test (TUG) and the Cumulated Ambulation Score (CAS). Psychological wellbeing was measured by the Hospital Anxiety and Depression Scale (HADS).

Results
Participants receiving the exercise group intervention demonstrated a statistically significant improvement in TUG from initial measurement to discharge, compared to the control group (p = 0.015). No significant difference was found between the groups in baseline characteristics including gender, previous physical function or type of surgical fixation received. Both groups demonstrated an equal improvement in the CAS, however no significant difference was found between the two groups in either the CAS or HADS scores at point of discharge (p > 0.05).

Conclusion
Both groups demonstrated improvements. However a greater improvement in function was demonstrated by the participants receiving the evidence-based intervention, compared to those receiving standard physiotherapy. In addition, the successful delivery of postoperative group-based physiotherapy following hip fracture may have economic implications for service planners.
WHAT IS THE MINIMAL IMPORTANT DIFFERENCE IN CHANGE OF THE NORTHWICK PARK DEPENDENCY SCORE FOLLOWING STROKE REHABILITATION?

C Kirk¹, A Wagg²

1. NHS Camden, London, UK, 2. Institute of Healthy Ageing, University of Alberta, Canada

Introduction
Stroke rehabilitation is often undertaken in generic rehabilitation services, particularly for older people. Demonstration of efficacy of rehabilitation in terms of patient reported outcome measures is needed. The Northwick Park Dependency Score (NPDS) is used on the neurorehabilitation unit at St Pancras Hospital, London. The aim of this study was to establish the minimum change in NPDS associated with meaningful and important change to patients/surrogates.

Methods
All stroke patients entering the ward were eligible for entry. Each subject had an NPDS pre and post rehabilitation. Patients or surrogates provided impression of change in each domain. Examination of the relationship between NPDS change, and importance was assessed. Scores were dichotomised into better (better and above) and worse (no change, worse and very much worse) for analysis. Ethics committee approval was gained.

Results
30 subjects (16F,14M) mean (SD) age 72.3y (14.2) were included. Median length of stay was 43.5d. Mean (SD) admission NPDS (all patients) was 26.8 (11.8) and discharge 16.7 (14.6) p< 0.001. Change in domain subscores and minimal important difference are shown in the table.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Mean change classified “better”</th>
<th>Mean &quot;meaningful&quot; change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>1.32</td>
<td>1.32</td>
</tr>
<tr>
<td>Bed transfers</td>
<td>1.57</td>
<td>1.57</td>
</tr>
<tr>
<td>Toileting bladder</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td>Toileting bowels</td>
<td>2.25</td>
<td>2.25</td>
</tr>
<tr>
<td>Faecal incontinence</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Washing &amp; grooming</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Bathing/ showering</td>
<td>1.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Dressing</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Eating</td>
<td>0.43</td>
<td>0.43</td>
</tr>
<tr>
<td>Drinking</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Skin pressure relief</td>
<td>0.78</td>
<td>1.0</td>
</tr>
<tr>
<td>Safety awareness</td>
<td>0.4</td>
<td>0.38</td>
</tr>
<tr>
<td>Communication</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Making a snack/ meal</td>
<td>0.63</td>
<td>0.63</td>
</tr>
<tr>
<td>Medication</td>
<td>0.72</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Likewise, any worsening in NPDS was considered meaningful.

Conclusion
Any improvement in NPDS was classified as meaningful by patients and surrogates. Examination of a larger sample is required to explore strength of association with greater improvements in patient condition.
ALLOPURINOL USE ASSOCIATED WITH GREATER FUNCTIONAL GAINS IN OLDER REHABILITATION PATIENTS – A RETROSPECTIVE COHORT STUDY

L A Beveridge¹, L Ramage¹, M E T McMurdo², J George³, M D Witham²


Introduction
Oxidative stress may contribute to muscle weakness in older people via mitochondrial dysfunction. The xanthine oxidase system catabolises purines and produces reactive oxygen species as a by-product. Its inhibition by allopurinol reduces oxidative stress, improves endothelial function (and therefore muscle perfusion) and may result in ATP sparing. Inhibiting the xanthine oxidase system might therefore improve muscle function by these three mechanisms and lead to improved rehabilitation outcomes. We examined the association between allopurinol use and functional outcomes after rehabilitation in a cohort of older people.

Methods
Retrospective cohort study. Patients admitted to Royal Victoria Hospital, Dundee between 1999 and 2008 for rehabilitation were identified from a clinical database of routinely collected data. Data were collected on allopurinol use, antiplatelet therapy as a marker of vascular disease, sex, age, admission and discharge 20 point Barthel scores, and co-morbid disease. Patients without baseline or discharge Barthel scores and individuals who died during admission were excluded. Multivariate analyses were performed to examine difference between admission and discharge Barthel score, adjusting for age, sex, admission Barthel score, antiplatelet use and comorbid disease.

Results
3195 patients were included in the analysis. Mean age was 81.4 years (SD 7.6); 1288/3195 (40.3%) were male. 97/3195 (3%) were taking allopurinol on admission. Improvement in Barthel scores was higher in the allopurinol group than the non-allopurinol group (4.73 vs. 3.62 points, p=0.002). When adjusted for age, sex, admission Barthel, number of drugs and comorbid disease, adjusted improvement in Barthel score was still greater in the allopurinol group than non-allopurinol group (4.76 vs. 3.80 points, mean difference 0.94, 95% CI 0.27 to 1.61, p=0.006).

Conclusion
Allopurinol use was associated with improved functional outcomes in older rehabilitation patients.
DEVELOPMENT OF THE PREVENTION OF DELIRIUM (POD) PROGRAMME: A SYSTEM OF CARE TO PREVENT DELIRIUM IN OLDER PEOPLE IN HOSPITAL

M Godfrey¹, J Smith¹, J Green¹, F Cheater², J B Young¹, S K Inouye³

¹. Academic Unit of Elderly Care and Rehabilitation, University of Leeds, 2. Institute for Applied Health Research, Glasgow Caledonian University, 3. Harvard Medical School & Institute for Aging Research, Hebrew Senior Life, Boston

Introduction
We describe the development of an integrated, multi-component intervention and implementation process involving ward staff and volunteers designed to introduce, embed and sustain a delirium prevention programme in routine care in acute hospital wards. Comprising the development phase of a complex intervention (MRC 2008), the process has been informed by a theory-driven approach to introducing and embedding practice-change.

Methods
We employed a participatory, case study approach using mixed methods. Delirium Prevention Development teams, comprising doctors, nursing staff, therapists, health care assistants, voluntary services managers, volunteers and patient/carer representatives, were established in three hospitals (5 wards). Normalisation Process Theory was used as a sensitising tool for data gathering through workshops (n=12), qualitative interviews (n=30), observation of ward practices (approx 50 hours) and collection of ward documentation. Iterative data analysis fed into and provoked discussion within Development Teams, enabling comparative understanding of the significance of contextual factors on implementation which in turn informed our approach to introducing change.

