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Foreword

Colleagues and friends,

I am delighted to welcome you to the 57th Annual Scientific Meeting of the Irish Gerontological Society (IGS) being hosted this year by our colleagues in Northern Ireland. Our society spans the four pillars of gerontology: Biology of Ageing, Social Gerontology, Health Gerontology, and Psychology of Ageing.

It continues to grow from strength to strength with increased membership and attendance at the Annual Meeting. It also hosts a number of other seminars through out the year.

This year we ran a very successful Ph.D. study day where participants presented their work in an interactive forum that allowed support and feedback on their research. In June we had a very successful symposium on "Income and Income protection in Older people" with a range of speakers of national and international repute spanning epidemiologists, financiers, gerontologists and a perspective from the St Vincent De Paul.

It gives us great pleasure to welcome our distinguished speakers from home and abroad who will present on a wide variety of topics. The Willie Bermingham Memorial Lecture will be delivered by Prof Suresh Rattan of University of Aarhus, Denmark. The title of his talk is *"Ageing—from Molecular Biology to Hormesis"*. Professor Rattan is world renowned for his work on ageing and will hopefully give us great insight into ageing and prevention of age-related disability and disease! His research interests include ageing intervention and prevention through hormesis using physical, chemical and biological mild stresses.

We will have a number of keynote speakers from Northern Ireland, and a strategic review of the Irish Gerontological Society.

We are particularly grateful to our colleagues from Northern Ireland for their hard work in organising the meeting. As always they have been supported in their work by Marian Hughes without whom this meeting would not happen. We also acknowledge the efforts of our team of adjudicators for the oral (platform) and poster presentations.

All delegates will receive a copy of *Irish Ageing Studies Review*, which reports on last year's symposium on Exercise in Ageing. The IGS website and newsletter keeps us up to date on the activities of the society and we would again like to acknowledge Dr. Shane O'Hanlon for his ongoing hard work.

As always there is a very important social aspect to the programme with the annual dinner being held in Europa Hotel. Tá súil agam go bainfidh sibh go leir taithneamh as an teacht le chéile seo.

Dr. Riona Mulcahy
Secretary, on behalf of the Committee of the Irish Gerontological Society

IGS Scientific Committee 2008–2009

Dr. Tim Beringer
Dr. David Craig
Prof. Brendan McCormack
Dr. Bernadette McGuinness
Prof. Peter Passmore
Dr. Cathy Patterson
Dr. Michael Power
Dr. Maeve Rea
Dr. Stephen Todd

IGS Executive Committee 2008–2009

Prof. Desmond O'Neill, President
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Dr. Anne Hickey
Ms. Imelda Noone
Mr. Clare O'Sullivan
Mr. Robin Webster
Dr. Shane O'Hanlon, Webmaster
Ms. Marian Hughes, Admin

Friday 25th September, 2009

9.00–10.50 **Registration followed by Tea/Coffee**

10.50–11.00 **Welcoming Address**
Prof. Des O'Neill, President, Irish Gerontological Society

Session 1 **Ethics and Context**

Co-Chairs
Dr. Maeve Rea
Senior Lecturer QUB/Consultant Geriatrician

Dr. Tim Beringer
Consultant Geriatrician Royal Victoria Hospital, Belfast

11.00–12.00 **Platform Presentations (S1–S5)**

12.00–12.30 **Speaker**
Professor Suzanne McDonough
University of Ulster
Title of talk: Does acupuncture relieve musculoskeletal pain

12.30–14.15 **Lunch, Poster viewing, Marking and Pharmaceutical Stands**

Session 2 **Systems and Ageing**

Co-Chairs
Dr. Edward Hodkinson
Consultant Geriatrician Tyrone County Hospital, Omagh

Ms Maire Kerr
Older People Assessment and Liaison (OPALs) Physiotherapist, Belfast City Hospital

14.15–15.15 **Platform Presentations (S6–S10)**

15.15–15.45 **Speakers**
Ms Miriam Ahern
MD Align Management Solutions
Ms Mo Flynn
CEO Our Ladys Hospice
Title of talk: IGS Strategic Review and Future Direction

15.45–16.15 **Tea/Coffee and Poster Viewing**

Session 3 **Falls and Bone Health**

Co-Chairs
Dr. Maura Young
Consultant Old Age Psychiatrist Holywell Hospital, Antrim

Dr. Djamil Vahidassr
Consultant Geriatrician Antrim Area Hospital

16.15–17.15 **Platform Presentations (S11–S15)**

17.15–18.15 **Willie Bermingham Lecture**
Prof Suresh Rattan
University of Aarhus, Denmark
Title: Ageing—from Molecular Biology to Hormesis

19.00 **Gala Dinner—Europa Hotel**

Saturday 26th September, 2009

Session 4 **Stroke**

9.00–9.30 **Tea/Coffee**

Co-Chairs
Dr. Ken Fullerton
Consultant Geriatrician Belfast City Hospital

Ms. Mary McGrath
Occupational Therapist, Belfast

9.30–10.30 **Platform Presentations (S16–S20)**

10.30–11.00 **Tea/coffee and Poster viewing**

11.00–11.30 **Speaker**
Dr. Maeve Rea
Senior Lecturer QUB/Consultant Geriatrician
Title: Beyond 90 Nature or Nurture

Session 5 **Cardiovascular and Brain Ageing**

Co-Chairs
Ms Ann Scott
Specialist Nurse in Dementia, Holywell Hospital, Antrim

Dr. David Craig
Senior Lecturer QUB/Consultant Geriatrician

11.30–12.30 **Platform Presentation (S20–25)**

12.30 **Awards and AGM of IGS**

Friday 25th September, 2009

Oral Presentations

Session 1: Ethics and Context

0001
Early mortality following admission to long term nursing home care
Ciara McGlade[1], Catherine O'Sullivan[1], Michael O'Connor[2], Kieran A O'Connor[3]
[1]*Geriatric Medicine SpR Training Scheme, South Munster, Cork, Ireland,* [2]*Department of Geriatric Medicine, Cork University Hospital, Cork, Ireland,* [3]*Department of Geriatric Medicine, Mercy University Hospital, Cork, Ireland*

0002
The role of the family in nursing homes: do staff and family members perceive differently in Ireland
Aisling O'Gorman, Manigandan Chockalingham
National University of Ireland, Galway, Ireland

0003
Professional views on self neglect: an exploratory study
Mary Rose Day, Geraldine McCarthy, Patricia Leahy-Warren
University College Cork, Cork, Ireland

0004
"A **call for adequately funded community care—a right, a gift or both**?"
Cassandra Dillon[1], Diarmuid O'Shea[1], Graham Hughes[1], Morgan Crowe[1], Mary Deane[2]
[1]St. Vincent's University Hospital, Dublin, Ireland, [2]*The Royal Hospital Donnybrook, Dublin, Ireland*

0005
End of life care documentation in care homes: a meta-analysis
Una Molloy[1], Eileen Rossiter[1], Mary Carney[1], Mary Flanagan[1], Ciaran Donegan[1], Dermot Power[1], Regina Mc Quillan[1], Margaret Cashman[1], Patricia Walsh[1], Kevin Connaire[1]
[1]St Francis Hospice, Dublin, Ireland, [2]*Cuan Ross, Dublin, Ireland,* [3]*Lusk Community Unit, Dublin, Ireland,* [4]*Claremont Services, Dublin, Ireland,* [5]*Beaumont Hospital, Dublin, Ireland,* [6]*Mater Misericordiae Hospital, Dublin, Ireland,* [7]*St. Francis Hospice, Dublin, Ireland,* [8]*St. Francis Hospice, Dublin, Ireland,* [9]*St. Francis Hospice, Dublin, Ireland,* [10]*St. Francis Hospice, Dublin, Ireland*

Session 2: Systems and Ageing

0006
Forensic anatomy and management of a *Clostridium difficile* outbreak in a peripheral hospital
Tom Lee, Fiachra Moloney, Fiona O' Sullivan, Neil Cronin
Mallow General Hospital, County Cork, Ireland

0007
N-terminal pro-B-type natriuretic peptide as a marker of all-cause mortality in an elderly population
Olivia Mc Devitt, Jacqui Clarke, Henry Mc Kinney, Ken Mulpeter, Jose Miranda
Letterkenny General Hospital, Co. Donegal, Ireland

0008
Validation of SAHRU's National Deprivation Index in a sample of Irish community-dwelling older people
Roman Romero-Ortuno[1], Clodagh U. Cunningham[1], Lisa Cogan[1], Susan Squires[1], Rose Anne Kenny[2], Brian A. Lawlor[3]
[1]Technology Research for Independent Living (TRIL) Clinic, Trinity College Dublin, Dublin, Ireland,
[2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland,* [3]*Department of Psychiatry, Trinity College Dublin, Dublin, Ireland*

0009
Effect of STOPP/START criteria on the quality of prescribing for older patients: a randomized controlled trial
Paul Gallagher, Marie O'Connor, Denis O'Mahony
Department of Geriatric Medicine, Cork University Hospital, Cork, Ireland

0010
Re-visiting isolation and mobility in Ireland: an ethnographic account of rural transport systems
Adam Drazin
Trinity College Dublin, Dublin, Ireland

Session 3: Falls and Bone Health

0011
Health education and Tai Chi reduce falls—a one-year follow-up RCT
Hui-Chi Huang[2], Chieh-Yu Liu[2], Yu-Tai Huang[2], W George Kernohan[1]
[1]University of Ulster, Newtownabbey, UK, [2]*National Taipei College of Nursing, Taipei, Taiwan*

0012
Assessing falls risk in older Emergency Department attenders
Rosa McNamara, Iomhar O'Sullivan
Cork University Hospital, Cork, Ireland

0013
3D Collagen based biomaterial as a solution to enhance bone healing
MB Keogh[1], M Healy[2], JB Walsh[2], MC Casey[2], JG Browne[2], FJ O' Brien[1], JS Daly[1]
[1]Royal College of Surgeons in Ireland, Dublin 2, Ireland, [2]*St. James Hospital, Dublin 8, Ireland*

0014
Cobalamin levels do not differ between outpatients attending a falls and black out unit and age- and gender-matched community dwelling controls
David Robinson[1], Padraic Smith[1], Conor O'Luanaigh[1], Erin Tehee[1], Anne Marie Molloy[2], John Scott[2], Conal Cunningham[1]
[1]Mercer's Institute for Research on Ageing, Dublin, Ireland, [2]*Dept of Biochemistry, Trinity College, Dublin, Ireland*

0015
Comparison of post-hip fracture physical activity in elderly community dwellers with age and gender-matched controls without fracture
Kate McNulty[1], Bernard Donne[1], JB Walsh[2], M Casey[2]
[1]Trinity College, Dublin, Ireland, [2]*St. James Hospital, Dublin, Ireland*

Saturday 26th September, 2009

Session 4: Stroke

0016
Statin therapy and improved early outcomes after ischaemic stroke in the north dublin population stroke study
Danielle Ni Chroinin[1], Elizabeth L Callaly[2], Joseph Duggan[1], Colm Byrne[1], Aine Merwick[1], Niamh Hannon[1], Orla Sheehan[1], Mick Marnane[1], Gillian Horgan[3], Lorraine Kyne[1], Patricia ME McCormack[2], Allan Moore[3], Joan Moroney[3], Leslie Daly[4], Peter J Kelly
[1]Mater Misericordiae University Hospital, Dublin, Ireland, [2]*Connolly Memorial Hospital, Dublin, Ireland,* [3]*Beaumont Hospital, Dublin, Ireland,* [4]*School of Public Health and Population Sciences, University College, Dublin, Dublin, Ireland*

0017
Diagnostic utility of the ABCD2 score to distinguish TIA and minor stroke from non-cerebrovascular events, the North Dublin TIA study
Órla Sheehan[1], Áine Merwick[1], Lisa A Kelly[1], Niamh Hannon[1], Michael Marnane[1], Danielle Ní Chroínin[1], Joseph Duggan[1], Lorraine Kyne[1], Alan Moore[2], Patricia ME McCormack[3], Dawn Harris[1], Gillian Horgan[1], Emma B Williams[1], Leslie Daly[4], Peter J Kelly[4]
[1]Neurovascular Clinical Science Unit, Mater University Hospital/University College Dublin, Dublin, Ireland, [2]*Beaumont hospital, Dublin, Ireland,* [3]*Connolly hospital, Dublin, Ireland,* [4]*School of Public Health and Population Science, University College Dublin, Dublin, Ireland*

0018
Patients' perceptions of their health status and recovery post stroke
Irene Hartigan[1], Liz O'Connell[1], Geraldine McCarthy[1], Denis O'Mahony[1]
[1]School Of Nursing & Midwifery, University College Cork, Cork, Ireland, [2]*Department of Geriatric Medicine, Cork University Hospital, Cork, Ireland*

0019
Stroke, illness perception and quality of life
John Dinsmore[1], Vivenne Crawford[1], Claire Donnellan[1], Desmond O'Neill[1]
[1]The Queen's University of Belfast, Belfast, UK, [2]*Trinity College Dublin, Dublin, Ireland*

0020
Use of the ROSIER screening tool by nurses in a district general hospital stroke unit
Bronagh Byrne[1], Michael McCormick[1], Peter O'Halloran[2]
[1]Stroke Unit, Daisy Hill Hospital, Newry, UK, [2]*Queens University, Belfast, UK*

Session 5: Cardiovascular and Brain Ageing

0021
Statins for the treatment of Alzheimer's disease and dementia
Bernadette McGuinness[1], John O'Hare, Roger Bullock[2], David Craig[1], Peter Passmore[1]
[1]Queen's University Belfast, Belfast, UK, [2]*Kingshill Research Centre, Swindon, UK*

0022
Prognostic significance of the morning surge in systolic blood pressure in the older adult: Dublin outcome study
EL Callaly[1], JA Staessen[2], E O'Brien[3], PME McCormack[1], E Dolan
[1]Connolly Hospital, Blanchardstown, Dublin 15, Dublin 15, Ireland, [2]*Department of Molecular and Cardiovascular Research, University of Leuven, Leuven, Belgium, Leuven, Belgium,* [3]*Conway institute, UCD, Dublin. Ireland, Dublin, Ireland*

0023
Clinical characteristics and prodrome of vasovagal syncope (VVS) in young and old
Clodagh O'Dwyer, Dymphna Hade, Ciara Rice, Michelle Burke, Rose Anne Kenny
Falls and blackout Unit, Department of medical gerontology, St James Hospital, Dublin, Ireland

0024
Does clinic heart rate predict cardiovascular and non-cardiovascular outcome?
Lelane Van der Poel[1], Eamon Dolan[1]
[1]Connolly Hospital, Blanchardstown, Dublin, Ireland, [2]*EPIC Norfolk, University of Cambridge, Cambridge, UK*

0025
Blood pressure associates with obesity measures and sodium in the 'oldest old' in the Belfast elderly longitudinal free-living aging study Belfast
Phyo Minyt[1], Heiko Mueller[1], Anne Murphy[1], Helene McNulty[1], Chris Patterson[1], Pooler Archbold[1], Maeve Rea[1]
[1]Queens University Belfast, Northern Ireland, UK, [2]*University of Cambridge, Cambridge, UK,* [3]*University of Heidelberg, Heidelberg, Germany,* [4]*University of Ulster, Northern Ireland, UK,* [5]*Belfast City Hospital, Northern Ireland, UK*