Results
We found considerable support for action on delirium. Knowledge of delirium among staff was uneven with little understanding of the potential for prevention. The busy pace of ward life was a barrier to systematic, sustained attention to care practices evidenced to reduce delirium risk. There was consensus about the need to engage all staff in delirium prevention work and recognition of and enthusiasm for the potential to develop and expand the role of hospital volunteers in this. The outcome is an integrated and flexible Prevention of Delirium (POD) Programme to effect change in practice.

Conclusions
The context-sensitive approach to implementation means that while the mechanisms for effecting change in practice are standard, the content is assumed to vary depending on local policy and practice. POD is currently being tested in four further wards in three hospitals for feasibility and acceptability.
HIGH ADMISSION BARTHEL SCORES DO NOT PREDICT LACK OF BENEFIT FROM INPATIENT REHABILITATION

S C Tan¹, L Ramage², M E T McMurdo¹, M D Witham¹

1. Ageing and Health, University of Dundee, 2. Dept of Medicine for the Elderly, NHS Tayside

Introduction
Making best use of hard-pressed rehabilitation services is important. It is unclear whether patients admitted to rehabilitation who are relatively high functioning at admission benefit objectively from inpatient rehabilitation services. We analysed a large database of routinely collected rehabilitation data to investigate this question.

Methods
Analysis of prospectively collected routine clinical data from a single rehabilitation unit, 1999 to 2008. All patients admitted for rehabilitation with data on physical and psychosocial function at admission were included in the analysis. Age, sex, comorbid disease, 20 point Barthel score on admission and discharge, length of stay and indices of function including nutrition, swallow, kitchen function and mental health were recorded. Changes in functional scores between those with an admission Barthel score of <15/20 (group A) and those >=15/20 (group B) were compared using Student’s t-test and Pearson’s chi-squared test.

Results
3164 patients were included in the analysis. Mean age was 81.4 years (range 58 to 102), and 1474 (40.3%) were male. 427/3164 (13.5%) of patients had an admission Barthel >=15/20. 147/427 (34%) of group B failed to improve their Barthel score at all during their rehabilitation stay, compared to 456/2737 (17%) of group A (p<0.001). Median length of stay was longer in group A than group B (40 vs 17 days, p<0.001). Improvement in Barthel score between admission and discharge was higher in group A than group B (4.1 vs 1.4 points, p<0.001). Group B still gained improvements in walking, stair climbing, bathing, medication use and kitchen function compared to admission scores.

Conclusion
Even patients with high admission Barthel scores can benefit from rehabilitation, but gain less improvement than more functionally impaired patients. Crude Barthel scores do not provide sufficient basis to deny inpatient rehabilitation services to older patients.
LENGTH OF RESUSCITATION ATTEMPT VERSUS AGE – AN AGEIST APPROACH?

A R Haden¹, J Butler², Cardiff and Vale Resuscitation Department³

1. Department of Elderly care, University Hospital of Wales, 2. Resuscitation Department, University Hospital of Wales

Introduction
Older age is cited in the literature as being a risk factor for poor outcome from cardiac arrest, although the evidence is mixed. One aspect of resuscitation that may confound this evidence is that of length of resuscitation attempt. There is currently no data in regards to length of resuscitation attempt compared to age.

Methods
The Cardiff and Vale University Health Board resuscitation department database was reviewed. This contained data on all in-hospital cardiac arrest calls from 2008 until 2011. Age, arrival time of the cardiac arrest team and termination time of resuscitation were collated. Only those patients not surviving were reviewed in order to ascertain an exact termination time of resuscitation.

Results
There was sufficient data on 335 patients (age range 30 to 101). Mean length of resuscitation declined with age, with those aged over 70 having a significantly shorter median resuscitation time (6 minutes versus 13 minutes, p<0.0001), being less likely to receive greater than 10 minutes of resuscitation (p<0.0001, CI 0.51-0.74) and more likely to receive one full cycle or less of resuscitation (p<0.0001, CI 0.12-0.31). 49% of patients less than 90yrs received one or less cycles. Resuscitation time was not affected by time of day.

Conclusions
Older people have sub-optimal attempted resuscitation efforts which may be a factor in poorer outcomes in this group. The reasons for this may be complex but are likely to include ageist attitudes and the drawing of premature conclusions amongst resuscitation teams. The wider issue pertaining to timely “do not attempt resuscitation” decision making should be considered in the context of these findings.
Comparison of Hedonic Properties in Nutritionally Enhanced Biscuits and Oral Nutritional Supplement Drinks

Q Mishir1, V J Allen2, M A Gosney1,2, R Tsikritzi3, L Methven3

1. Royal Berkshire NHS Foundation Trust, London Road, Reading, 2. Clinical Health Sciences, University of Reading, London Road, Reading, 3. Department of Food and Nutritional sciences, University of Reading, Whiteknights, Reading

Introduction
Despite being highly treatable, malnutrition continues to be a problem in the elderly UK population particularly for those in hospital (The ‘MUST’ report, BAPEN, 2003). Oral Nutritional Supplements (ONS) drinks such as milkshakes and juices have been shown to be poorly consumed (Gosney, J Adv Nurs, 2003; 43(3):275-80) leading to the development of alternatives in efforts to improve compliance.

Methods
Free living elderly volunteers (n=19, mean age 75) were asked to taste two samples of a novel ‘enhanced’ biscuit (nutritionally equivalent to commercial ONS drinks) and two samples of a commercial ‘control’ biscuit (non-nutritionally enhanced) presented in random then asked to rate each sample using the 9 point hedonic scale.

Additionally, after tasting two ONS drinks (Ensure® juice and Nestle® Boost milkshake), they were asked to rank all products (biscuits and drinks) in order of preference.

Results
Comparison between the hedonic scores for the enhanced and control biscuits showed participants liked the control biscuit more than the enhanced biscuit, with scores of 5.13±2.29 and 7.18±1.36 respectively (p<0.001). Encouragingly 26% of participants liked the enhanced biscuit moderately or more.

Analysis of the rankings showed the control biscuit was the most preferred with the milk-based ONS drink being the least preferred (p<0.001). Although the rankings of the juice ONS drink tended to be higher than the enhanced biscuit this was not statistically significant (p=0.737). However, the enhanced biscuit was ranked significantly higher than the milk-based ONS drink (p<0.0001).

Conclusion
The enhanced biscuit was generally liked more than disliked when scored on the hedonic scale and was preferred over the milk-based ONS with a similar ranking to the juice ONS drink. This indicates that the use of nutritionally dense snacks may be more readily consumed than ONS drinks therefore improving compliance. However, further work is required to develop the biscuits further.
USE OF A FRAILTY INDEX BASED ON A COMPREHENSIVE GERIATRIC ASSESSMENT IN AN ACUTE CARE SETTING

M R H Rockwood¹, R E Hubbard², E Eeles¹, A Mitnitski¹, K Rockwood¹

¹. Dalhousie University and Capital District Health Authority, Halifax Nova Scotia Canada, 2. Centre for Research in Geriatric Medicine, School of Medicine, University of Queensland, Brisbane, Australia

Introduction
The clinical evaluation of frailty is of some interest. We evaluated properties of a frailty index from a comprehensive geriatric assessment (FI-CGA) completed in routine clinical practice in an acute care setting. The objectives were: 1. To evaluate whether the FI-CGA identifies acutely ill patients close to death. 2. To test the FI-CGA’s ability to capture loss of physiological reserve.

Methods
Patients were seen either in the emergency department or as inpatients at the Queen Elizabeth II Health Sciences Centre, Halifax, Nova Scotia, Canada. The FI-CGA was calculated from a standard CGA form that records information about cognition, affect, health attitude, communication, balance, elimination, nutrition, daily function, co-morbidity and medications. Loss of physiological reserve was measured by plotting mean FI-CGA value against age at each quartile. In community dwelling people, mean FI increases by ~0.03 per year on a log scale. In acutely ill patients, the rate of deficit accumulation is expected to be lower.

Results
Of 823 people studied, 508 (61.7%) were women, and the mean age was 81.9 +/- 8.0 years. 90-day mortality data were available for 486, and rose from 4.5% in the lowest quartile (FI <0.33) to 14.2% in the highest (FI >0.47). The FI-CGA was normally distributed around a high mean (0.40 +/- 0.12). The 99% limit was 0.67 with a maximum observed value of 0.74. The slope in relation to age was statistically distinguishable from 0 only in the lowest quartile (FI-CGA range 0.06 – 0.33), where it was 0.012.

Conclusions
As expected, the FI-CGA values were very high in these acutely ill patients. Mortality rose significantly in the higher three quartiles, and there was no increase in the mean FI-CGA with age. This suggests that these patients are as ill as they can be, and that physiological reserve differs on an individual basis.
SMOKING IN RELATION TO FRAILTY AND MORTALITY IN OLDER CHINESE ADULTS: RESULTS FROM THE BEIJING LONGITUDINAL STUDY OF AGING

C Wang¹, X Song², A Mitnitski³, P Yu³, X Fang¹, Z Tang¹, J Shi³, K Rockwood¹

1. Xuanwu Hospital & Capital Medical University, Beijing, China, 2. Division of Geriatric Medicine, Dalhousie University, Halifax, NS, Canada, 3. Institute of Geriatrics, the Beijing Hospital, Beijing, China

Background
Smoking is associated with worse health and greater mortality. In China, smoking is common, potentially exacerbating the health impacts of an already rapidly ageing population. The objectives of the study were to evaluate: 1. the relationships between smoking and frailty, and; 2. their impact on survival and health outcomes in older Chinese adults.

Methods
The Beijing Longitudinal Study of Aging is a representative cohort study with 15-year follow-up. Community-dwelling people (n=3257) aged 55+ years at baseline were followed between 1992-2007, during which time 51% died. Smoking status was determined using a self-reported questionnaire. A frailty index was constructed using both baseline and follow-up data, using 27 self-reported variables that excluded deficits directly attributable to smoking.

Results
Smoking was reported by 1,485 people (45.6%). Male smokers had the lowest probability of survival and the female nonsmokers the highest. Compared to female nonsmokers, the risk of death for male smokers was 1.66 (95% CI=1.46-1.88; P <0.001), while the female smokers survived no longer than male nonsmokers (0.97; P =0.748). On average, male smokers were frailer (0.18 ± 0.15) than male nonsmokers (0.14 ± 0.10) (P =0.030). No significant difference was found between female nonsmokers (0.20 ± 0.15) and smokers (0.20 ± 0.18; P =0.643).

Conclusions
Smoking prevalence was high in older Chinese population, especially in men. Smoking was associated with an increased death rate and health worsening. For the same level of the FIs, smokers tolerated deficits less well than did non-smokers. Effective smoking prevention and control would seem a reasonable public health strategy in China.
VISUAL SYMPTOMS IN PARKINSON’S DISEASE: A PATIENT SURVEY

E J Williams, B Kessel

Princess Royal University Hospital, Department of Elderly Care

Background
Non-motor symptoms (NMS) of Parkinson’s disease (Pd) are becoming increasingly recognised. Several papers have described a variety of visual problems in Pd. We know that the basal ganglia contain neurones related to eye movements and saccadic activity (Hunt LA et al. Optom Vis Sci. 1995Feb;72(2):92-9). Dopamine has a role in the retina where it appears to modulate the physical activity of the photoreceptors (Kesler A, Korczyn A. Practical Neurology. 2006;628-33). There is very little literature looking into fluctuations in visual symptoms (VS) or their impact on Pd patients’ quality of life (QoL).

Sampling Methods
Using a questionnaire, 30 Pd patients and 28 age-matched controls VS were surveyed. We aimed to establish 1) if VS are more prevalent in Pd patients, 2) which of the literature documented VS are more prevalent, 3) if Pd patients who report having motor fluctuations (MF) feel that their VS fluctuate along with their MF and 4) which VS have the most impact on QoL. T-test and Chi-squared tests were used.

Results
1. VS are statistically more prevalent in patients with Pd (P<0.001).
2. The most frequently reported VS were: blurred vision (47%), trouble reading (47%), hallucinations (43%) and dry eyes (37%).
3. 76% of patients with Pd who reported having MF felt that their VS fluctuated along with their MF.
4. VS with the most impact on QOL were: judging speed of objects, eyelid spasm, trouble reading, visuo-spatial / depth perception problems and ocular pain.

Conclusions
VS in Pd are common, 80% of the Pd patients surveyed reported a VS. VS should therefore be explored as part of initial and follow-up reviews. It is important to note that the most common VS are not necessarily those with the most impact on QOL. Further studies regarding visual fluctuations will be useful and may have an impact on driving assessment.
OVER-THE-COUNTER MEDICATION USE IN HOSPITALISED OLDER IRISH ADULTS – PREVALENCE AND SIGNIFICANCE

D Gilmartin¹, D O'Mahony²

1. University College Cork, 2. Cork University Hospital

Introduction
Over-the-counter (OTC) medication is commonly reported internationally amongst older adults. To date there have been no studies investigating the prevalence of OTC usage amongst older people in Ireland. This study aims to explore the prevalence of OTC usage as well as predictors of use and the potential for OTCs to cause adverse drug events (ADEs).