Poster Section

0001
Older people in the emergency department
Joe Gallagher[1], Anne Marie Gallagher[2], Cyrus Mobed[1]
[1]South Tipperary General Hospital, Clonmel, Ireland, [2]*Dept of Occupational Therapy, Letterkenny General Hospital, Ireland*

0002
Outcome following 6,171 fractures of the proximal femur in Northern Ireland
Timothy Beringer, James Elliott, Sinead McDonald
Royal Victoria Hospital, Belfast BT12 6BA, UK

0003
Metformin taken with food can reduce its ability to inhibit DPP-4 activity in older patients with Type 2 diabetes
Joy Cuthbertson[1], Steven Patterson[2], Finbarr OHarte[2], Patrick Bell[1]
[1]Regional Centre for Endocrinology and Diabetes, Royal Victoria Hospital, Belfast, UK, [2]*School of Biomedical Sciences, University of Ulster, Coleraine, UK*

0004
Geriatrics rehabilitation audit
Emer Ahern, Mohammed Gaffar, Ehab Almahi, Kamal Sodah
St. Luke's Hospital, Kilkenny, Ireland

0005
A psychoanalytic intervention in caregivers over 65 years
Grainne Donohue
University College Dublin, Dublin, Ireland

0006
Does education help compliance of medication on discharge
Afolabi Antonio, Anita Ravindran, Kate Ni Argain, Eithne Harkin, Michael Reardon
Wexford General Hospital, Wexford, Ireland

0007
The cognitive failures questionnaire when used with older adults in Ireland
Blaithin O' Dea, Vanessa Buckley, Roman Romero, Brian Lawlor
Trinity College, Dublin, Ireland

0008
The impact of falling on perceived health
Blaithin O' Dea, Vanessa Buckley, Roman Romero, Brian Lawlor
Trinity College, Dublin, Ireland

0009
Neuropsychological assessment of mild cognitive impairment
John McIlvenna, Peter Passmore, David Craig, Aine Wallace, Bernadette McGuinness
Geriatric Medicine, Queen's University Belfast, Belfast, UK

0010
Decision making tools for housing design for the aged population
Nicholas C Humes, Karim Hadjri
Queen's University, N Ireland, UK

0011
Self-neglect: an overview of the literature
Mary Rose Day, Geraldine McCarthy, Patricia McCarthy
University College Cork, Cork, Ireland

0012
A case report that highlights a probable 'new' risk factor for stroke
Nashid Alam, Kevin Dynan
Ulster Hospital, Belfast, Ireland

0013
Gross over-prescription of proton pump inhibitors in irish healthcare
Tom Lee, Fiachra Moloney, Neil Cronin
Mallow General Hospital, County Cork, Ireland

0014
Efficacy of nitric oxide in stroke (ENOS) trial—a prospective randomised controlled trial in acute stroke
Philip Bath, Sandeep Ankolekar, Tim England, Chamila Geeganage, Michael Tracy, Sally Utton
Institute of Neuroscience, University of Nottingham, Nottingham, UK

0015
Does day hospital therapy reduce falls in older people?
Afolabi Antonio, Ann Roche, Eithne Harkin, Michael Reardon
Wexford General Hospital, Wexford, Ireland

0016
Patient and socioeconomic factors associated with hospital admission from the Emergency Department in an elderly urban population
Corina Naughton, Pearl Treacy, Jonathan Drennan, Gerard Fealy, Felicity Johnson, Margaret Kilkenny, Michelle Butler
University College Dublin, Dublin, Ireland

0017
Patient awareness of osteoporosis, risk and protective factors, and own diagnostic status: a cross-sectional study
Danielle Ni Chroinin[1], Patricia Glavin[2], Frances McCarthy[2], Dermot Power[2]
[1]Mater Misericordiae University Hospital, Dublin, Ireland, [2]*St. Mary's Hospital, Dublin, Ireland*

0018
Seasonal variation of serum vitamin D in Irish community-dwelling older people: the St James's Hospital experience
Roman Romero-Ortuno[1], Joseph G. Browne[2], Lisa Cogan[1], Martin Healy[3], Miriam C Casey[2], James B Walsh[2], Conal Cunningham[4], Rose Anne Kenny[5]
Technology Research for Independent Living (TRIL) Clinic, St James's Hospital, Dublin, Ireland,
[2]*Osteoporosis and Bone Health Clinic, St James's Hospital, Dublin, Ireland,* [3]*Biochemistry Department, St James's Hospital, Dublin, Ireland,* [4]*Mercer's Institute for Research on Ageing (MIRA), St James's Hospital, Dublin, Ireland,*
[5]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0019
Cognitive loading slows walking speed in older people
Roman Romero-Ortuno[1], Alan O'Donovan[2], Barry R. Greene[1], Lisa Cogan[1], Clodagh U Cunningham[1], Tim Foran[1], Rose Anne Kenny[3]
[1]Technology Research for Independent Living (TRIL) Centre, Trinity College Dublin, Dublin, Ireland,
[2]*Intel Digital Health, Leixlip, Ireland,* [3]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0020

"Lonely days invade the nights": less nocturnal heart rate variability in lonely elders

Roman Romero-Ortuno[1], Tim Foran[1], Rose Anne Kenny[2], Brian A. Lawlor[3]
[1]Technology Research for Independent Living (TRIL) Centre, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland,* [3]*Department of Psychiatry, Trinity College Dublin, Dublin, Ireland*

0021

Polypharmacy and falls: is orthostatic hypotension a mediator?

Roman Romero-Ortuno[1], Lisa Cogan[1], Chie Wei Fan[1], Rose Anne Kenny[2]
[1]Technology Research for Independent Living (TRIL) Clinic, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0022

Using the Finometer® to examine gender differences in hemodynamic responses to orthostasis in older people

Roman Romero-Ortuno[1], Lisa Cogan[1], Tim Foran[1], Chie Wei Fan[1], Rose Anne Kenny[2]
[1]Technology Research for Independent Living (TRIL) Clinic, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0023

Intolerance to initial orthostasis relates to systolic, but not diastolic, BP changes in older people

Roman Romero-Ortuno[1], Lisa Cogan[1], Chie Wei Fan[1], Rose Anne Kenny[2]
[1]Technology Research for Independent Living (TRIL) Clinic, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0024

Use of formal and informal care services among older people in Ireland and France

Brenda Gannon, Berengere Davin
Irish Centre for Social Gerontology, Galway, Ireland

0025

Protected mealtime audit- are nursing home residents allowed sufficient time to complete meals without interruption?

Ruth Sargent, Mary Doyle, Lisa Nel, Caroline Kane, Gretta Troy, Edel Dunphy, Desmond O'Neill
Peamount, Co. Dublin, Ireland

0026

Platelet β-secretase activity in neurodegenerative disease

David Wilson, David Craig, Janet Johnston, Peter Passmore
Queens University Belfast, Belfast, UK

0027

Paramedical staff identification of acute stroke in the field and accuracy for final diagnosis of stroke or TIA

Claire Sheehy[1], Karl Boyle[1], Usman Bhutta[2], Mohammed Ashfaque[2], Robert Morton[3], Brendan Whelan[3], Richard Lynch[1], Clare Fallon[1], Khalil Amir[2], Sean Murphy
[1]Midlands Regional Hospital, Mullingar, Ireland, [2]*Midlands Regional Hospital, Tullamore, Ireland,* [3]*HSE Midlands Ambulance Service, Midlands, Ireland*

0028

Quantitative insights into the Social and Emotional Loneliness of older people

Roman Romero-Ortuno[1], Susan Squires[1], Cormac Sheehan[1], Clodagh U. Cunningham[1], Rose Anne Kenny[2], Brian A. Lawlor[3]
[1]Technology Research for Independent Living (TRIL) Centre, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland,* [3]*Department of Psychiatry, Trinity College Dublin, Dublin, Ireland*

0029

Estimating the economic cost of disability for older persons in Ireland

John Cullinan, Brenda Gannon, Eamon O'Shea
Irish Centre for Social Gerontology, NUI Galway, Galway, Ireland

0030

Private health insurance: voluntary or involuntary?

Marie O' Connor, Colm Henry
Mercy University Hospital, Cork City, Ireland

0031

Quo Vadis Eire? A review of demographic and health policy trends from an international comparative perspective using the OECD Health Data 2008

Roman Romero-Ortuno[1], Lisa Cogan[1], Susan Squires[2], Clodagh U Cunningham[1], Yumiko Kamiya[1], Rose Anne Kenny[1]
[1]Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland, [2]*Trinity College Institute of Neuroscience, Dublin, Ireland*

0032
'Visuovascular instability'? A possible mechanism of accelerated age-related visual loss
Roman Romero-Ortuno[1], Lisa Cogan[1], Ciaran Finucane[2], Rose Anne Kenny[3]
[1]Technology Research for Independent Living (TRIL) Centre, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Physics, St James's Hospital, Dublin, Ireland,* [3]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0033
The economic cost of delayed discharges from an off site rehabilitation unit
Frank O'Leary[2], Cassandra Dillon[2], Morgan Crowe[1], JJ Barry[1], Graham Hughes[1], Rachael Doyle[1], Diarmuid O'Shea
[1]St. Vincent's University Hospital, Dublin, Ireland, [2]*The Royal Hospital Donnybrook, Dublin, Ireland*

0034
Gerontological nursing interventions in a residential intellectual disability setting
Mary Doyle, Desmond O'Neill
Peamount, Co. Dublin, Ireland

0035
Pension policy and retirement in Ireland
Roman Raab, Brenda Gannon
Irish Centre for Social Gerontology, Galway City, Ireland

0036
Developing life story books with family carers
Teresa Wills, Mary Rose Day
School of Nursing and Midwifery, University College Cork, Cork, Ireland

0037
Technology rejection, perception and implications for tele-care technology amongst older Irish adults: a mixed method approach
Susan Squires, Roman Romero-Ortuno, Joe Wherton
Trinity College Dublin, Dublin, Ireland

0038
An audit of the acute stroke service in Portiuncula Hospital
Mary Diskin, Anna Griffin, K Usman, S Kavanagh, V Lakhera, T Donnelly
Portiuncula Hospital, Ballinasloe, Ireland

0039
Volume—a weighty issue in swallowing?
Rebecca Sowman, Susan Lawson, Julia O' Rourke, Kerrie Renshaw
Adelaide and Meath Hospital, Incorporating NCH, Tallaght, Dublin 24, Ireland

0040
Awareness in dementia: a psychosocial investigation
Emer Begley[1]
[1]Social Policy and Ageing Research Centre, Trinity College, Dublin, Ireland, [2]*Age Action Ireland, Dublin, Ireland*

0041
Effect of neuroleptic medication use on stroke mortality, recurrence and functional status—the North Dublin population stroke study (NDPSS)
Danielle Ni Chroinin[1], Colm Byrne[1], Elizabeth Callaly[2], Aine Merwick[1], Michael Marnane[1], Niamh Hannon[1], Orla Sheehan[1], Gillian Horgan[1], Joseph Duggan[1], Patricia ME McCormack[2], Allan Moore[3], Joan Moroney[3], Peter J Kelly[1], Lorraine Kyne
Mater Misericordiae University Hospital, Dublin, Ireland, [2]*Connolly Memorial Hospital, Dublin, Ireland,* [3]*Beaumont Hospital, Dublin, Ireland*

0042
Positive effects of rolling audit on antibiotic prescription in a geriatric unit
Conor Braniff, Ciaran O'Gorman, Kevin Dynan
Ulster Hospital, Belfast, UK

0043
Outcomes of elderly patients at an on-site rehabilitation facility in a tertiary teaching hospital
Martin Mulroy, Linda Kearney, Ruth Cooney, David Martin, Grace Conroy, Davis Coakley, Miriam Casey, Bernard Walsh, Joe Harbison, Conal Cunningham
St James Hospital, Dublin, Ireland

0044
Medical complications of elderly patients at an on-site rehabilitation facility in a tertiary teaching hospital
Martin Mulroy, Ruth Cooney, Linda Kearney, Grace Conroy, David Martin, Davis Coakley, Miriam Casey, Bernard Walsh, Joe Harbison, Conal Cunningham
St James Hospital, Dublin 8, Ireland

0045
Correlating low bone mineral density (BMD) with tartrate resistant acid phosphatase (TRACP) in patients with stage 4–5 renal failure
Martin Mulroy[1], Martin Healy[1], Cathal Walsh[2], Bernard Walsh[1], Miriam Casey
[1]St James Hospital, Dublin 8, Ireland, [2]*Trinity College, Dublin, Ireland*

0046
Complications and outcome post stroke in patients over 80 years
Imelda Noone, Serena Hatton, Diarmuid O'Shea, Morgan Crowe
St. Vincents University Hospital, Dublin, Ireland

0047
End of life care in stroke: timing of death
Imelda Noone, Serena Hatton, Morgan Crowe
St.Vincent's University Hospital, Dublin, Ireland

0048
Does PEG insertion advantage frail elderly patients with poor nutritional intake?
Lelane Van der Poel, Elizabeth Callaly, Orlaith Finnucane, Alison Hampson, Patricia McCormack
Connolly Hospital, Blanchardstown, Dublin, Ireland

0049
To determine the impact of Parkinson's disease on occupational performance from the perspective of the individual living with the condition
Caoileann Cassidy, Eimear Ní Mhurchú, Emma Nolan, Deirdre Connolly
Discipline of Occupational Therapy, Trinity College, Dublin, Ireland

0050
A study of the prevalence of renal impairment and its effect on prescribing practices in a medicine for the older person outpatient population
Colin Mason, Mairead Bartley, Mansour Smew, Dermot Power, Joseph Duggan, Toddy Daly, Lorraine Kyne
Mater Misericordiaie Hospital, Dublin 7, Ireland

0051
Voting rights and persons in long term care
Maureen Chalmers
Health Service Executivwe, Tralee, Co. Kerry, Ireland

0052
An audit of the use of radiologically inserted gastrostomies
Keira Higgins
Department of Nutrition and Dietetics, The Adelaide and Meath Hospital incorporating the National Children's Hospital AMNCH, Dublin, Ireland

0053
Active stand tests in a dedicated falls service
Audrey Mc Loughlin, Anne O Driscoll, Desmond O'Neill
The Adelaide and Meath Hospital, Dublin incorporating the National Children's Hospital, Dublin, Ireland

0054
Thigh-length graduated compression stockings (GCS) do not reduce the risk DVT in acute stroke patients. CLOTS trial 1
Carol Williams
University of Edinburgh, Edinburgh, UK

0055
Blood pressure and heart rate variability during exercise: the ageing effect
Lisa Cogan[1], Roman Romero-Ortuno[1], Barry Greene[1], Chie Wei Fan[1], Tim Foran[1], Rose Anne Kenny[2]
[1]TRIL Centre, Trinity College Dublin, Dublin, Ireland, [2]*Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland*