Methods
Patients aged over 65 who were acutely admitted to Cork University Hospital, a tertiary referral centre, were invited to participate in the study. Patients were interviewed about OTC usage. This was followed by a review of their medical charts to assess prescription medications, morbidities and adverse drug events. Morbidity was calculated using the Cumulative Illness Rating Scale (CIRS). ADEs were identified using the WHO-UMC criteria.

Results
207 patients were studied. 29% (n=60) were taking at least one regular OTC medication. OTC users demonstrated significantly lower levels of morbidity than non-users. Mean morbidity in users was 14 (IQR 8.25-16) versus 15 (IQR 12-19) in non-users. Mean difference in morbidity 3.034; 95% CI 1.417-4.651; p<0.01. OTC users showed lower numbers of prescription medications than non-users. Mean number in OTC users was 6 (IQR 3.25-8) and in non-users was 8 (IQR 5-11). Mean difference in numbers of prescription medications was 1.906; 95% CI 0.814-2.99; p<0.01. No statistically significant differences were demonstrated in ADE incidence between OTC users and non-users.

Conclusion
Lower morbidity is demonstrated in OTC using patients. Fewer prescription medications are consumed by patients taking OTCs. OTC usage did not demonstrate any significant relationship to ADE incidence. OTC usage in an Irish population is lower than that reported in many countries internationally. Allowing for the selected population, OTC usage in older adults appears a benign process.
POLYPHARMACY AND POTENTIALLY INAPPROPRIATE PRESCRIBING IN HOSPITALIZED OLDER IRISH ADULTS

D Gilmartin¹, D O'Mahony²

¹. University College Cork, ². Cork University Hospital

Introduction
Polypharmacy is a significant issue in the care of older adults. The relationship between the significant burden of medications consumed and adverse drug events (ADEs) is well established. Moderate evidence exists of a relationship between polypharmacy and potentially inappropriate prescribing.

Methods
Patients aged over 65 who were acutely admitted to Cork University Hospital, a tertiary referral centre, were invited to participate in the study. Those consenting underwent a review of their medical charts to evaluate numbers of prescription medications, morbidities and incidence of adverse drug events. Morbidity was calculated using the Cumulative Illness Rating Scale (CIRS). ADEs were identified using the WHO-UMC criteria. A modified GerontoNet ADE risk score was calculated from patient records with previous ADE occurrence excluded. Potentially inappropriate prescribing was determined using the STOPP/START criteria.

Results
207 patients were studied. The median number of prescription medications was 7 (IQR 4-11). Mean CIRS score was 14.8 (IQR 11-18). A clear statistical relationship was demonstrated between increasing morbidity and increasing prescription medication burden (Pearson correlation = 0.726, p<0.001). 29% of patients met STOPP criteria for inappropriate prescribing. No statistical relationship existed between number of medications and potential prescribing errors. Potential adverse drug events were identified in 13% (n=27). No statistical relationship was identified with increasing medication burden or prescribing errors. Modified GerontoNet score was statistically related to both prescription medication burden (Pearson=0.876, p<0.01) and morbidity (Pearson=0.702, p<0.01). No relationship was identified between modified GerontoNet score and ADE incidence.

Conclusion
A clear statistical relationship is demonstrated between increasing morbidity and prescription medication burden. Both morbidity and prescription medication burden are independently related to modified GerontoNet score. Potentially inappropriate prescribing does not appear to be a significant factor in ADE occurrence within this population. Within the confines of this small study population modified GerontoNet score does not appear useful in predicting ADE occurrence.
CHANGES IN MEDICATION PRESCRIBING FOR THE OLDEST OLD

R E Hubbard¹, I A Lang², V Goodwin², D J Llewellyn²

1. Centre for Research in Geriatric Medicine, The University of Queensland, Princess Alexandra Hospital, Brisbane, Queensland, 2. Public Health and Epidemiology Group, Peninsula Medical School, University of Exeter, Exeter

Introduction
The implementation of guidelines for the management of chronic disease has resulted in an increase in the cost and number of prescribed medications. However, in the oldest old, the evidence for pharmacotherapy is often equivocal and polypharmacy has important negative consequences. Older people on ≥ 5 medications are at significantly higher risk of adverse drug reactions, including delirium and falls.

Methods
Here, we used data from the Health Survey for England (N = 6562) to investigate changes in drug prescribing for people in the UK aged ≥80 years between 1995 and 2009.

Results
Over this 15 year period, the proportion of older people prescribed 5 or more medications increased from 20.3% (95% CI 16.9 to 21.7) to 51.4% (95% CI 44.1 to 58.6) with those on ≥ 10 medications rising from 1.1% (95% CI 0.2 to 2) to 8.3% (95% CI 6.1 to 10.6). The prescription of anti-platelet, anti-hypertensive and lipid-regulating drugs significantly increased (to 18.2%, >10% and 8.6% respectively). Calcium and vitamin D supplements, on the other hand, were consistently prescribed to fewer than 2% of this population.

Conclusions
The increasing prescription of cardiovascular medication is driving significant polypharmacy in the oldest old. Other agents with a clear evidence-base in older people continue to be under-used.

Strategies are needed to promote appropriate, individualised prescribing in this at-risk population.
BACTERIURIA AND DELIRIUM

D J F Mayne, J Nicholas, K Fraser, S Ager, M Medhi, A Jaafar

The Newcastle Upon Tyne Hospitals

Background
Asymptomatic bacteriuria is common in the elderly population. It is widely accepted that antimicrobial therapy in patients with asymptomatic bacteriuria does not improve morbidity or mortality and may result in adverse side effects. Accepting that delirium can be caused by any systemic insult, we sought to determine whether patients with apparently asymptomatic bacteriuria could be at risk of delirium.

Method
A list of positive urine samples of patients over 65 attending EAU were obtained from microbiology. The medical notes were then reviewed to determine whether patients had symptoms of urinary tract infection (UTI), fever, raised inflammatory markers (WCC>11 or CRP>40) or delirium (according to the Confusion Assessment Method). Those with evidence of any other illness contributing to their presentation were excluded.

Results
Of 36 patients, 21 had symptoms of UTI, fever or raised inflammatory markers and 15 were apparently asymptomatic with no elevation of inflammatory markers. On comparing the symptomatic and asymptomatic groups, there were no significant differences between urine dipstick results, urine white cell count or culture results. 9 patients had delirium; 6 were symptomatic, 3 asymptomatic with no alternative cause for delirium. Of the delirious patients, 7 had urine white cell counts greater than 200. Only one delirious patient was known to have a background of cognitive impairment.

Conclusions
A quarter of patients with bacteriuria had delirium. One third of patients with delirium had no symptoms or markers of systemic inflammation or alternative cause of delirium found. The majority of delirious patients had a high urine white cell count. It is therefore possible that the presence of bacteria in the urine with raised urinary white cell count can be a cause of delirium without causing a systemic inflammatory response or symptoms.
IS IT FEASIBLE TO RECRUIT MEDICAL INPATIENTS WITH DELIRIUM INTO A RESEARCH STUDY?

T A Jackson¹, P Nicolson¹, B Sheehan²

1. University Hospital Birmingham, 2. University of Warwick

Introduction
The major limitation in researching delirium in medical inpatients is the practicality of recruitment. The majority of delirium research is limited to surgical inpatients for this reason where recruitment can be done prior to the elective procedure. Medical inpatients present as an emergency and where delirium is present will often lack the capacity to consent to take part in such studies. As part of an ongoing pilot study to investigate evidence of chronic cognitive impairment in medical inpatients with delirium we also wanted to investigate the feasibility to recruit this group of patients into research.

Methods
Admissions to a single medical ward were screened for the presence of delirium as part of best practice with the CAM assessment and diagnosed with delirium against DSM-IV criteria. Those patients with delirium were then recruited by consent through a proxy with detailed information sheets. We excluded those too acutely unwell to assess or dying. Our protocol was considered and approved by Bradford research and ethics committee (ref. 10/H1302/84).

Results
Of the 43 patients screened 14 were identified as having delirium (mean age 84yrs). Of the 14, we were able to recruit 7 (50%) patients through proxy consent while of the remaining 7, 3 were in the palliative stage of disease and a proxy was not available in 4. Notably, no proxy we approached to provide consent for the study refused.

Conclusions
We have demonstrated an effective protocol to identify and recruit medical inpatients with delirium by screening prior to proxy consent. However we have also demonstrated that half of those with delirium were unable to be recruited mainly due to lack of available proxy. Where a proxy was available, we have demonstrated 100% agreement to consent to research.
RELIABILITY AND ACCEPTABILITY OF SNIFF NASAL INSPIRATORY PRESSURE AND PEAK INSPIRATORY FLOW MEASUREMENT IN ADULTS OVER 65

N Barnes, S Agyapong-Badu, B Walsh, D Samuel, M Stokes

Faculty of Health Sciences, University of Southampton, Hampshire

Introduction
Sniff nasal inspiratory pressure (SNIP) and peak inspiratory flow (PIF) are portable, relatively new methods of measuring respiratory muscle strength. We aimed to investigate their reliability and acceptability in older participants.

Methods
Twenty-one self-reported healthy adults (65-84 years, 13 females) were studied. Respiratory muscle strength was measured using SNIP (MicroRPM), PIF (In-Check Oral), and peak expiratory flow (PEF) (Mini-Wright Standard) for comparison. Participants were tested in a sitting position on two occasions, one week apart. The best of three attempts for PIF and PEF, and five for SNIP were recorded. A semi-structured interview obtained feedback on the tests in relation to ease of completion and preference ranking. Reliability was tested by intra-class correlation coefficient (ICC), standard error of measurement (SEM), minimal detectable change (MDC) and Bland and Altman plots.

Results
For between-day reliability of SNIP, PIF and PEF, the ICCs were 0.76, 0.92 and 0.95 respectively. SNIP’s SEM (11.94 cmH2O) and MDC (33.10 cmH2O) were at the least 61% higher than for PIF or PEF.

Not all five SNIP readings were obtained on four occasions, due to dislike of test, nasal congestion and inability to perform the manoeuvre correctly. Participants rated SNIP as the least easy and comfortable test to perform, and the least preferred test to complete, followed by PIF. Neither the participants nor operators found the SNIP easy to perform, with incorrect technique, displacement of the nasal probe and submaximal effort observed.

Conclusions
SNIP was the least preferred and least reliable measure; ICC falling below the recommended 0.90 to ensure validity for clinical measurements. The PIF and PEF showed excellent reliability, with participants finding PEF the most acceptable.
IMPACT OF EARLY DISABILITY ON SIX MONTH PHYSICAL FUNCTION AFTER STROKE: A LATENT PROFILE ANALYSIS

T Munyombwe¹, E A Teale², R West¹, K Hill¹, Y K Tu¹, J Young³

¹. Centre for Epidemiology and Biostatistics, University of Leeds, ². Academic Unit of Elderly Care and Rehabilitation, University of Leeds

Introduction
Assessment of initial post-stroke disability is essential to guide development of patient centred rehabilitation goals. Latent profile analysis (LPA) is a statistical method that defines homogenous subgroup classifications according to patient characteristics (classes). These classifications may be useful to clinicians for treatment planning. We used LPA to classify patients according to multiple baseline stroke disability measures and examined their relationship with six month functional outcome.

Methods
312 patients recruited into a prospective cohort study from three stroke units were included. Process, case-mix and stroke severity variables were collected at baseline (Barthel Index (BI), Nottingham Extended Activities of Daily Living (NEADL) and GHQ_12). NEADL was collected at six months.

Latent classes were formed on BI, GHQ-12 and the four NEADL domains. Age, sex, pre-stroke disability, living alone and urinary incontinence were included in a single step regression model to form the classes. Latent classes were validated through multinomial regression modelling. The effect of these classes on six month NEADL was explored through a multivariable regression model (using outcomes data from 165 patients).

Results
A three class solution was chosen, labelled mild, moderate and severe. Baseline BI and NEADL subscores increased, and GHQ_12 decreased from class 1 (severe) to class 3 (mild).

Compared with patients in the mild class, patients in the severe class were more likely to have had a previous stroke (16/43 (37.2%) vs 16/202 (7.9%)) and less likely to have been independent prior to stroke (23/43 (53%) vs 201/202 (99%)).

Adjusting for care processes, patients in the mild class had significantly higher six month NEADL scores than patients in the severe class.

Conclusions
The LPA was informative in defining three baseline stroke severity typologies. Baseline class membership is associated with functional outcome at six months. These classifications may be useful for stratified randomisation, treatment planning or for case-mix adjustment.
MRI ABNORMALITIES IN ACUTE ISCHAEMIC STROKE ASSOCIATED WITH MALIGNANCY

K Nagaratnam¹, L Spiers², C J Durkin³

1. John Radcliffe Hospital, Oxford, 2. Royal Berkshire Hospital, Reading, 3. Stoke Mandeville Hospital, Aylesbury

Introduction
Thrombo-embolism occurs in patients with both known and undiagnosed malignancy. Stroke may occur in up to 15% of patients with malignancy, but cerebral infarction as the first manifestation of an undiagnosed malignancy is uncommon. The postulated mechanisms for stroke include non-bacterial thrombotic endocarditis and pro-thrombotic state.

We report a characteristic pattern of MRI abnormality which allows early recognition of stroke associated with malignancy.