0056
Evaluation of cognitive skills improvements using technological and text-based skills training tools
Kevin Power, Grainne Kirwan, Marion Palmer
Dun Laoghaire IADT, Co.Dublin, Ireland

0057
Investigating bone quality in patients with hip fracture using newer bioengineering techniques
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University of Tennessee, Knoxville, Knoxville, Tennessee, USA

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TRIL Programme, Trinity College, Dublin, Ireland

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National University of Ireland Galway, Galway, Ireland

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Marie Therese Cooney, Alexandra Dudina, Ian Graham
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Khalil Ullah[2], Catherine O'Sullivan[1], Fiona O'Sullivan[2], Karl Neff[2], Michael O'Connor[2], Kieran A O'Connor[3]
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Mallow General Hospital, Mallow, Co Cork, Ireland

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Connolly Hospital, Blanchardstown, Ireland

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Stroke Service, Age-Related Healthcare, Adelaide and Meath Hospital, Tallaght, Dublin 24, Ireland

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Waterford Regional Hospital, Waterford, Ireland

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Kerry General Hospital, Co Kerry, Ireland

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Kerry General Hospital, Co Kerry, Ireland

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Kieran A O'Connor[1], John Leo[2], Mark Blower[2], David Sammon[2]
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Marie O Connor, Ronan O Caoimh, Richard Liston
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Ciara McGlade[2], Sarah O'Connell[1], John Linehan[3], Suzanne Timmons
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Use of medications with potential to exacerbate urinary incontinence in long term care residents
Shane O'Hanlon[2], Niamh O'Regan[1], Norma Harnedy[1], Colm Henry[2], Kieran O'Connor[2], Mike O'Connor[1], Denis O'Mahony[1], Cillian Twomey[1]
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Shane O'Hanlon, Colm Henry
Mercy University Hospital, Cork, Ireland

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Amanda Crawford, Sanjeev Sarup
Altnagelvin Hospital, Londonderry, UK

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Shane O'Hanlon[2], Norma Harnedy[1], Colm Henry[2], Kieran O'Connor[2], Mike O'Connor[1], Denis O'Mahony[1], Cillian Twomey[1]
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Shane O'Hanlon, Richard Liston
Kerry General Hospital, Tralee, Ireland

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Falls in older people: an analysis from general practice
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Pain assessment in specialist services for older people in Ireland

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Global and p16 methylation status in octo/nonagenarian subjects from the Belfast elderly longitudinal free-living ageing study (Belfast)

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0135

Are frail elderly patients admitted to an appropriate ward?

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Session 1: Ethics and Context

0001
Early mortality following admission to long term nursing home care

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Approximately 5% of Ireland's over 65 years population reside in nursing homes. A 60% increase in this population group is expected by 2021. The aim of this study was to examine mortality over time from nursing home admission, and to determine risk factors associated with early mortality.

An analytical prospective cohort study design was used to examine the impact of nursing home admission on mortality. Consecutive referrals of people over 65 years for HSE funded long term care in a mixed urban and rural health care area (census population 346,961, over 65 population 36,019) between October 2003 and December 2007 were included. All were assessed by a Consultant Geriatrician and multidisciplinary team on referral to determine suitability for and type of residential care. Demographic data, diagnostic details, dependence level and cognitive state were recorded. The cohort was followed-up to determine the duration of stay and date of death. A cox survival model was used to analyse mortality.

There were 242 patients in the cohort admitted to nursing care facilities over this period (mean age 82 years, 62% females). During the observation period 63% died, the mean time to death was 14.6 months, but the median was only 9.6 months. This difference was explained by an excessive mortality early after admission to nursing home. Of the 242 patients 7% died in the first month, 20% by 3 months and 27% by 6 months. After 1 year 34% of the cohort was dead and 53% were dead by two years. Dementia, functional dependency, incontinence and older age were associated with earlier mortality.

Admission to a nursing home was associated with an early excess mortality, which reduced after about 6 months. These results indicate that assessment of baseline cognitive and functional level may help determine long-term care requirements.

0002
The role of the family in nursing homes: do staff and family members perceive differently in Ireland

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Introduction: Research suggests family wish to assume roles upon admission of a loved one into a nursing home and have the opportunity to make nursing home placement a client-centred experience for the resident. Although staff advocate for an increase in family involvement, family integration is not always facilitated. Despite benefits of social support to residents and family as well as the work demands placed on staff, family involvement as a resource is under-used.
Method: A questionnaire was completed by 25 family members and 33 staff from 12 nursing homes in Galway. The questionnaire contains a 100 inventory of daily tasks completed in nursing homes and was used as a measure of perceived roles.
Results: Results show a significant difference in perception on 23 tasks. 28 tasks were identified as potential roles that family members could assume in the areas of physical, emotional and psychosocial, financial and decision making aspects of care.
Discussion: Staff and family members over-estimated their own level of involvement and under-estimated the level of involvement of the other group. Contradicting results reflect staff wishes to increasing family involvement, although they failed to allocate sole responsibility to family for any of the 23 tasks. Staff members are less open to partnerships and delegation of work to family. Family are more willing to establish a collaborative relationship in the care of their loved one. Clear role boundaries through communication and education are essential for efficient collaboration between staff and family to reduce confusion, role overlap and conflict, resulting in high quality care for residents.

0003
Professional views on self neglect: an exploratory study

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Introduction: Self-neglect in older adults is a serious public health issue and a social problem. It is characterised by an inability to meet one's own basic needs, is an increasingly common problem and can be intentional or unintentional. Self-neglect can occur across the lifespan and the complexity and multidimensional nature of self-neglect means it is difficult to detect and diagnose. In Ireland self neglect is not considered to be a form of elder abuse however procedural documents for professionals in the Health Service Executive have included those 'at risk of extreme self-neglect'. This study explored the views and experiences of senior case workers (SCWs) adult protective services (APS) on self-neglect.
Methods: An exploratory descriptive research design was used. A purposive sample of senior case workers ($n = 7$) from Adult Protective Services participated in guided interviews which were tape recorded, transcribed and thematically analysed.
Results: Five major themes emerged: conceptualization of self-neglect: (i.e. failure of older people to look after themselves which can be intentional (i.e. way of life, choice) or non-intentional (i.e. alcoholism, psychiatric illness, cognitive impairment), medical and social issues (i.e. lack of mobility, personality disorders, dementia, social isolation) assessment and risk management (referral trigger for assessment, capacity, service refusal, interventions and supports) and challenges (acceptability and maintenance of services, ethical choices, caseload management). The interconnectivity of self-neglect to elder abuse will also be addressed.
Discussion: This study for the first time provides insights into the views and experiences of self-neglect from the perspective of senior case workers, in Ireland. Self-neglect was linked to medical, social and behaviours issues and assessment required a multidisciplinary approach

for effective decision-making on ethical choices and risk management. Senior cases workers are challenged and frustrated by this multidimensional phenomena and the complexity of self-neglect cases.

0004
A call for adequately funded community care—a right, a gift or both?"

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Patients transferred from an acute hospital to nursing homes have an increased risk of adverse events in the first 12 months. We set out to determine if referral source (acute hospital or home) impacted on mortality in residents at a complex continuing care facility.

A retrospective, cross sectional study was performed. Data was collected on all continuing care residents who died between January 2000 and December 2005. For each resident, referral source, age on admission and dates of admission and death were recorded. Duration of stay until death was calculated for each patient.

249 residents died between 2000 and 2005. 114 patients were admitted from an acute hospital, 48 from home, 47 from a rehabilitation unit, 28 from another nursing home and referral source was unknown for 11 patients. For those from an acute hospital, average age on admission was 78 years and mean life span following transfer was 25 months. 10% died within a month of transfer, 26% within 6 months and 49% within 1 year of transfer. For those from home, average age on admission was 80 years and mean life span following admission was 50 months. None died in the first month following transfer, 11% died within 6 months and 17% died within 1 year.

People admitted from home tended to be older, had an improved long-term prognosis and a longer life span following admission than those admitted from an acute hospital. Equitable access to adequately funded community care to enable people live at home unless a major medical illness necessitates hospital admission should be a right not a means tested gift. This study again highlights the frailty of patients admitted to complex continuing care facilities from the acute hospital sector.

0005
End of life care documentation in care homes: a meta-analysis

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The purpose of the initiative was to ascertain current practices on documentation of end of life care (EOLC) in three community units in North Dublin. The objective was to identify structures, process and outcomes of clinical practices in the residential care homes, in order to implement a quality EOLC initiative. In Ireland, 20% of older people die at home, while most die in acute hospitals and long stay settings. Integration of palliative care principles and older person care is necessary to create a model of "EOLC" for older people and is particularly important for older people living in long stay settings. Documentation is a necessary requisite when judging the quality of EOLC provided and facilitates the provision of continuous and individualised care delivered by the multi disciplinary team.

A modified version of the Teno (1999) End of life Audit tool was used to guide a chart audit within the study sites. Data were obtained from charts of deceased residents from January 2008 to December 2008. The chart review is part of an EOLC quality improvement project and will also include the use of focus groups and individual interviews. Focus groups involving staff were also undertaken.

A total of 37 charts were reviewed, focusing on the care received by the residents in the last 48 h of life. EOLC documentation included recognition that death was approaching ($n = 17$), "Do Not Resuscitate" order ($n = 24$), unit as the preferred place of care ($n = 15$), four residents had an Accident and Emergency visit in the last 48 h of life. Common symptoms documented were: pain ($n = 10$), respiratory secretions ($n = 14$), agitation ($n = 3$), shortness of breath ($n = 16$), fever ($n = 9$). Documentation of family emotional needs ($n = 12$), Chaplaincy referral ($n = 6$). While the presence of symptoms and their management were identified, effectiveness of the interventions was not always documented. Emotional needs of families identified in focus groups were not always documented.

Implications: Findings will provide benchmark for documentation guidelines. Key EOLC interventions will be highlighted and guide educational developments and interventions to care staff.

Session 2: Systems and Ageing

0006
Forensic anatomy and management of a *Clostridium difficile* outbreak in a peripheral hospital

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Introduction: *Clostridium difficile* associated diarrhoea (CDAD) is increasing in incidence and virulence. In July 2008 an outbreak of 11 cases of CDAD occurred in our hospital, leading to a brief closure to admissions. Thereafter the monthly rate of CDAD decreased but national figures for 2008 (available in December) revealed that our hospital had significantly more cases of CDAD, with 40 new cases, than had comparable hospitals. A hospital committee comprising hospital consultants, registrars, managers, public health, nursing administration and clinical microbiologists was established to address the problem.

Method: A comprehensive audit of all 40 cases using Health Protection Surveillance Centre case definitions and also examining antibiotic and proton pump inhibitor (PPI) usage was undertaken. Immediate measures included a "deep clean" of the hospital, restriction of extra beds, strict antibiotic prescribing guidelines, registrar/consultant approval for antibiotic prescription and education sessions with NCHDs and GPs.

Results: In 2008, 40 patients had CDAD, 33 hospital and seven community acquired. 37 patients had been prescribed antibiotics within 8 weeks with a median (IQR) of two antibiotics [1–3] per patient, including 27 broad-spectrum and two narrow-spectrum penicillins, 24 quinolones, 9 cephalosproins, 6 gentamicin and 5 clarithromycin. 27 (68%) patients were on PPIs, only 7 having an indication as per NICE guidelines. Seven patients died, mean age 80 years (youngest 73). All who died had significant co-morbidities (mean Charlson co-morbidity index 4.14) and had been taking PPIs with a mean of 2.5 (SD 1.05) antibiotics each. In the first five months of 2009, after the above measures were implemented, there were three new cases of CDAD, one community acquired. From pharmacy invoices, in-hospital antibiotic usage has reduced dramatically.
Discussion: CDAD is a significant clinical problem with greatest impact on frail elderly patients but relatively simple measures can have a significant impact on its incidence.

0007
N-terminal pro-B-type natriuretic peptide as a marker of all-cause mortality in an elderly population

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In recent years, abundant evidence has emerged regarding the diagnostic and prognostic significance of cardiac B-type natriuretic peptide (BNP) and the N-terminal segment of its prohormone, in heart disease [1–3]. Additionally an emerging body of data suggests that NT-proBNP may have prognostic capabilities in clinical conditions beyond heart failure [4, 5]. The study objective was to assess the prognostic value for the prediction of mortality among a group of Irish elderly patients, independently of underlying co-morbidity.

This retrospective study encompassed consecutive NT-proBNP determinations performed by the biochemistry laboratory at Letterkenny General Hospital over a 15 month period. On patients aged 75 years and older (range 75–101 years, mean 83). Male to female ratio 48:52. Inclusion was independent of medical condition and rationale for NT-proBNP quantification. The main outcome measure of the study was mortality within 1 year. Kaplan–Meier survival curves were analysed, while Cox proportional hazard models were used to determine the association between NT-proBNP levels and mortality.

During follow-up, 547 subjects died. The median NT-proBNP concentration was higher among subjects who died than those who survived (3,632 vs. 1,079 pg/ml). Subjects were stratified into quartiles according to peptide concentration at baseline. Within quartile I (NT-proBNP $\leq$ 392 pg/ml), the mortality rate was 8%, while the mortality rate was 38% within quartile IV; hazard ratio 5.94. Within subdivided groups of quartile IV, the mortality rate within the lowest group (NT-proBNP $>$ 4,343 pg/ml $\leq$ 6,023 pg/ml) was 25%, as compared with the highest group (NT-proBNP $>$ 16,696 pg/ml) which was 51%.

For these Irish elderly patients, NT-proBNP predicted the risk of mortality in a year. NT-proBNP concentrations above 16,696 pg/ml were associated with mortality of 51%, independently of underlying medical conditions. A prospective study is required to confirm this significant correlation.

0008
Validation of SAHRU's National Deprivation Index in a sample of Irish community-dwelling older people

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The Small Area Health Research Unit (SAHRU) at Trinity College Dublin was commissioned in 1997 by the Directors of Public Health in Ireland to produce the 1st National Deprivation Index (NDI) for Health and Health Services Research. The current version (2006) is based on four indicators available in the Small Area Population Statistics of the Central Statistics Office (CSO): unemployment, social class, housing tenure and car ownership. Each electoral division (ED) in Ireland (nearly 3,500) is ranked in the NDI (1, least; 10, most deprived). Since unemployment is less relevant in older people as a deprivation indicator, we endeavoured to validate the NDI in community-dwelling older people by correlating individual self-reported socio-economic status with NDI based on ED of residence.

Non-probability sample of 568 community-dwelling older people (mean age 73, 68% females) attending the TRIL comprehensive geriatric assessment clinic between August 2007 and March 2009. Each participant's ED was retrieved using the CSO's online search engine (http://beyond2020.cso.ie/censusasp/saps/Pages/Saps_Search_Start_Live.asp). For each ED, NDI (2006) was obtained using the data available at http://www.sahru.tcd.ie.

The 568 participants of the sample covered 251 EDs, mostly from Dublin City ($N = 248$), South Dublin ($N = 120$) and Dún Laoghaire-Rathdown ($N = 68$). Both self-reported social class (census classification) and car ownership correlated strongly (in the expected direction) with NDI (χ^2 for trend, $P < 0.001$). There were also strong correlations with self-reported education level (χ^2 for trend, $P < 0.001$), self rated health status (χ^2 for trend, $P < 0.009$), age-adjusted Charlson Comorbidity Index (χ^2 for trend, $P < 0.001$) and emotional loneliness (χ^2 for trend, $P < 0.025$).

In this sample of community-dwelling older people, the NDI appeared to be a good predictor of self-reported socio-economic status and, in keeping with the large body of literature, a maker of poorer subjective and objective health. We conclude that the NDI could be a useful tool for Irish Gerontological research.

0009
Effect of STOPP/START criteria on the quality of prescribing for older patients: a randomized controlled trial

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Potentially inappropriate prescribing (PIP) is common in older patients and is associated with adverse drug events and hospitalization. We aimed to evaluate the effect of clinical application of screening tool of older persons' prescriptions (STOPP) and screening

tool to alert doctors to right treatment (START) criteria on prescribing quality in older hospitalized patients.

400 patients aged $\geq$ 65 years admitted to the general medical service of a university hospital were randomized to receive either usual hospital care or rigorous application of STOPP/START criteria by a research physician with written recommendations to the medical team. Prescribing quality was measured on admission, discharge and at 2, 4 and 6 months following discharge using the Medication Appropriateness Index (MAI) and Assessment of Underutilization of Medication (AUM) tools.

Demographics, co-morbidities, medication use and PIP prevalence were similar in both groups on admission [median (IQR) age 76 (71–81) years; median medications 7 (5–10), median MAI scores 8 (4–18) and 10 (3–17) in control and intervention groups respectively (U = 19834.5; $P = 0.886$)]. MAI scores did not change significantly in the control group [median 8 (3–17), $T = 3728.5$, $P = 0.133$, $r = -.07$)] but were significantly lower in the intervention group on discharge [median 3 (1–6), $T = 447$, $P < 0.001$, $r = -0.52$)] and remained lower during 6-month follow up [χ^2 (df 4) = 226.3, $P < 0.001$). There were significant reductions in unnecessary drugs (not indicated, ineffective or duplicate) and potential drug-drug and drug-disease interactions in the intervention group ($P < 0.01$). Under-use scores were 37.5% (control) and 36% (intervention) on admission ($U = 19463.5$, $P = 0.585$); these were 33.3 and 2.6%, respectively on discharge ($U = 12607.5$, $P < .001$) and were sustained during follow-up.

Clinical application of STOPP/START criteria to hospitalized older patients significantly improves prescribing quality and reduces unnecessary drugs and prescribing omissions.

0010
Re-visiting isolation and mobility in Ireland: an ethnographic account of rural transport systems

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The issue of isolation has historically haunted socio-cultural understandings of Ireland, and anthropological treatments of rural Irish life have been particularly controversial. Some past representations have naturalised isolation within the landscape; others have risked locating it within traditional social structures or cultural understandings. A reflexive, not fixed, understanding of isolation becomes crucial when working with rural ageing. Ethnographic work conducted on the Irish Rural Transport projects illustrates changing contexts and expectations of isolation and how it is addressed in mobility.

Ethnographic field work was conducted by Intel Ireland's Digital Health Group. Five rural transport projects were chosen which varied in scale, geography, and work practices. A week of participant observation with each included the busses, the office, active ageing groups, and meeting drivers, passengers, and local health service personnel. We then re-presented our interpretations back to informants, and identified potential avenues for conceptualising design and technology interventions and supports. Concepts were evaluated with rural transport officers and passengers, to initiate an iterative context-led inclusive design process.

Representations recurred of the struggle against isolation—identified as an explicit omnipresent danger—and justified many grassroots community mobilisations. The experience of such events has changed significantly in the last 20 years, along with expectations of what constitutes 'community' for elderly people. Contemporary frameworks of isolation are informed by a sense of appropriate socialising being with people of a similar generation and age-band, more than similar by gender, occupation, or religious affiliation.

In this context, transport and mobility occupies an ever more important role in social activities. The notion of transport as a mode of social capacitation is the inevitable accompaniment of the changing expectations of community life; and means that transport should be seen as an integral socio-cultural event in the experience of ageing, rather than an adjunct to sociality. Secondly, we need to re-visit the theme of isolation's meaning reflexively to appreciate its role in rural ageing populations

Session 4: Stroke

0011
Health education and Tai Chi reduce falls—a one-year follow-up RCT

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The study examined the short and long term effects of two interventions that are used to prevent falls: education and Tai Chi Chuan. With advancing years, a fall can be very serious and an increased number of falls/re-falls among older adults has been noted. Both education about risk factors and balance exercise programs such as Tai Chi Chuan are thought to help prevent falls.

This study adopted a randomised case-controlled design with a two-by-two factorial approach. It included three intervention groups and one control group in a community-based program. Cluster-randomised sampling was used and four villages in Taiwan City were selected. Three interventions groups and one control group were involved over five-months from late July 2000–January 2001 and each participant was followed up one year later ($n = 163$).

The intervention involving education plus Tai Chi Chuan resulted in a statistically significant reduction in falls and the risk factors of falls over the 5-month intervention period. After 1-year follow-up, participants receiving any one of the interventions showed a reduction in falls when compared with the control group. Tai Chi Chuan was able to significantly improve gait balance. Education may also help participants to prevent falls-by eliminating related risk factors present in their environment. However, it was found that at the one-year follow-up, any one of the three interventions had reduced falls significantly. The prevention of falls among the older adults needs to include multiple interventions. Education plus Tai Chi Chuan has both an immediately and a long-term effect and it is possible that a shorter intervention period using this approach would also be successful.

0012
Assessing falls risk in older Emergency Department attenders

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Falls account for approximately 20% of all Emergency Department (ED) presentations among people aged 65 years and over. The

majority of these patients are discharged home. This cohort is at high risk of future falls, injuries, depression, functional decline, repeat presentation to the ED, and have higher mortality rates than their peers. Falls risk assessment is rarely carried out in the ED, as the principal focus of emergency management of fallers is the acute management of injuries.

We aimed to test the feasibility of introducing a screening tool to examine falls risk, and to measure the prevalence of self reported falls in ED patients. For a 5 month period, the timed up and go (TUG) was measured at triage on all ambulatory patients over the age of 65 presenting to the ED. Each patient was also asked if they had fallen in the preceding 6 months.

3,043 patients over 65 years presented to the ED. 47.5%, were ambulatory and had a TUG recorded. 20.7% had an abnormal test. There was a higher prevalence of abnormal test recorded with increasing age with the exception of those aged over 90 years. 23.5% of patients who had TUG recorded, reported that they had fallen at least once in the previous 6 months. The rate of self-reported falls was directly proportional to TUG recorded. At 6 month follow-up, of the patients determined to have an abnormal timed up and go 14 were seen as new patients in the Geriatric Clinic. 11 patients already known to geriatric services were followed up. 269 (8.8%) patients had re-attended the ED.

The implication of providing access to multidisciplinary assessment and intervention for all those deemed at risk of falls is huge. Formal falls assessment in the ED and targeted intervention could potentially reduce falls risk, with beneficial effects for the patient, the emergency department and wider hospital services.

0013
3D Collagen based biomaterial as a solution to enhance bone healing

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The ageing population has led to an increase in patients with osteoporosis and fractures. Hence, malunion of fractures will be become more common problem which can be devastating to patients' quality of life. Development of biomaterials containing collagen could improve and enhance bone healing at these fracture sites. Collagen glycosaminoglycan (CG) scaffolds have been used successfully to enhance treatment of burn victims. We examined the potential of CG scaffolds to support human pre osteoblast hFOB growth to 35 days (Study A) and differentiation to 49 days (Study B).

Study A found hFOB cells attached and infiltrated the scaffold with time. Cells were observed at the scaffold centre after 14 days. Scaffold pores contained numerous cells and matrix deposition was evident at 21 days along the surface of the construct. Constructs appeared confluent with viable cells at 35 days; matrix deposition coincided with a reduction in porosity particularly at 35 days; scaffolds reduced in size by 70% that of baseline. Biomarkers in spent medium showed an increase in osteocalcin levels, no change was observed in sCTx and a reduction in the level of P1NP at 35 days; indicating the initiation of bone formation on the construct. Study B showed bone formation in more detail. Post 35 days, gene expression showed a decrease of Alkaline phosphatase ($P = 0.24$) with time whereas an increase in Osteocalcin was detected ($P < 0.05$). Mineralized constructs were detected up to 49 days by chemical staining. Scaffolds increased in stiffness with time (fivefold) over unseeded controls. Current work is focusing on improving the mechanical properties of the scaffold.

This study shows that CG scaffolds are biocompatible for human osteoblasts and bone formation. Cells attach throughout the biomaterial remain viable differentiate and mineralize the construct. By using patients' own osteoblast cells with CG scaffolds may be a viable and novel therapy in treating patients with delayed bone healing.

0014
Cobalamin levels do not differ between outpatients attending a falls and black out unit and age-and gender-matched community dwelling controls

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Introduction: Cobalamin deficiency is known to cause autonomic neuropathy, which can cause orthostatic hypotension. Some authors propose replacing cobalamin in patients with OH, but it is not known if its deficiency is an important contributor. We aimed to compare cobalamin levels in outpatients with OH presenting to a falls and black-out unit (FABU) with community controls with no symptoms attributable to OH.
Methods: Consecutive patients attending a FABU aged over 65 were screened for inclusion. All community-dwelling patients without intercurrent illness were included ($n = 100$, male $= 41$). These were age- and gender-matched with community dwelling controls who denied falls or dizziness within the preceding 12 months. Cases underwent active stand with non-invasive beat-to-beat blood pressure monitoring. Cases and controls underwent mini-mental test score examination (MMSE), anthropometrics and measurement of full blood count, renal profile, and serum cobalamin.
Results: There were no between-group differences in age, gender, creatinine or presence of hypertension. MMSE was lower in the FABU group [24.9, 95% confidence interval (CI) 24.3–25.6] compared to controls (26.8, CI 26.2–27.5), t test $P < 0.001$. Cobalamin did not differ between cases [383 pg/ml (CI 341.79–425.64)] and controls [385.9 pg/ml (CI 345.4–426.4)], $P = 0.94$. Median drop in blood pressure in cases was 41.5 mmHg (systolic) and 21 mmHg (diastolic). Cobalamin levels did not correlate with the drop in systolic (Pearson's $r = 0.04$, $P = 0.75$) or diastolic ($r = 0.03$, $P = 0.77$) blood pressure.
Discussion: These results do not support the hypothesis that cobalamin deficiency contributes significantly to orthostatic hypotension.

0015
Comparison of post-hip fracture physical activity in elderly community dwellers with age and gender-matched controls without fracture

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There is minimal research available on objective measurement of physical activity in hip fracture patients 3 months post hip fracture. Hip fracture volunteers ($n = 15$; mean age 75 years) and age and gender matched controls ($n = 15$) attending the falls and osteoporosis

clinic in St. James's Hospital participated in this study. Physical activity was recorded using the ActivPAL monitor and records documenting time spent sitting, standing, stepping, step count and sit-to-stand transitions were recorded for six consecutive days. In addition, physical performance measures of Berg balance Score, Timed-up and go and the 6-min walk test were recorded and quality of life and fear of falling scores were recorded using the SF-36 and Falls Efficacy Scale, respectively. A significant ($P < 0.05$) difference was observed in physical activity levels for hip fracture patients compared to age and gender matched controls in the time periods between 12:00 to 16:00 and 16:00 to 20:00. In the time period between 16:00 and 20:00, mean % time spent sitting in the hip fracture group was 64% of the time compared to 50% of the time in the control group. The control group spent 10.7% of the time stepping compared to the hip fracture group that spent 6.7% of the time stepping. Mean step count in the control group was 518 steps compared to 289 steps in the hip group. The hip fracture group recorded significantly lower mean Berg (41 ± 6), lower 6 min walk test results (266 ± 134 m) scores and quality of life scores (role-physical 13.6) compared to 54 for control group and showed higher timed up and go (17 ± 10 s) and fear of falling (53 ± 24) than the control group. Elderly people who have fractured their hip and returned home are not as physical activity as age and gender matched non-fractured controls. They also have lower physical performance measures and lower quality of life scores than elderly controls. Objectively measuring and comparing hip fracture patients to age and gender matched controls provides a point of comparison and a target for the amount of physical activity that should be achieved once discharged home.

0016
Statin therapy and improved early outcomes after ischaemic stroke in the North Dublin population stroke study

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Background: Statins have vasodilatory, anti-oxidant, and anti-inflammatory properties and have been postulated to exert neuroprotective effects. In animal models, they improve infarct volume and neurological outcome. Statins may also improve outcome following human stroke. We investigated the relationship of statin therapy and early outcomes following ischaemic stroke in the North Dublin Population Stroke Study.

Methods: A population-based prospective cohort study of stroke/TIA identified all strokes in North Dublin city over a 1-year period. Modified rankin score (mRS) and fatality were assessed at 7, 28 and 90 days. Medication use was recorded pre-stroke and post-stroke ($\leq$72 h).

Results: Of 460 ischemic stroke patients, 92.4% (416/450) were alive at 7 days, 85.5% 28 days, 80.2% (353/440) 90 days. 29.7% (134/451) were on pre-stroke statin, 70.4% (307/436) post-stroke statin.

On univariate analysis, patients taking a statin pre-stroke were more likely to survive to 7 days [OR 6 (CI 1.4, 25.4), *P* 0.005), with a trend towards later survival (*P* 0.07 at 90 days). Younger age (*P* 0.008), male (*P* 0.01), absence hypertension (*P* 0.004), lower baseline mRS (*P* 0.003) and NIHSS ($P < 0.001$) all increased likelihood 7-day survival. Similar factors were associated with 28 and 90-day survival.

Post-stroke statin was associated with living to 7 days [OR 14 (CI 4–41.9]], 28 days, and 90 days [OR 6 (CI 3.5–10.4]], all $P < 0.001$.

On multivariable logistic regression, survival was independently associated with absence hypertension (*P* 0.01 at 7 days), lower pre-stroke mRS (*P* 0.03) and NIHSS ($P < 0.001$). Pre-stroke statin was associated with survival to 7 (*P* 0.01), 28, and 90 days (*P* 0.025), as was post-stroke statin [OR 14.5 at 7 days (CI 4–53.1) to OR 5 at 90 days (CI 2.5–10.6), all $P < 0.001$). Post-stroke statins were associated with improved functional outcome on univariate analysis ($P < 0.001$). Recurrence was not associated with statin use.

Conclusion: Statin therapy was independently associated with improved early outcomes following ischaemic stroke, after controlling for age and stroke severity, supporting neuroprotective data from animal studies.