Method
Review of our stroke database for 2009-11 revealed 22 patients (median age 73.5 years) with acute stroke who had associated malignancy. All underwent MRI scanning with diffusion-weighted imaging sequences as the first imaging modality. Admission ECG was performed to rule out atrial fibrillation (AF).

Results
Multiple territory infarction was the commonest imaging abnormality (19/22). Stroke was the first clinical presentation of malignancy in nine patients, seven of whom had multiple territory infarction in the MRI. Only one of them had documented AF. All these patients had CT scanning of thorax and abdomen that confirmed the presence of malignancy.

Thirteen patients had pre-existing metastatic malignancy. Of whom twelve presented with multiple territory infarction. Two of them had documented AF.

The most frequent malignancy was lung (13/22) followed by breast, gastro-intestinal and prostate.

Conclusion
Multiple vascular territory infarction in the absence of AF may indicate an underlying malignancy and further screening tests are indicated in such patients.

Our findings in this important group of patients provide further evidence in support of MRI as the imaging modality of choice for acute stroke.
TYPE OF FEEDING REGIMEN AND BODY COMPOSITION CHANGES AFTER STROKE

M W Kafri, L Hooper, D Doherty, J F Potter, P K Myint

Norwich Medical School, & Norfolk and Norwich University Hospital, Norwich

Background
Malnutrition after stroke is common and can lead to tissue catabolism and body composition changes and may have impact on stroke recovery. We investigated body composition changes during acute hospital stay after stroke.

Method
Ischaemic stroke patients admitted to an acute unit were prospectively recruited between January-July 2011. Patients’ demographics, anthropometric, biochemistry and body composition variables (BioScan 920-2, Maltron International Ltd, Essex, UK) were measured on admission and discharge. Mean fat free mass (FFM), fat mass (FM), and protein mass (PM) change and mean changes/day between admission and discharge were compared between (soft mashed/pureed diet (SMP) and Nil-By-Mouth (NBM)) vs. normal feeding (NF) and between SMP vs. NBM.

Results
40 patients were recruited (males 55%) with a mean age of 69.8(±10.5) years (range 50-89), mean length of stay=4(±4.1) days (range 2-24) of whom 17 had lacunar, 12 posterior, 5 partial anterior, and 6 total anterior circulation infarcts. Higher loss in PM was observed in SMP+NBM (N=11) compared to NF (N=29) group; -1.0(1.6) vs. -0.3(1.5) kg; (p=0.2). In SMP (N=6) vs. NBM (N=5) diet groups overall FFM difference was +0.8(2.1) vs. -1.9(1.9) kg (p=0.054), mean daily FFM change was +0.03(0.4) vs. -0.50(0.5) kg/d; p=0.1. Overall FM difference was -0.2(1.5) vs. +1.4(2.6) kg; p=0.22, and mean daily FM change was +0.02(0.4) vs. +0.50(0.6) kg/d; p=0.14, respectively.

Conclusion
PM loss was larger in non-NF patients group compared to normally fed patients. There were trends in reduced FFM and increased FM at discharge in NBM compared to SMP group, though not statistically significant due to relatively small sample size. Understanding these changes may, however, help designing targeted interventions in post-stroke nutritional care.
PLATFORM PRESENTATIONS

Session J  09:00 - 10:30  ABSTRACT BOOK NOS  84-85
Session K  09:30 - 10:30  86-91
IMPROVING CLINICAL MANAGEMENT IN CLOSTRIDIUM DIFFICILE: FAECAL CALPROTECTIN DOES NOT PREDICT SEVERITY, RECURRENCE OR MORTALITY

J A H Foster1,2, J E C Butt2, J Bell1, A Goff1, C Morgan1, J Hancock1, C Carmichael1, E C Keedwell2, S L I Michell2, R P Sheridan1

1. Royal Devon and Exeter Foundation NHS Trust, 2. University of Exeter

Introduction
Clostridium difficile infection (CDI) has a preponderance and higher all-cause mortality in patients over 65 years (McGowan et.al., J Hosp Infect, 2008, 77(1):11-5). The Department of Health (DoH) proposed a severity score (HPA 2008), but this lacks statistical validation.

Faecal Calprotectin (FC) is “gold standard” for measuring intestinal inflammation and has been shown to predict disease activity, treatment response and relapse (Costa et.al, Gut, 2005; 54(3): 364-8; Tibble et.al., Gastroenterology, 2000; 119(1):15: 22) in IBD.

This study explores whether FC could be used alongside clinical assessment to guide management in inpatients with CDI.

Methods
CDI isolation ward inpatients with proven CDI April 2007 to August 2009 were included. Patients without a stored stool sample or <50mg were excluded.

Outcome measures were severity, recurrence and 30-day mortality. Clinical information and mortality was retrospectively collected.

Faecal samples were tested with an FC enzyme linked immunoassay (ELISA).

Analysis was conducted using PASW Statistics 18 (SPSS Inc). Non-parametric independent median tests were applied to outcome measures. Bonferroni correction was applied.

Results
168 cases proceeded to statistical analysis. Mean age 78 (SD 13.4).

56 (33.3%) had mild, 22 (13.1%) moderate, 78 (46.4 %) severe and 12 (7.1%) life-threatening CDI on DoH score, with no significant difference in FC between severity categories (p=0.308; X2 = 3.6; df=3;N=168).

There was no association between FC and mortality (p= 0.852; X2 = 0.035; df=1;N=168) or CDI recurrence(p= 0.864; X2 = 0.030; df=1;N=168).

FC levels were analysed against CRP, WBC, neutrophils, % creatinine rise, platelets and serum albumin. Pearson correlation indicated that only WBC positively correlated (R2= 0.322) with FC levels (p=0.05; N=166).

Conclusions
FC is elevated in CDI but is not a useful marker of severity, recurrence or mortality.

Further research is required to establish an evidence-based CDI severity and mortality tool. We would not recommend FC measurement in future work.
DO OLDER MEDICAL IN-PATIENTS REQUIRE HELP AT MEALTIMES? THE SOUTHAMPTON MEALTIME ASSISTANCE STUDY (SMAS)

H C Roberts¹,², A L Pilgrim²,³, K A Jameson², M Elia³, C Cooper², A Aihie Sayer¹,², S M Robinson²

1. Academic Geriatric Medicine, 2. MRC Lifecourse Epidemiology Unit and 3. Biomedical Research Unit in Nutrition Diet & Lifestyle, Faculty of Medicine, University of Southampton

Introduction
Poor nutrition in hospitalised older people is associated with poor clinical outcomes. Its importance is widely recognised, and is highlighted by the BGS dignity campaign and Age UK. The aim of this study was to assess the dietary intakes of a group of older medical inpatients, to describe the prevalence of insufficient intake and to determine the nature and extent of help they required at mealtimes.

Methods
258 24-hour dietary records were completed for female patients on two acute elderly care wards between April and December 2010. Consumption at seven drinks rounds and three mealtimes was assessed by recording the weight of each food item delivered to the ward and weighing all food left over. Consumption of sip feeds and other food was recorded. Energy and nutrient intakes were calculated using UK food composition tables and manufacturers’ data. Assistance required by patients at mealtimes was assessed by the researcher.

Results
The age of the patients ranged from 71 to 101 years. Median daily energy intake was 1042 kcal (IQR 718-1365) and the median daily protein intake was 40.1g (IQR 27.3-55.5). Of the 231 food diaries where the patient’s weight was available, 171 (74%) had a protein intake <1.0g/kg. Assistance at mealtimes was required by more than half (60%) the patients assessed.

Discussion
These patients had low intakes of energy and protein. Their requirement for assistance at mealtimes places a burden on ward nurses who may be unable to meet this need with current staffing levels. The impact of providing additional volunteer assistants at mealtimes on the food intakes of older patients needs to be evaluated.
HOW USEFUL ARE THE EQUATIONS MDRD AND CKD-EPI AT ESTIMATING GFR IN OLDER PEOPLE

H S Kilbride¹, P E Stevens¹, G Eaglestone¹, S Knight¹, J L Carter³, M P Delaney¹, C K T Farmer¹, J Irving¹, S E O’Riordan², R N Dalton⁴, E J Lamb³


Introduction
Glomerular filtration rate (GFR) is one of the primary measures of kidney function. It is most commonly estimated using equations that adjust serum creatinine concentration for age, race and gender. The Modification of Diet in Renal Disease (MDRD) equation is widely used, but is known to underestimate GFR at higher levels. The Chronic Kidney Disease (CKD)-Epidemiology Collaboration (CKD-EPI) equation generally provides more accurate estimation at GFR levels >60 mL/min/1.73 m². Neither of these equations has been well validated in older people. In this study we tested the accuracy of these equations in people aged over 74 years compared to GFR measured by a reference method.

Method
Participants (n=364, median age 80, range 74-97 years) were prospectively recruited from hospital clinics and from the community eg Age Concern or newspaper articles. The index test was GFR estimated using the MDRD and CKD-EPI equations and the gold standard GFR was measured using an iohexol clearance method.

Result
The median GFR was 51.7 mL/min/1.73 m² (range 7.2-100.9 mL/min/1.73 m²). The MDRD and CKD-EPI eGFRs were both mildly positively biased (p<0.001, median 3.7 and 2.0 mL/min/1.73 m² respectively) compared to measured GFR. Accuracy, expressed as the percentage of estimates falling within 30% of measured GFR (P30) was 80% for MDRD and 82% for CKD-EPI. This data is similar to that published for younger patients when compared to gold standard GFR (Levey AS Ann Intern Med. 2009;150:604-612)

Conclusion
This is the first large study to look at estimated GFR in older people. Our data shows that there is no evidence to suggest that GFR estimation using MDRD and CKD-EPI equations are less satisfactory in older compared to younger people. The CKD-EPI equation was slightly less biased, more precise and accurate than the MDRD equation but both were equivalent to published data for younger people.
BENZODIAZEPINE USE IN COMMUNITY-DWELLING OLDER ADULTS IN LONDON- IS IT RELATED TO PSYCHOLOGICAL OR PHYSICAL MORBIDITIES?

D Chatterjee, S Iliffe

Department of Primary Care and Population Health University College London Medical School
Royal Free Campus Rowland Hill Street London

Introduction
Benzodiazepine (BZ) consumption among older people has implications for mortality, morbidity and cost-effective prescribing. Many characteristics have been identified with BZ use, most suggesting that it reflects psychological states but some suggesting it reflects physical illness and disability. The aim of this study was to determine the prevalence of BZ use in a cohort of individuals aged 65 and over and explore characteristics associated with their use.

Methods
A cross-sectional study using the ‘ProAge’ health profile questionnaire completed by 1059 patients from three general practices in London.

Results
The prevalence of benzodiazepine use was 3.3% (35/1059). Benzodiazepine use was associated with female gender, high consultation rates, low income, medication for arthritis or joint pain, polypharmacy, depression, difficulties in instrumental activities of daily living (IADL), poor self-perceived health, social isolation, recent pain, medications for anxiety and symptoms of anxiety or agitation. In binary logistic regression analysis only three factors retained statistically significant independent associations with benzodiazepine use: receiving more than state pension (OR = 0.24, 95% CI: 0.098, 0.598), pain in the past 4 weeks (OR = 4.35, 95% CI: 1.501, 12.579), and taking medication for anxiety (OR = 7.96, 95% CI: 2.185-28.965). In those BZ users who complained of recent pain, binary logistic regression analysis showed only sadness and depression due to pain over the last 7 days had a statistically significant association with benzodiazepine use.

Conclusions
Lower socioeconomic status, pain and medications for anxiety are associated with BZ use in this sample of older people. In particular, pain causing depressive symptoms suggests that it is the relationship between physical and psychological factors that influences BZ use. The possible reasons for these associations, and their implications for practice, will be discussed.
INTRODUCTION
Effective methods of monitoring dehydration are important in establishing whether dehydration has an impact on stroke outcome, and if so whether early intervention improves outcomes. The aims of this study were to assess the frequency of water-loss dehydration after stroke and to assess the diagnostic accuracy of BIA for water-loss dehydration (by assessing the correlation between BIA measurements and the gold standard of raised serum osmolality).

METHODS
Subjects admitted to hospital with acute ischemic stroke were prospectively recruited between April and October 2011. Patient demographics, stroke severity (National Institute of Health Stroke Scale, NIHSS), serum osmolality, and BIA (BioScan 920-2, Maltron International Ltd, Essex) were recorded within 48 hours of admission. Total body water (TBW%), intracellular water (ICW%), extracellular water (ECW%) as percentages of body weight and extracellular to intracellular water ratio (ECW: ICW) were assessed against serum osmolality (reference standard for current water-loss dehydration >300 mOsm/L). ROC plots were created to assess best cut-points.

RESULTS
Of the 45 patients (60% men, mean age 72.8, SD 11.1) with an ischaemic stroke (median NIHSS score 4 (mild stroke); range 1-21) recruited, 8 (18%) had water-loss dehydration and a further 16 (36%) had impending dehydration (295-300 mOsm/L). ECW% provided the best sensitivity and specificity of the BIA measures, and its best cut-point was 47% (see figure). Sensitivity was 75% (95% CI 62-87), specificity 62% (95% CI 48-76) (PPV 0.3, NPV 0.92, LR+ 1.98, LR- 0.40, pre-test probability 0.18, post-test probability –ve 0.08, post-test probability +ve 0.31). ECW: ICW values were very similar.