0017
Diagnostic utility of the ABCD2 score to distinguish TIA and minor stroke from non-cerebrovascular events, the North Dublin TIA study

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TIA diagnosis is frequently difficult in clinical practice. Non-cerebrovascular symptoms are often mis-classified as TIA by non-specialist physicians. Clinical prediction rules such as ABCD2 improve the identification of TIA patients at high risk of early stroke. We hypothesised that the ABCD2 score may partly improve risk stratification due to improved discrimination of true TIA and minor ischaemic stroke (MIS) from non-cerebrovascular events.

Consecutive patients with TIA were identified within a prospective population-based cohort study of stroke and TIA. The cohort was expanded by inclusion of patients with MIS and non-cerebrovascular events referred to a daily TIA clinic serving the population. Diagnosis was assigned by a trained stroke physician, independent of ABCD2 score.

594 patients were included [292 (49.2%) TIA, 45 (7.6%) MIS, and 257 (43.3%) non-cerebrovascular]. Compared with non-cerebrovascular event patients, high ABCD2 scores (>3) were more common in TIA [$P < 0.0001$, OR = 2.8 (95% CI 2.0–3.9)], MIS [$P < 0.0001$, OR 8.4 (95% CI 3.8–18.9)] and TIA + MIS [$P < 0.0001$, OR 3.1 (95% CI 2.2–4.4)]. The mean ABCD2 score showed a graded increase across diagnostic groups [MIS mean 4.8 (SD 1.4) vs. TIA mean 3.9 (SD 1.5) vs. non-cerebrovascular mean 2.9 (SD 1.5), $P < 0.00001$). The ABCD2 score discriminated well between non-cerebrovascular and cerebrovascular events—TIA (c-statistic 0.68, 95% CI 0.64–0.72), any vascular event (TIA + MIS) (c-statistic 0.7, 95% CI 0.66–0.74), MIS (c-statistic 0.81, 95% CI 0.74–0.87) from non-cerebrovascular events. Of ABCD2 items, unilateral weakness (odds ratio 4.5, 95% CI 3.1, 6.6) and speech disturbance (OR 2.5, 95% CI 1.6, 4.1) were most likely over-represented in TIA compared to non-cerebrovascular groups.

The ABCD2 score had significant diagnostic utility for discrimination of true TIA and MIS from non-cerebrovascular events, which may contribute to its predictive utility.

0018
Patients' perceptions of their health status and recovery post stroke

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Every year world wide, 5 million people experience permanent disability from stroke [1]. In the republic of Ireland, it is estimated 30,000 people in the community have residual disability from stroke [2]. There is growing recognition of the complexity of stroke recovery and there are a multitude of factors that potentially could affect stroke recovery.

The aim of this study was to identify stroke survivors' perceptions of recovery with respect to their health status and their goals post stroke. A descriptive qualitative study with semi-structured interviews was carried out. Data was analysed using thematic analysis. Ten participants with a first stroke incident participated. Time following stroke onset ranged from 3 to 7 days. Male to female ratio was 1:1 with mean age of 77 years.

All patients identified their goals for rehabilitation and perceived their health to be declining. Recovery was understood by patients as returning to a "normal" life which meant a resumption of the activities that they undertook before the stroke occurred. Two main themes emerged, "Getting back to life" and "How I'm feeling now". Participants perceived that the biggest challenge would be testing themselves at home.

Stroke is an individual, complex and life changing experience. This study highlights the need to understand the patients' description of their experience as it can inform care and service planning. Patients' recovery is predominantly evaluated using benchmarks relating to physical functioning. However, the patients' perceptions of their health should be included as this may inform the recovery process, customised to the patients' goals and their psychosocial needs.

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0019
Stroke, illness perception and quality of life

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Stroke is a leading cause of disability in the island of Ireland where two different health care systems operate; the NHS in Northern Ireland and the Republic of Ireland Health Care System. This research examines the quality of life and illness perceptions in stroke patients in a longitudinal, multi-centred study. 203 patients (67% of consecutive admissions) were recruited and assessed on admission for stroke in Belfast and Dublin hospitals.

Patients were cognitively capable of participation. Measures included the Illness Perception Questionnaire-Revised (IPQ-R, Moss-Morris et al. 2002), The Schedule for the Evaluation of Individual Quality of Life-Direct Weighting (SEIQoL-DW, O'Boyle et al. 1992), the Stroke Specific Quality of Life Scale (SSQOL, Williams et al. 1999), The Single Item Self-Esteem Scale (SISE, Robins, Hendin and Trzesniewski 2001), Hospital Anxiety and Depression Scale (HADS, Zigmond and Snaith 1983), The Recovery Locus of Control (RLOC, Partridge and Johnston 1989) and Multiple Perceived Social Support Scale (MSPSS, Zimet et al. 1988).

Patients were followed up at 12 months post stroke (76% follow-up rate). For the first time, stroke was analysed longitudinally in two different health systems using the IPQ-R. Significant differences in outcomes were found between patients admitted in the different health care systems. Results supported a logical inter-related schematic model to illness representations and stroke establishing the benefit of combining quality of life (QoL) and health related quality of life (HRQoL) measures to provide an in depth analysis of post stroke quality of life.

The SEIQoL-DW was proven as a reliable and valid assessment of QoL longitudinally over 12 months of assessment in stroke. Positive illness perception was important in determining increased QoL, positive internal locus of control and self-esteem increased QoL and an increase in perceived social support and decreased anxiety and depression increased QoL.

0020
Use of the ROSIER screening tool by nurses in a district general hospital stroke unit

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Background: Early diagnosis of stroke is important. Stroke recognition tools have been developed for community and accident and emergency use. Admission protocols to stroke units vary. Our stroke unit admits patients directly via primary care. Prompt assessment and identification of stroke patients for thrombolysis and exclusion of stroke mimics is vital. We prospectively examined the use of the recognition of stroke in the emergency room (ROSIER) tool on stroke unit admissions over a 6-month period.

Methods: Nurses received formal ROSIER training prior to study commencement. All suspected stroke admissions underwent nurse led screening, before admitting doctor assessment. Receiving stroke consultant was blinded to initial ROSIER scoring. A single investigator reviewed medical notes on discharge and recorded the final diagnosis. Diagnostic accuracy for stroke was compared for nursing staff, A&E staff and primary care.

Results: 106 patients (37% female) with suspected stroke were admitted to the stroke unit between July 2008 and February 2009. Median age 76 (IQR 64, 82), 46% of patients admitted directly from primary care and 56% via A&E. The overall stroke mimic rate was 26% (28/106). For GP admissions 73% (36/49) had a final diagnosis of stroke, compared to 74% (42/57) for A&E referrals. 89 patients admitted were ROSIER positive; of which 75 (84%) were confirmed strokes. Three patients ROSIER negative were later confirmed as strokes. Sensitivity for nurse ROSIER testing was 96% (95% CI; 88–99), PPV 83% (73–90). Median delay between nurse assessment and examination by stroke unit doctor was 63 min (IQR 30, 113 min).

Conclusions: Stroke unit nurses using ROSIER are accurate in identifying stroke patients. Prompt assessment may negate delays in awaiting medical assessment. Implementation of the ROSIER screening tool in triaging stroke patients in those admitted directly via

GP will aid in the identification of patients considered appropriate for thrombolysis.

Session 5: Cardiovascular and Brain Ageing

0021
Statins for the treatment of Alzheimer's disease and dementia

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There is accumulating evidence that cholesterol may be implicated in the pathogenesis of dementia and this has led investigators to assess the possible role of lipid lowering agents in the treatment of dementia. This Cochrane review evaluated the efficacy of statins in the treatment of Alzheimer's disease (AD) and vascular dementia (VaD).

Randomised double-blind placebo-controlled trials in which a statin was given for at least 6 months to patients with a diagnosis of AD or VaD were identified by a complete search of the Dementia and Cognitive Improvement Group Specialized Register, The Cochrane Library, MEDLINE, EMBASE, PsyclINFO, CINAHL and LILACS, trials databases and grey literature sources. Any type of statin (hydrophilic and lipophilic) given in appropriate dose compared to placebo was considered. Primary outcome measures were a change in MMSE and ADAS-Cog in patients with a diagnosis of AD/VaD on treatment with statins.

Three studies with 730 participants were identified—Simons 2002, ADCLT 2005, LEADe 2008. The three studies assessed change in ADAS-Cog from baseline. Mean change was entered into a meta-analysis; when the three studies were combined there was no significant difference in ADAS-Cog between the statin group and the placebo group (mean difference 0.18, 95% CI −1.11, 1.48, $P = 0.78$). Two studies assessed change in MMSE from baseline (Simons 2002, ADCLT 2005); there was a significant difference in MMSE between the statin group and the placebo group (favouring statins) when the two studies were combined (mean difference 1.81, 95% CI 0.69, 2.98, $P = 0.002$).

There is some evidence from the smaller trials (Simons 2002, ADCLT 2005) that statins may be beneficial in treatment of dementia but this is not borne out in the larger LEADe study. Further studies are required to be certain.

0022
Prognostic significance of the morning surge in systolic blood pressure in the older adult: Dublin outcome study

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The increased surge of morning blood pressure has been shown to be associated with higher risk cardiovascular events. This corresponds to a time period when most of these events occur. We studied the predictive value of the morning surge in systolic blood pressure (SBP) in a large cohort of older referred hypertensive patients.

At baseline, when not on antihypertensive medication, 2,794 patients (1,187 male, mean age 72.7 years) underwent ambulatory BP monitoring. Using a computerised national registry of death mortality outcome was ascertained. After a mean follow-up of 4.6 years there were 356 cardiovascular deaths. Morning surge was calculated as the difference between prewakening SBP and the morning average.

In a Cox proportional-hazard model morning surge was an independent predictor of cardiovascular mortality. The resultant unadjusted hazard ratios (HR) for a 10 mmHg increase in morning SBP for total cardiovascular, stroke and cardiac mortality was 1.36 (1.31–1.43), 1.31 (1.23–1.42) and 1.37 (1.30–1.45), respectively. After adjustment for sex, age, smoking history, diabetes, previous cardiovascular events, BMI, and mean daytime SBP the corresponding HRs were 1.12 (1.07–1.16), 1.09 (0.99–1.22) and 1.14 (1.08–1.20), respectively.

Increased morning surge is a significant predictor of cardiovascular mortality independent of other risk factors in older individuals with hypertension. Reducing this surge may be a therapeutic target in the future.

0023
Clinical characteristics and prodrome of vasovagal syncope (VVS) in young and old

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Vasovagal syncope (VVS) is characterised by a blood pressure drop with or without bradycardia/asystole. It affects 40% of individuals in their lifetime and accounts for 20% of syncope in older adults. Presentation differs between young and old, with less warning experienced in older individuals. 30% of those with carotid sinus syndrome demonstrate amnesia for loss of consciousness. This figure is unknown in VVS. We prospectively studied prodrome and presence of amnesia in those who had reproduction of symptoms on head-up-tilt (HUT) table testing, on attending a dedicated syncope unit.

Questionnaires were completed by individuals presenting with unexplained falls/syncope. In those who proceeded to lose consciousness with HUT, a protocol of questioning occurred immediately after and prior to leaving the clinic to establish presence of amnesia for loss of consciousness.

400 individuals completed questionnaires over 9 months. 94 had an end diagnosis of VVS confirmed with symptom reproduction on HUT table testing. 35/94 (37%) were > 60 years, 63/94 (67%) were female. 87% <60 years ($n = 48$) experienced warning pre syncope compared to 75% >60 years ($n = 21$). Those <60 years experienced more presyncopal symptoms such as sweating ($P = 0.06$), palpitations ($P = 0.03$), dizziness ($P = 0.09$) heat sensation ($P = 0.05$) chest discomfort ($P = 0.023$) and hearing disturbance ($P = 0.06$). Triggers occurred in all ages, with venepuncture and stress having predominance in those <60 years ($P = 0.02$). 59% ($n = 55$) lost consciousness during HUT, of whom 29% ($n = 16$) had full amnesia afterwards. Significantly this was higher in those >60 years, 46% (10/22) versus 18% (6/33), $P = 0.03$.

This study illustrates reduced vasovagal warning in older individuals with increased incidence of amnesia for loss of consciousness after the event. For the majority, VVS is easily treated, and should be

considered in those presenting with unexplained falls/syncope not found to be cardiac, in an effort to reduce risk of injury/morbidity.

0024
Does clinic heart rate predict cardiovascular and non-cardiovascular outcome?

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Increased heart rate has been shown to be associated with an increased risk of mortality from cardiovascular diseases in some studies, but not in others. There have been few studies evaluating this in the older adult. Increased heart rate has also been linked to non-cardiovascular causes of death. We studied the predictive value of clinic heart rate in the elderly as part of a large community study.

As part of the initial medical screen for the EPIC community study, baseline heart rate was measured in 8,064 patients (4,166 females, mean age 69.8 years). Patients have been followed up on a regular basis as part of the study protocol. After a median follow-up of 12.4 years there were a total 2,713 deaths, of which 1,094 was cardiovascular (310 stroke deaths).

In a Cox proportional-hazard model, clinic heart rate was an independent predictor of total and cardiovascular mortality. A one SD increase in heart rate (12.6 bpm) related to hazard ratios (HR) of 1.11 (1.07–1.16; $P < 0.001$) and 1.05 (1.00–1.11; $P < 0.05$) respectively. After adjustment (adjusted for sex, age, smoking history, diabetes, previous cardiovascular events, BMI, clinic systolic pressure and antihypertensive treatment) the HR was 1.18 (1.13–1.22; $P < 0.001$) and 1.12 (1.05–1.19; $P < 0.001$) respectively. Heart rate was a predictor for stroke mortality with a HR of 1.22 (1.07–1.38; $P < 0.001$, unadjusted) and 1.20 (1.06–1.37; $P < 0.001$, adjusted). Removal of deaths occurring within 1 year of screening did not greatly alter the results.

Increased heart rate is a significant if non-specific predictor of mortality independent of other risk factors in older individuals. There is increasing interest in purely chronotropic medications in recent years.

0025
Blood pressure associates with obesity measures and sodium in the 'oldest old' in the Belfast elderly longitudinal free-living aging study (Belfast

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Introduction: Hypertension is a key risk factor for stroke, cardiovascular disease and dementia. Although the link between obesity, sodium and hypertension is well established in younger people, little is known about their inter-relationship in people beyond 80 years.
Methods: The associations between anthropometric indices, sodium and blood pressure were investigated in a cross-sectional study of 495 community-living, apparently healthy people >80 years (mean age 90 SD 4.8 years), in Belfast Elderly Longitudinal Free-living Aging STudy (BELFAST).
Results: Incremental thirds of systolic blood pressure (<130, 130–145, >145 mmHg) associated with triceps skin fold thickness (*P* for trend 0.03), serum sodium (*P* for trend 0.004) but not weight (*P* for trend 0.07); incremental thirds of diastolic blood pressure (<80, 80–90, >90 mmHg) associated with weight (*P* for trend 0.05). In an age and sex-adjusted logistic regression model, hypertensive subjects (blood pressure ≥140/90 mmHg) had significantly higher body mass index [odds ratio (OR) 1.29] and a trend for increased weight (OR 1.22), compared to those with blood pressure <140/90 mmHg. In a further age and sex-adjusted model, subjects with blood pressure >120/80 mmHg, had increased weight (OR 1.36), body mass index (OR 1.44), triceps skin fold thickness (OR 1.33) and serum sodium (OR 1.37), compared with those with reference normal blood pressure ≤120/80 mmHg.
Conclusions: In the BELFAST study of over eighty year olds, hypertension and blood pressure above the 120/80 mmHg normotensive reference value, tracked with anthropometric indices related to obesity and serum sodium, suggesting that obesity-related mechanisms contribute to hypertension even in the 'oldest old'.

Poster Section

0001
Older people in the emergency department

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Introduction: We sought to determine the characteristics of older people attending a single ED using a retrospective 12 month study.
Methods: A retrospective review of all patients attending the Emergency Department from August 2007 to July 2008 was undertaken. We analysed Emergency Department attendance rates for each age category, the percentage of patients arriving by ambulance, referred by general practitioners, admitted for each triage category, and the presenting complaints of patients attending the Emergency Department. The proportion of patients who might have been dealt with in the primary care setting was estimated using a method previously described by Sprivulis.
Results: 24,896 patients attended the Emergency Department over the 12 month period. The attendance rates was highest in the over 80 age group (692 attendances/1,000 persons/year). Older adults were more likely to be placed in a higher triage category and were more likely to arrive by ambulance [odds ratio (OR) 3.3, 95% CI 2.9–3.7, $P < 0.0001$ for those >80]. They were also more likely to be referred by a general practitioner, and were more likely to be admitted (OR 2.5 95% CI 2.3–2.8, $P < 0.0001$ for those aged >80). The proportion of patients who could have been managed in a primary care setting ranged from 3.9% of patients aged 16–64 years to 3.1% of those over 80 years of age ($P = 0.10$).
Discussion: The ideal of rapid diagnosis and dispatch in the ED may not be possible or appropriate in those with multiple morbidities, medications and cognitive and functional impairments. This study demonstrates that older people are the most frequent users of ED's and attend the ED appropriately. They are more likely to be acutely unwell on arrival and to require admission. Design of the physical space of the ED and ED patient systems and protocols must take account of the needs of older people.

0002
Outcome following 6,171 fractures of the proximal femur in Northern Ireland

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Introduction: A total of 6171 consecutive subjects were enrolled in a prospective audit of fractures of the proximal femur treated at the Royal Victoria Hospital Belfast between 2002 and 2009.
Methods: Audit staff gathered standardised information including pre-injury domicile, mobility, medical status, acute hospital care, and follow up outcome at 4 and 12 months.
Results: There were 4,656 females (75.4%) and 1,515 males (24.6%) enrolled in the audit, with a mean age of 80.3 years in females and 78.8 years in males.The total number of fractures increased by 15% from 906 in 2002 to 1037 in 2007, with 93.9% receiving operative intervention.

The 30 day mortality was 7.1% and the one year mortality 23.9%.

At 1 year, of those admitted from home, 69.5% had returned home and 19.9% had died.

Of those admitted from nursing home care, 38% had died at 1 year.

Of those previously able to walk alone outdoors, 46% were walking alone outdoors at 1 year.
Discussion: The impact of proximal femur fracture remains high in terms of both loss of independence and mortality. The need to develop strategies and measures to avoid and reduce fracture of the proximal femur requires a high public health priority.

0003
Metformin taken with food can reduce its ability to inhibit DPP-4 activity in older patients with Type 2 diabetes

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Glucagon-like peptide-1 (GLP-1) is an insulinotropic hormone which is a major contributor to the enteroinsular axis. Its therapeutic potential in human diabetes is limited by rapid degradation and inactivation by the enzyme dipeptidylpeptidase-4 (DPP-4). We investigated the acute effects of metformin with and without food on DPP-4 activity in Type 2 diabetes.

Ten subjects with Type 2 diabetes (6 male/4 female, age 65.8 ± 2.6 years, body mass index 30.0 ± 1.2 kg/m^2, HbA1c 6.3 ± 0.2%) received metformin 1 g orally or placebo together with a standard mixed meal (SMM) in a random crossover design. Six subjects reattended fasting and received metformin 1 g without a SMM.

Following SMM ($n = 10$), DPP-4 activity was not suppressed by metformin compared with placebo (area under curve AUC 0–4 h: 1574 ± 4 and 1581 ± 8 μmol/min, respectively). Plasma glucose, insulin and total GLP-1 were not different. After fasting ($n = 6$), DPP-4 activity was suppressed ($P < 0.02$) when compared to those given metformin with a SMM (AUC 0–4 h 1494 ± 9 vs. 1578 ± 4 μmol/min). Metformin plasma levels were significantly higher ($P < 0.03$) after fasting than SMM (AUC 0–4 h 457 ± 55 vs. 350 ± 66 mcg/ml).

Metformin inhibits DPP-4 activity in Type 2 diabetic patients in the fasting state but not when taken with a standard mixed meal. Metformin plasma concentrations are lower if taken with food. Metformin may have potential for combination therapy with incretin hormones.

0004
Geriatrics rehabilitation audit

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Introduction: Elderly patients admitted to geriatric wards show better outcome in terms of functional capacity compared to those admitted to general medical wards. Patients who receive multidisciplinary rehabilitation programme would have better chance of returning home and living independently.
The aims of this audit were to study functional and cognitive capacity of elderly patients before and after multidisciplinary rehabilitation programme, and to assess LOS and a discharge outcome.
Method: 114 patients admitted to the rehabilitation unit over a 6 months period were studied. Demographic data, functional, cognitive data and LOS were collected.
Results: Male:female ratio was (47:67), median age 79.5 years.
93 patients were living at home prior to their admission (82%) of these 72 patients (77%) returned home on discharged.

82 patients were discharged home, (72%) in total.

10 patients who were admitted from sources other than home were discharged home (representing 12% of the total number of patients returning home).

Median Barthel on Admission (13), and on Discharge (15), 55 patients had improved Barthel, Barthel Dis-improved (14), and Barthel Stayed the Same (35).

Median AMTS on Admission (9), Median AMTS on Discharge (10).

Median LOS was 14 days (range 1–130 days).
Conclusion: Multidisciplinary rehabilitation improves functional capacity of elderly patients enabling them to return home and reduce need for admission to continuing care. Furthermore it can improve patient's capacity to live independently even after spending some time living in welfare house or long term care.

0005
A psychoanalytic intervention in caregivers over 65 years

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Introduction: Existing dementia caregiver interventions fall into two general categories: interpersonal peer to peer support and instruction based support. What has not been looked at in any great detail is a psychoanalytic intervention looking specifically at the notion of loss, which has only recently been identified as the single biggest barrier for dementia caregivers even before hands on care, lack of support and financial burden is taken into account.
Method: A mixed methodology combining quantitative measures concerning burden (objective and subjective), anxiety and stress levels, social support and marital satisfaction, the results of which will be illustrated with rich narratives detailing the process of engaging with a short term psychoanalytic intervention and the effect that this articulation can have an the overall burden of caring for a spouse with dementia.

Results: Preliminary results have shown that despite an increasing objective burden as is experienced in the progressive nature of dementia, the subjective burden can be improved via an articulation of these losses.
Discussion: This notion of loss and how it is represented via the ageing caregiver and the articulation of their experience is what the focus of this research rests on. How the articulation of this often traumatic experience can aid in the reduction of overall felt burden is the question and if it does what are the implications for future treatment. Research has shown that how the caregiver copes with the burden is an independent predictor of institutionalisation beyond that which may be explained by the relative's impairment. The discussion then in terms of service delivery will be whether a treatment of these subjects attempting to reduce their burden and in turn the affective symptoms in their spouses, can affect the speed at which the demented person is institutionalised.

0006
Does education help compliance of medication on discharge

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40–60% of elderly patients take their medication incorrectly. This leads to increased side effects and increased morbidity and mortality. We determined if 22 elderly patients understood about their medication on leaving our hospital. All patients had a mental test score greater than 7/10 and had good hearing and vision. Average age was 76 years and average number of medications being used was 6. 77% knew the names of all their medication; 86% knew the dosages and frequency of all their medication. Only 55% of patients knew what all their medication was for and only 23% knew the potential side effects of some or all of their medication. These patients had one to one education with a doctor pre discharge and were telephoned one week later and resurveyed. 86% knew the names of all their medications, 86% knew the dosages and frequency of their meds, 82% knew what their medication was for and 64% now knew the potential side effects of some or all of their medication.

A short period of education by a health care worker prior to discharge seems to help with older peoples understanding of their medication and may prevent medication complications.

0007
The cognitive failures questionnaire when used with older adults in Ireland

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Introduction: The Cognitive Failures Questionnaire is a 25 item scale which was originally designed to measure motor, memory and perception lapses (Broadbent et al. 1982). Previous research has indicated that the CFQ is correlated with various personality traits such as neuroticism, anxiety and worrying as well as broader constructs like attention deficit disorder (Merckelbach et al. 1996; Wallace et al. 2002). High CFQ scores are considered by some to indicate vulnerability to stress (Wagle et al. 1999). To date, research with regard to the use of the CFQ with older adult populations has been limited. The aim of this study is to determine how older adults perform on the measure and how it relates to and is predicted by various demographic, social and cognitive variables.
Method: Data from 400 participants who attended a multidisciplinary research clinic will be analysed to explore these issues.
Results: Preliminary analyses demonstrate that the CFQ is significantly correlated with a number of variables such as perceived stress, depression, anxiety and personality traits like neuroticism. The results of linear regressions indicate that neuroticism and anxiety remain significant predictors of CFQ performance after the influence of mental status, age, gender and education level have been controlled for ($\beta = 0.252$, $P = 0.000$ and $\beta = 0.207$, $P = 0.000$). Other cognitive tasks such as the Trail Making Task and Word Recall were found not to be related to CFQ performance.
Discussion: This may indicate that performance on the CFQ is more dependent on social and personality variables than on cognitive status. These findings could have implications for how the CFQ is interpreted and utilised when working with older adults and may inform how the treatment of everyday cognitive decline may be approached.

0008
The impact of falling on perceived health

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Introduction: Research has shown that perceived health status (PHS) declines with age (Ostbye et al. 2006) and is related to morbidity and mortality, use of health care (Idler and Kasl 1995) and functional decline (Benyamini and Idler 1999). Cwikel et al. (1990) furthermore showed that a recent fall negatively affects the perceived health of older adults. The aim of this study was to investigate the differential socio-demographic, medical and psychological factors associated with PHS in older adult fallers.
Method: 406 participants aged 60+ were administered measures of medical morbidity, neuroticism, hearing, vision, falls history, functional capability, depression, loneliness, perceived stress, cognition, social networks, fear of falling and demographics.
Results: Linear regressions showed that within a group of fallers, PHS is predicted by Instrumental Activities of Daily Living. However, within a healthy non-faller group, the Charlson Co-morbidity Index predicted self-reported health. IADL was not a significant predictor ($P = 0.279$). There was no interaction between age and faller status accounting for perceived health, and fear of falling was not predictive.
Discussion: Results indicate that those who have suffered a fall perceive their health differently than those who have not. Functional decline may play a more significant role than medical morbidity in the aftermath of a fall.

0009
Neuropsychological assessment of mild cognitive impairment

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Mild cognitive impairment (MCI) is the primary focus of much research. MCI has traditionally been associated with a mild memory

deficit and a preserved level of function. There is growing evidence that in addition to memory difficulties, individuals may present with impairments in other cognitive domains. The purpose of this study was to carry out a full neurocognitive assessment on patients with MCI. We wished to determine if patients with MCI have deficits in cognitive domains other than memory.

Patients were recruited from the memory clinic at the Belfast City Hospital. Control subjects were also recruited. Both patients and controls were invited to undergo a neuropsychological test battery. The examination comprised tests for pre morbid IQ (NART), immediate and delayed recall (NYU paragraph 1 and 2), executive function and attention (CLOX 1, Colour Trails 1 and 2, Stroop, Hayling Sentence Completion Test), language (COWAT verbal fluency test) and visuospatial function (Brixton Spatial Anticipation Test, CLOX 2).

102 MCI patients and 55 controls were assessed. There was no difference in age, gender, education or pre-morbid IQ between the groups. Function as measured by the disability assessment for dementia (DAD) did not differ between the groups. Mean MMSE in the MCI group was 27.9 (SD 1.7) and in the control group was 29.6 (SD 0.7). ANCOVA analysis revealed a significant difference between the groups in the domains of immediate recall ($P < 0.01$), delayed recall ($P < 0.01$), executive function ($P < 0.01$), attention ($P < 0.01$), language ($P < 0.01$) and visuospatial function ($P = 0.02$).

We demonstrated significant impairments in cognitive domains other than memory in this cohort of MCI patients. This illustrates the importance of carrying out a full neurocognitive assessment on patients presenting to a memory clinic. We wish to further this research by following these patients over time.

0010
Decision making tools for housing design for the aged population

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This research builds on the Changing Ageing Partnership grant "Designing better homes for the ageing population" carried out by the authors. This study revealed that the design of the existing housing stock and the level of comfort sought by the users needs to be improved.

The study involved a staged literature review that investigated inclusive design, the architectural design process and the available tools. This showed that the interaction of a person with an environment can contribute to wellbeing and stimulate a user or intensify the experience of a disability and this should be taken into account when designing an environment. This has been recognised in law by Lifetime Homes regulations (promoted by the Joseph Rowntree Foundation), which are to be enforced in 2011 by the UK government and will initially apply to all public sector housing.

A review of the design process revealed that designers needs and requirements consequently affect the design and illustrated the issues that architects are faced with when designing a scheme for the aged and even though architects have guidelines they still need assistance when designing for the aged. The review inspected the design process and tools used when approaching such a project with results ranging from housing association guidelines and legal standards to personal approaches and inclusive design ethos.

This research has responded to the findings of the literature review by proposing to develop a software tool which will aid in auditing the drawing. This tool should work with existing benchmark software by checking, documenting and providing feedback on the design in comparison to guidelines and regulations, such as Lifetime Homes. This will benefit the user by ensuring that the design meets the requirements of legislation at an earlier stage, delivering more accessible housing designs thereby improving the lifestyle and comfort of disabled users.

0011
Self-neglect: an overview of the literature

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Background/aims: Self-neglect in older adults is a serious public health issue and a social problem. It is characterised by an inability to meet one's own basic needs and is an increasingly common problem which can be intentional or unintentional. This paper presents an overview of research on the concept, prevalence, risk factors and perceptions of self-neglect.
Method: Databases searched included those relevant to nursing, medicine, psychology and allied health over the past ten ears using the key term 'self-neglect'. Criteria used for inclusion were research publications pertinent to self-neglect, prevalence, risks and perceptions of self-neglect. Seminal papers relevant to these areas published were included.
Results: Some researchers view self-neglect as a distinct syndrome while others believe it to be a number of symptoms that can be linked to a number of mental and cognitive disorders. Estimated prevalence of self-neglect reported to Adult Protection Services in US range from 37 to 65% and Ireland 20 to 25%. Risk factors for self-neglect include old age, cognitive impairment, functional and social dependence, history of social isolation alcohol and substance abuse and presence of personality disorder. Medical and health professionals perceptions of self-neglect vary and older people do not interpret their behaviours as self-neglectful.
Conclusion: Self neglect is poorly conceptualized in the literature. It accounts for a large numbers of referrals to Adult Protection Services and several risk factors have been identified. Perceptions and views of self-neglect vary and the voice of adults who self-neglect is almost absent from the literature.
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0012
A case report that highlights a probable 'new' risk factor for stroke

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A 77 year old man developed expressive dysphasia and right facial weakness while receiving IV immunoglobulin infusion (IVIg) for idiopathic thrombocytopaenia prior to planned coronary artery bypass surgery. He was hyper reflexic on the right with an upgoing right planter. ECG showed controlled AF and CT showed an early left

MCA territory infarct and previous established infarctions right parietal and occipital lobes.