CONCLUSION
Water-loss dehydration is common in patients in the early post-stroke. BIA lacks diagnostic accuracy for water-loss dehydration after stroke. BIA may be useful in non-acute settings (eg. care homes) to assess on the spot evidence of dehydration where blood tests are not routine and dehydration may be missed.
A SIMPLE FOUR-POINT SCORING SYSTEM, NAURSE (NA+, UREA, RESPIRATORY RATE, AND SHOCK INDEX IN THE ELDERLY), PREDICTS IN-HOSPITAL MORTALITY IN OLDEST OLD

A H Wilson¹, A Kidd¹, J Skinner², P Musonda², Y Pai², C J Lunt⁴, C Butchart⁴, R L Soiza⁴, J F Potter¹,², P K Myint¹,²

¹. Norfolk and Norwich University Hospital, Norwich, 2. Norwich Medical School, University of East Anglia, Norwich, 3. University Hospital South Manchester, Manchester, 4. Woodend Hospital, Aberdeen

Background
There are increasing numbers of people aged over 90 acutely admitted to hospital. Understanding the prognostic factors in this patient group will help clinicians manage these patients better. This study aims to identify which readily available clinical parameters are useful in predicting in-patient mortality in this patient population.

Methods
Prospective mortality audit data of 3 UK hospitals (≥90 yrs admitted between November 2008-January 2009) was analysed. We identified variables associated with in-patient mortality using univariate logistic regression and selected those with p<0.10. For each variable selected, we tested different clinically meaningful cut off points to determine at which point they serve as the strongest predictor of mortality. Using these cut off points we constructed multivariate logistic regression models.

Results
N=408, mean age 93.5 years, 236(66.7%) females. 75(18.4%) died as in-patients. Mean length of stay was 18.5 days(±42.4). Variables [cut off values] that were found to be significantly associated with in-patient mortality were admission sodium [≥145 (Na)], urea [≥14(U)], respiratory rate [>20(R)] and shock index [≥1.0(S); heart rate/systolic blood pressure]: creating a 4-point score (NaURSE), where the higher the score, the higher the mortality rate. The crude mortality rates(n) were 9.5%(19), 19.9%(27), 34.4%(21), 66.7%(6) and 100%(2) for score 0,1,2,3, and 4, respectively. Using cut off point of ≥2 the NaURSE score has specificity of 87%(95%CI:83.1-90.3) and sensitivity of 39%(95%CI:28.5-50.0) with ROC area under the curve value of 0.69 (95%CI: 0.63-0.76).

Conclusions
Four readily available parameters at the time of hospital admission appear to predict in-patient mortality. Each point increase results in an exponential rise in crude mortality rate. The score is specific and may be particularly useful in identifying those who are likely to die in that admission. Appropriate care, whether aggressive or palliative, can be planned from the outset using the NaURSE score in oldest old.
Changes in Health Status Amongst the Oldest-Old: Trends Over Two Decades in the English Population Aged 85+

V A Goodwin¹, R E Hubbard², D Llewellyn³, I Lang¹

1. PenCLAHRC, Peninsula College of Medicine and Dentistry, University of Exeter, 2. Centre for Research in Geriatric Medicine, University of Queensland, 3. Epidemiology and Public Health Group, Peninsula College of Medicine and Dentistry, University of Exeter

Introduction
The ‘oldest-old’ are the fastest growing age group in the UK, are most susceptible to disease and disability, and are the greatest users of health and social-care services. We explored trends over nineteen years in the health status of people aged 85 and over.

Methods
Data for this study came from 3768 individuals aged 85+ who participated in the Health Survey for England from 1991 to 2009. Data were collected on: self-rated health, long-term conditions, body mass index (BMI), waist circumference, smoking status, and blood pressure. We analyzed data in five-year groups to improve the accuracy of estimates. Analyses assessed changes in means or proportions and conducted separately by sex where appropriate.

Results
Improvements in health were recorded for blood pressure and smoking prevalence. Mean diastolic blood pressure in 1991-1995 was 77.8 mmHg (95% Confidence Interval (CI) 76.8 to 78.8) and in 2006-2009 was 66.4 mmHg (95% CI 65.4 to 67.4); over the same period, smoking prevalence in men declined from 9.5% (95% CI 6.1 to 13.1) to 2.6% (95% CI 0.9 to 4.3) and in women from 6.9% (95% CI 5.0 to 8.9) to 5.1% (95% CI 3.4 to 6.8). Conversely, the proportion of individuals reporting diagnosis of three or more long-term conditions increased from 13.0% (95% CI 10.6 to 15.3) to 19.7% (95% CI 17.3 to 22.2). The proportion describing their health as bad/very bad increased from 12.0% (95% CI 9.8 to 14.1) to 19.7% (95% CI 17.3 to 22.2). Mean BMI increased from 25.4 (95% CI 25.1 to 25.6) to 26.1 (95% CI 25.7 to 26.4) with corresponding increases in waist circumference in both men and women.

Conclusions
Smoking prevalence declined and blood pressure reduced over time among the oldest-old but other aspects of health deteriorated. Strategies to improve health in this population need to be explored.
POOR PERFORMANCE OF A READMISSION RISK PREDICTION MODEL IN AN OLDER UK POPULATION: AN OBSERVATIONAL STUDY

V K Bhalla, S J Wallis, R W S Biram, P E Cotter

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

Introduction
Readmissions are common, expensive and potentially preventable. To target prevention, those likely to be readmitted must be identified. The LACE index predicts readmissions in a younger Canadian population and is in clinical use internationally. In this study the LACE index was investigated in an older UK population.

Methods
An observational retrospective cohort study was performed. Randomly selected alive-discharge episodes from the Department of Medicine for the Elderly to the local PCT were reviewed. A LACE score (Length of stay, Acuity of admission, Charlson comorbidity index and ED visits in the previous 6 months) was calculated for each patient. The LACE index as a diagnostic test for subsequent readmission or death was assessed using receiver operator characteristic (ROC) curves. Logistic regression was used to test the individual components of the LACE index. The logistic regression model was compared with the LACE, and validated in a separate population.

Results
Five-hundred and seven patients were included with a mean (SD) age of 85 (6.5) years; 90 were readmitted (17.8%) and 23 died (4.5%) within 30 days. The median LACE score of those readmitted compared to those who were not was 12.5 v 12 (p=0.13). The Lace Index was only a fair predictor of both readmissions and death with a c-statistic of 0.55 and 0.70 respectively. Only ED visits was an independent predictor of readmission, with a c-statistic of 0.61 for readmission using the regression model. In a validation cohort of 507 cases, the c-statistic of the regression model was 0.57.

Conclusions
The LACE index is a poor tool at predicting 30-day readmission in an older UK inpatient population. It lacks the necessary sophistication to differentiate the complex factors which cause unplanned readmissions in this population. The absence of a simple predictive model for readmission inhibits attempts to prevent readmissions.