Carotid doppler scan was normal. Risk factors for stroke included AF and known ischaemic heart disease. He made an almost complete recovery. At review he remained well with no further recurrence. The patient and family reported previously developing numbness down his arm immediately following IVIg which lasted for 2 days, this may have also been an ischaemic stroke considering CT findings.

It is possible that this could have been coincidental stroke in an elderly man with risk factors. However, the temporal relationship of the IVIg and stroke on this occasion and possibly following his previous treatment supports the probability of IVIg induced stroke in this patient.

As far as we are aware there have previously been no case reports of stroke after IVIg in Ireland. However, 11 cases of stroke have been reported in the yellow card data of immunogloblins (MHRA) and a series of 16 cases has been reported in the USA1. That report suggests that IVIg is a potential factor in developing strokes most commonly during infusion or within the first 24 h as occurred in this case. Proposed mechanisms include: elevation of serum viscosity, cerebral arterial vasospasm, vasculitis, introduction of vasoactive cytokines or clotting factors. As usage of IVIg is increasing clinicians may need to consider the risk of causing stroke particularly in individuals with other stroke risk factors.

References: (1) The clinical features of 16 cases of stroke associated with administration of IVIg. Neurology 2003;60:1822–1824.

0013
Gross over-prescription of proton pump inhibitors in Irish healthcare

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Introduction: Proton pump inhibitors (PPIs) are amongst the most frequently prescribed drug classes in Ireland. Previous studies have demonstrated that PPIs are over-prescribed worldwide, both in primary and secondary care. PPIs, while once regarded as benign, have an increasingly documented side-effect profile, including osteoporosis, gastrointestinal discomfort, interstitial nephritis and *Clostridium difficile*-associated diarrhoea. We examined whether the prescription of PPIs in medical patients admitted to our hospital followed evidence-based guidelines.

Method: A prospective study of all medical patients admitted to our hospital in a 1 week period was conducted. A pro-forma incorporating the NICE guidelines on PPI usage (2005) and including demographic and clinical information based on patient interview, case note and drug chart review was completed for each patient.

Results: 72 patients (37 male), mean age of 72 (SD 15.8) years were admitted over the study period. Over a half (39) were receiving a PPI at the time of admission of which 26 had been commenced in primary care and 13 in secondary care. Listed indications for PPI use included concurrent NSAID use (36%), GORD (23%), concurrent steroid use (8%) and PUD (5%) with 20% having no discernable indication. Based on the NICE guidelines 69% of the patients were inappropriately receiving PPIs. Only 19 of the 39 patients on PPIs had been reduced to the maintenance dose thus only seven patients had an evidence based prescription for a PPI and were on the correct dose.

Discussion: In conclusion this study demonstrates that PPIs are grossly over-prescribed in Irish Healthcare. Prescribing of PPIs should follow evidence based guidelines as they have a significant side-effect profile.

0014
Efficacy of nitric oxide in stroke (ENOS) trial—a prospective randomised controlled trial in acute stroke

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Rationale: Acute hypertension is associated with a poor outcome after stroke. No large trials have assessed the effect of altering BP during the acute phase of stroke on outcome. We are testing whether nitric oxide, a multimodal molecule given as glyceryl trinitrate (GTN), is safe and effective in improving outcome after acute stroke. Furthermore, around half of all patients admitted with acute stroke are taking antihypertensive therapy immediately prior to the stroke. No data exist as to whether it is beneficial or safe to stop or continue this treatment during the acute phase.

Design: ENOS is a prospective, international, multicentre, randomised, parallel-group, blinded, controlled trial. 5,000 ischaemic or haemorrhagic stroke patients with systolic BP 140-220 mmHg, and within 48 h of onset will be included. Subjects will be randomised to 7 days of single-blind treatment with transdermal GTN or control. Those patients taking prior antihypertensive therapy will also be randomised to continue or temporarily stop this for 7 days. ENOS is conducted over a secure internet site. The primary outcome is modified Rankin Scale at 90 days which is carried out by a blinded assessor. The analysis will be by intention to treat.

Trial status: As at 18th May 2009, 1,272 patients had been recruited from 73 centres (Australia, Canada, China, Egypt, Hong Kong, India, Malaysia, New Zealand, Philippines, Poland, Romania, Singapore, Spain, Sri Lanka and UK). More centres welcome to join.

Funding: The Medical Research Council.

0015
Does day hospital therapy reduce falls in older people?

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One third of people over the age of 75 years fall annually. A quarter of these result in injury which include fractures. We studied 31 elderly patients who attended our day hospital for recurrent falls. These patients were assessed and entered a programme of physiotherapy and Occupational Therapy to reduce their risk of falls. There were 18 males 13 females and their average age was 81 years. All patients had more than one fall in the previous year. The average number of attendance at the day hospital was 7.

One year later 21 (68%) had no more falls and 7 (22%) had just one more fall. Of 15 randomly chosen patients 11 (73%) had high risk of falls by the Tinetti score. This was reduced to 2 (13%) after the falls group intervention. One patient of the 31 suffered a fracture in the following year.

A programme of falls prevention can reduce falls and risk of falls in frail elderly attending a day hospital.

0016
Patient and socioeconomic factors associated with hospital admission from the Emergency Department in an elderly urban population

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Hospital Emergency Departments (ED) are an important safety net for older people. This study compares the characteristics of older people admitted to hospital with those discharged directly from ED and identifies factors independently associated with hospital admission.

The study was a cross sectional survey of older people who attended two urban EDs. Three hundred and seven patients aged $\geq$ 65 years and community dwelling consented to participate, stratified into equal sized groups of admitted or discharged patients. Demographics, socioeconomic, physical, cognitive and social networks were assessed using a structured questionnaire and validated tools. Simple descriptive statistics and a multivariate logistic regression model were used to identify factors associated with hospital admission. Odds ratios and 95% confidence intervals (CI) are presented.

The analysis involved 306 patients, 158 admitted and 148 discharged form the ED. There was no significant difference between admitted or discharged groups in demographic or socioeconomic factors. Over 30% of both groups were aged $\geq$80 years, the majority of patients owned their own home and relied on the state pension. There was no significant difference between the groups in terms of anxiety, depression, cognitive ability or social networks. In the multivariate model four variables were independent predictors of hospital admission. These were previous hospital admission, OR 6.16, (95% CI 2.61, 14.5), Manchester Triage Category 1–2 OR 5.01, (95% CI 1.19, 21.1), moderate or low energy levels carried a two to three fold risk of admission, as did presenting with a cardiac, neurological or respiratory conditions. Thirty percent of patients discharged shared similar risk profiles to admitted patients, however post ED discharge nearly 50% had no documented evidence of follow-up or referral.

This study highlights the vulnerability of older people attending the ED. Referral and follow-up of older patients from the ED is low and requires more attention from medical and nursing staff.

0017
Patient awareness of osteoporosis, risk and protective factors, and own diagnostic status: a cross-sectional study

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Background: Osteoporosis, a common and serious condition, is often preventable and even treatable. Establishing current levels of understanding in an Irish population, not previously studied, will help inform future public and patient education.
Methods: We conducted a cross-sectional survey of 126 randomly-selected Day Hospital patients. Where AMTS $\leq$ 6, their carer was interviewed. Questions examined awareness of (1) bone involvement, (2) predisposing/protective factors, (3) complications, (4) awareness of the patient's own osteoporosis status and treatment.
Results: 103 patients, 23 carers participated; 78.6% were female. Patients' mean age was 81.6 years (SD 6.2), carers' 55.6 (SD 13.6). 87.3% had heard of osteoporosis, 56.1% knew it affected bone, 30.2% knew involved thinning/architectural change. 65.9% reported a doctor had never discussed the condition. 92.9% correctly identified whether or not diagnosed with osteoporosis, 92.9% whether or not had had a DEXA. > 96% correctly identified their treatment status (42.9% on calcium/vitamin-D, 26.2% bisphosphonate, 3.2% strontium). Regarding risk factors, 88.9% of participants recognised ageing, 83.8% female gender, 65.1% smoking, 62.4% thin habitus, 51.6% alcohol-excess, but <10% other risk factors, e.g. hyperthyroidism/steroids. Awareness of complications ranged from 91.3% for fractures to 44.4% for height-loss. Awareness that calcium/vitamin D-containing food and medication and exercise are protective was good (>85% for each).
More women had heard of osteoporosis (91 vs. 74%, *P* 0.02), knew it affected bone (*P* 0.005), and appreciated gender a risk factor (*P* 0.015) and that pain (*P* 0.05) or kyphosis (*P* 0.014) are complications. Patients with confirmed osteoporosis were more likely to know it affected bone (48.7% vs 80%, *P* 0.006). Cognition did not predict understanding, but those with impairment were less likely to recall if DEXA performed (*P* 0.01). Age was not associated with understanding, nor were carers more likely to understand osteoporosis than patients.
Conclusion: There is scope for improving patient osteoporosis education, which may in turn improve compliance with preventive and therapeutic measures.

0018
Seasonal variation of serum vitamin D in Irish community-dwelling older people: the St James's Hospital experience

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Above 35° North, little Vitamin D (VitD) can be produced in winter (Holick 2007). In Ireland (53° North), the risk of VitD deficiency could extend into non-winter seasons. Previous Irish studies showed a significant seasonal effect of serum VitD in older people (McKenna 1985; Hill 2006, 2007; O'Sullivan 2008). However, little is known about its magnitude and relative contribution in the face of other factors affecting VitD status.

723 community-dwelling people aged $\geq$60 (mean age 73.7, 73.7% females) seen in two outpatient clinics (A: comprehensive geriatric assessment, $N = 456$; B: bone health, $N = 267$). Patients were recruited over seven consecutive seasons (autumn 2007–spring 2009). Monthly global solar radiation data (Dublin Airport observatory) were downloaded from http://www.met.ie. All samples for serum 25-OH-VitD were analyzed in the Biochemistry Department at St James's Hospital (immunoassay). Statistics were computed with SPSS 16.0 (GLM).

In $N = 723$, season ($P = 0.001$) was a significant predictor of VitD after controlling for age ($P = 0.310$), gender ($P = 0.300$), clinic

($P = 0.535$) and VitD supplementation ($P < 0.001$). Overall, the pattern of VitD variation paralleled that of the global solar radiation recorded over the study period. On average, supplemented subjects ($N = 308$) had higher VitD levels (95% CI 62.6–70.2) than non-supplemented subjects ($N = 415$, 32.6–39.2), with identical seasonal variation. Summer 2008 (sunniest season) had the highest VitD averages, 71.5–87.3 in the supplemented ($N = 69$) and 36.1–48.0 in the non-supplemented ($N = 73$). In winter 2007, mean levels for supplemented ($N = 34$) were 54.6–73.0 versus 20.1–34.7 for non-supplemented ($N = 62$).

In Irish community-dwelling older people, VitD supplementation raised serum VitD levels significantly, about 30 units on average. However, only those taking supplements during the sunniest season got close to a normal VitD level ($\geq$80). Non-supplemented people were insufficient all year round, and close to deficiency in winter. There is a strong case for universal, seasonally-adjusted VitD supplementation in older people.

0019
Cognitive loading slows walking speed in older people

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With cognitive loading, the majority of older people slow their walking speed. Our aim was to quantify the slowing and establish whether baseline cognition predicts the degree of slowing during two different cognitive load tests, a verbal task (VT) and a motor task (MT).

327 community-dwelling older people (mean age 71.2 years, 70.6% females) underwent gait assessments with GaitRITE® in a comprehensive geriatric assessment clinic. Baseline walk was requested at the participants' preferred speed. Then a VT was introduced where participants were asked to say every second letter of alphabet whilst walking. Then a MT was requested consisting of taking coins out of a paper cup whilst waking. All participants had their cognition assessed on the same day by a psychologist. The cognitive battery included Mini-Mental State Examination, National Adult Reading Test, immediate and delayed word recall, animal naming, digit backwards, prospective memory, executive functions, praxis and CAMGOG. Statistics were computed with SPSS 16.0.

The average walking speed at baseline was 120.8 cm/s (SD 26.0) for males ($N = 96$) and 109.0 (SD 24.0) for females ($N = 231$). The average slowing with the VT was 20.7 (SD 21.5) cm/s for males and 18.4 (SD 17.4) cm/s for females. The average slowing with the MT was 16.2 (SD 18.6) cm/s for males and 13.1 (SD 14.9) cm/s for females. There were no significant gender differences respectively. After controlling for age, gender and education level, neither slowing with VT nor slowing with MT were significantly predicted by any of the baseline cognitive variables considered.

This study confirmed that, overall, older people reduce their walking speed significantly when cognitive loads are introduced. However, the slowings did not seem to be predicted by baseline cognition. Further research is needed to establish the determinants of this readily observable phenomenon.

0020
"Lonely days invade the nights": less nocturnal heart rate variability in lonely elders

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Loneliness in older people has been associated with increased risk of coronary disease (Sorkin, Rook et al. 2002) and sleep dysfunction (Cacioppo et al. 2002). HRV (heart rate variability) is a non-invasive maker of cardiac autonomic modulation. This pilot study aimed at establishing whether nocturnal HRV parameters are associated with loneliness.

Setting: comprehensive geriatric assessment clinic. Subjects: convenience sample of 16 subjects (mean age 73.4, 70% females) consenting for overnight home monitoring with the Medilog® AR12 Holter recorder. Exclusions: atrial fibrillation, heart conduction abnormalities, pacemaker, risk factors for autonomic neuropathy, anti-arrhythmic medications, dementia. Measures: loneliness: six-item De Jong-Gierveld Scale; HRV: time (SDNN, rMSSD, pNN50) and frequency domain (VLF, LF, HF, LogLF/HF) parameters. Analyses: MedilogDarwin® software. For each subject, a continuous signal period was selected starting not earlier than 1 am and of at least 1 hour duration. All periods were automatically identified as having <5% motion artefact, suggesting that subjects were asleep. Statistical analyses were performed with SPSS 16.0. Age was entered as a covariate in all bivariate correlations (General Linear Model).

After controlling for age, higher levels of loneliness were associated with lower high frequency (HF) spectral power in nocturnal HRV ($P = 0.048$). There was a trend towards lower low frequency (LF) power ($P = 0.079$). In the time domain, there were trends towards lower values of the root Mean Squared Sum of Successive NN interval differences (rMSSD) ($P = 0.082$) and Standard Deviation of NN intervals (SDNN) ($P = 0.092$).

HF-HRV, a marker of cardiac vagal control, was recently found to be reduced during psychological stress in older women with worse social functioning (Egizio et al. 2008). Our results suggest that loneliness, a psychological stressor, could manifest as reduced vagal tone during sleep, which could theoretically explain both the higher cardiovascular risk and the sleep dysfunction experienced by lonely individuals.

0021
Polypharmacy and falls: is orthostatic hypotension a mediator?

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Polypharmacy is an independent risk factor for falling. A recent systematic review identified psychotropics as the main culprits, whilst cardiovascular medications were weakly associated with falls (Hartikainen et al. 2007). To some, the clinical detection of orthostatic hypotension (OH) is unlikely to be useful in predicting falls

(Liu et al. 1995). We tested whether OH interacts with use of psychotropics/cardiovascular medications in predicting current faller status in a sample of Irish community-dwelling older people.

500 participants aged ≥60 attending the TRIL Clinic between August 07 and March 09 (mean age 72.2, 68.6% females). Participants with MMSE < 23 and Berg Balance Score < 36 were excluded. OH was defined as symptoms of dizziness/light-headedness during active stand test. Number of psychotropics (from ATC codes N06A, N05CD, N05CF) and cardiovascular medications (from codes C07A, C03, C09, C08, C02CA, C01DA) were recorded for each subject. Those who had two or more falls in the last year were classified as fallers. Statistics were computed with SPSS 16.0.

14.6% of subjects were fallers, and 31.0% had OH. There was no association between number of cardiovascular medications and faller status, but there was an association between number of psychotropics and faller status (Mann–Whitney U, $P = 0.007$). A logistic regression model was computed with two interaction terms as predictors of faller status: number of cardiovascular medications*OH and number of psychotropics*OH. Whilst the former interaction was not significant (95% CI for OR 0.77–1.40, p = 0.814), the latter was significant (95% CI for OR 1.35–3.52, $P = 0.001$).Despite the cross-sectional limitations, results add to evidence that cardiovascular medications may not have a strong association with OH and falls. OH may be relevant in mediating the relationship between psychotropics and falls. The clinical detection of OH is likely to be useful, particularly in patients on psychotropics.

0022
Using the Finometer® to examine gender differences in hemodynamic responses to orthostasis in older people

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In the young and middle-ages, women have higher orthostatic intolerance (OI) than men, and differences in orthostatic hemodynamics have been found that support it. In older people, these gender differences are less studied. Our aim was to contribute evidence in the area using the Finometer®. 224 community-dwelling older subjects (154 women and 70 men, mean age 73) without dementia or risk factors for autonomic neuropathy. Men and women were well matched for baseline characteristics. The Finometer® was used to non-invasively monitor changes in derived hemodynamic parameters during an active stand test. Data were exported with BeatScope® (5-s averages method). Parameters were extracted at different phases of the active stand (baseline, nadir, and recovery at 2 min), and compared between men and women. OI symptoms were also recorded. Men and women did not differ in OI. However, there was a trend towards men dropping to lower nadir points (117 vs. 128 mmHg, $P = 0.001$) and reaching lower recovery points than women (161 vs. 171 mmHg, $P = 0.006$). Consistently, women had greater total peripheral resistance (TPR). Women also had greater aortic impedance and lower arterial compliance ($P < 0.001$), suggesting greater arterial stiffness (AS) in women. Our results are consistent with published evidence on the differential gender trajectories of vascular ageing. However, we expected women to have greater orthostatic blood pressure drops given their presumably higher AS. Perhaps TPR could have indicated 'overcompensation' in women. Urgent validation studies are needed comparing Finometer®-derived parameters with clinical gold standards.

0023
Intolerance to initial orthostasis relates to systolic, but not diastolic, BP changes in older people

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Aims: to explore the association of early symptoms of orthostatic intolerance (OI) with systolic (SBP), diastolic (DBP) and mean arterial (MAP) blood pressure changes in a sample of community-dwelling older people undergoing an active stand test; and to establish whether SBP and DBP changes have different symptomatic correlates during early orthostasis. 224 community-dwelling older subjects (mean age 72.6 years, 68.8% females) were included. All had a Mini-Mental State Examination score ≥ 23 and no risk factors for autonomic neuropathy. Subjects were monitored with the Finometer™ Pro device. Variables reflecting blood pressure changes (absolute low: nadir, magnitude of drop: delta, and speed of recovery) were extracted for SBP, DBP and MAP with the BeatScope™ software (5-s averages method), and correlated with self-reported OI during active stand. Of the 224 subjects, 62 (27.7%) reported OI. SBP changes had strong bivariate associations with OI, but not DBP changes. A logistic regression model suggested that the rate of recovery of SBP during the first 30 seconds following active stand is more important as a determinant of OI than SBP nadir or delta. Subjects who recovered at least 80% of their baseline SBP within 30 s post-stand were very unlikely to report OI. Our study suggests that orthostatic SBP changes may be more important than DBP changes as determinants of early OI during active stand. The crucial importance of the quick recovery of SBP in order to avoid OI is biologically plausible and is discussed in the context of Initial OH pathophysiology.

0024
Use of formal and informal care services among older people in Ireland and France

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Introduction: This paper focuses on current use of care services among older people in Ireland and France and estimates the relationship between formal and informal home care services. It provides analyses of the type of care service user and estimates factors that are associated with unmet need in care.
Methods: The SHARE (Survey of Health, Ageing, and Retirement) survey is used for the analyses. In this paper, we use data from the second wave, collected in 2006–2007 for France and Ireland. The sample is restricted to people living either in France or in Ireland, who are 65 years old and over ($n = 1{,}624$). Statistical and regression analyses are employed. Our model tests for any bias introduced by the reverse relationship between informal and formal care since use of formal care services may be lower for those who receive informal care. We use an Instrumental Variables model to assess use of formal care, and a bivariate probit model with selection to analyse unmet need for care.
Results: The results indicate that people are less likely to receive formal care if they get informal care (coefficient = −0.574, t stat = 1.97). These results suggest care for older people is very dependent on help from family and friends. People in Ireland have a

higher probability of unmet need compared to those in France (coefficient = 0.446, t stat = 4.05) and we find that men (coefficient = 0.200, t stat = 0.108) and those on lower incomes have higher unmet needs (coefficient = 0.254, t stat = 9.01).
Discussion: The demand and supply for formal care is contingent on current and predicted service use. But future projected demographic changes may mean that supply of informal care may be lower, and hence we need to know characteristics of service users and who has unmet need. Internationally, we find current unmet need is higher in Ireland.

0025
Protected mealtime audit—are nursing home residents allowed sufficient time to complete meals without interruption?

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Introduction: Nutrition is an essential component of care in older person's residential settings. The National Quality Standards for Residential Care Settings (Standard 19) suggest that each resident receives a nutritious and varied diet in pleasant surroundings at a time convenient to them.
Method: Prior to the introduction of a Protected Mealtime Policy, an observational audit of the current mealtime situation was carried out ($n = 48$). As well as observing for interruptions during meals, other aspects included were where and when the residents were eating, and resident preparation for mealtime.
Results: The majority of residents 34 (71%) had their meal in the dining room, with 6 (12%). served seated at bedside, 4 (8%) served in bed, and 4 (8%) NG/PEG fed or fasting. All lunches were served before 12.45 h, (breakfast served 9–9.30 h). Mealtime duration varied from 25 to 99 min. Some patients 7 (15%) received main course and dessert simultaneously. Only two of the patients (4.1%) were offered the opportunity to use the toilet before the meal and none were given the opportunity to wash their hands. All patients needing help with meals ($n = 20$) were given assistance with an average of 12 min of assistance given to each patient. Interruptions observed: 19, included provision of medication; disruptions by other residents, staff talking to residents, staff talking to each other, and other residents mobilizing in dining area.
Conclusion: This audit underlines the importance of reorienting dining practice to the Health Information and Quality Authority Standards, with mealtimes as unhurried occasions with limited interruptions, while considering that some residents require assistance and encouragement to complete their meals. Patients should be given the opportunity to use the bathroom and wash their hands before mealtimes. A Protected Mealtime Policy can provide a framework to ensure that residents are able to complete their meals without inappropriate interruptions.

0026
Platelet β-secretase activity in neurodegenerative disease

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Introduction: The amyloid hypothesis proposes that beta-amyloid (Aβ) peptides drive Alzheimer's disease (AD) pathogenesis. β-secretase activity is the rate-limiting step in Aβ production from amyloid precursor protein (APP). We previously identified increased platelet membrane β-secretase activity in AD. This study investigated β-secretase activity in subjects with vascular dementia (VaD) and Lewy Body disease (LBD).
Methods: Subjects with a diagnosis of VaD or LBD were recruited from a regional Memory clinic. Platelets were isolated from blood, fractionated, and 5 μg membrane protein assayed for β-secretase activity in triplicate using an APP wild-type sequence fluorogenic substrate (Calbiochem) in 50 mM sodium acetate, pH 4.5, 37°C. Fluorescence was read continuously over 30 min, initial rates calculated and expressed as pmol MCA/min/μg protein.
Results: 51 subjects with VaD and 51 with LBD were recruited. Comparisons were made with previous results in AD ($n = 183$) and controls ($n = 184$). Median platelet β-secretase activity was 0.146 pmol MCA/min/μg protein in the control group, 0.172 in the AD group, 0.173 in the VaD group and 0.198 in the LBD group ($P < 0.001$, Kruskal Wallis). Comparing individual groups (Mann–Whitney), platelet β-secretase activity was significantly higher in all three neurodegenerative conditions compared to controls (control vs. AD; $P < 0.001$; control vs. VaD, $P = 0.025$; control vs. LBD, $P < 0.001$).
Discussion: These findings indicate that elevated platelet membrane β-secretase activity may be present in subjects with VaD and LBD, as well as in AD. Mixed pathology and overlaps in the molecular pathogenesis of these neurodegenerative disorders, in particular relating to hypoxia and oxidative stress, may help explain these findings. Further work is ongoing to confirm these findings and evaluate the potential role of platelet membrane β-secretase activity in the diagnosis of dementia.

0027
Paramedical staff identification of acute stroke in the field and accuracy for final diagnosis of stroke or TIA

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Introduction: Rapid identification of acute stroke coupled with early emergency transportation to a hospital with an acute stroke service is essential if stroke patients are to be potentially eligible for thrombolytic and other acute therapy. The 2008 ESO Guidelines for management of ischaemic stroke and TIA recommend use of the Face Arm Speech Test (FAST) by paramedical staff in the field to facilitate early diagnosis of acute stroke. The HSE Midlands Ambulance Service was the first and remains the only such service in Ireland to provide training to its paramedical staff in use of the FAST.
Methods: Ambulance Service computer records of 999 calls between March 2007 and October 2008 indicated that 70 FAST positive patients were transported to one of two regional hospitals, one of which has provided a 24/7 stroke thrombolysis service since January 2008. Medical records for 55 of these patients could be located and relevant clinical data abstracted.
Results: 60% of the FAST+ patients were male; mean age 74.3 (range 49–93). 56% ($n = 31$) of the FAST positive patients had a final diagnosis of acute stroke, 86% ischaemic. Another 15% of the FAST positive patients were diagnosed with a transient ischaemic attack (TIA). Final diagnoses for the non-stroke FAST positive patients included seizure, syncope, hypoglycaemia and sepsis.

Discussion: Early experience with use of the Face-Arm-Speech Test by paramedical staff in this Irish cohort showed that 71% of the FAST positive patients had a stroke or TIA. This is similar to findings in Newcastle, UK1 (78%). Our efforts to further develop an integrated acute stroke service are ongoing.

0028
Quantitative insights into the Social and Emotional Loneliness of older people

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Weiss (1973) postulated two types of loneliness: emotional (E) (from lack of close emotional attachment) and social (S) (from lack of engaging social network). Some people experience S, but not E, and viceversa; some experience both, and the majority do not experience any. We tested whether these four 'lonely phenotypes' are a natural occurrence in older people.

533 Irish community-dwelling older people underwent comprehensive geriatric assessment in a clinic setting. K-Means Cluster Analysis was used to identify 4 homogeneous groups based on combinations of S and E (using the six-item De Jong-Gierveld subscales as clustering variables). Binary logistic regression models were computed to characterize each cluster against a series of non-multicollinear variables in various domains: socio-demographic (age, gender, living alone), medical (Charlson comorbidity index) and psychosocial (personality: extraversion/neuroticism, perceived stress, perceived social support, satisfaction with social relationships).

We found four clusters matching the postulated combinations: LowSLowE ($N = 378$), LowSHighE ($N = 92$), HighSLowE ($N = 32$) and HighSHighE ($N = 31$). The LowSLowE was characterized by low neuroticism ($P < 0.001$), high satisfaction with social relationships ($P = 0.002$) and high social support ($P = 0.002$). The LowSHighE was high in neuroticism ($P < 0.001$), more likely to live alone ($P = 0.048$) and lower in objective co-morbidities ($P = 0.048$). The HighSLowE only had evidence of low social support ($P = 0.006$). Finally, the HighSHighE had lower social support ($P = 0.004$), higher perceived stress ($P = 0.006$), more likelihood to be alone ($P = 0.045$) and tended to be less satisfied with social relationships ($P = 0.055$).

The majority of older people did not have loneliness, reported good social support and were satisfied with their social relationships. In the absence of social loneliness, neuroticism was the best predictor of concomitant emotional loneliness. A small group of 'loners' was found with low social support in the absence of emotional loneliness. A small minority with high social and emotional loneliness seemed the most at-risk group.

0029
Estimating the economic cost of disability for older persons in Ireland

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Interventions to promote the wellbeing and social inclusion of people with disabilities include policies to ensure adequate income for people living with disabilities or those caring for a person with a disability. The level and nature of government assistance are ultimately determined by social and political choices, but the design of the relevant policies should benefit from evidence on how disability affects the standard of living of affected individuals and their families. Recent data analysed for Ireland suggests a strong link between disability status and household poverty. Furthermore, there exists substantial evidence to suggest that disability is highly prevalent for persons of older age.

In this context, this paper estimates the economic cost of disability for older persons in Ireland using data from the Survey of Health, Ageing and Retirement in Europe.

We define and estimate models of the private costs borne by households with older persons who have a disability in Ireland when compared to the wider population, both in general and by severity of illness or condition.

Our modelling framework is based on the standard of living approach to estimating the cost of disability. The model quantifies the extra costs of living associated with disability and is estimated by comparing the standard of living of households with and without disabled members at a given income, controlling for other sources of variation. An ordered logit estimation approach is followed to account for the ordinal nature of our dependent variable.

Our findings suggest that the economic cost of disability for older persons in Ireland is large and varies by severity of disability. They suggest that current policies do not go far enough in addressing the extra costs faced by older people with disabilities and also have important implications for measurements of poverty amongst older people in Ireland. Our analysis suggests that disability reduces the standard of living of households for a given level of income, implying that poverty measures based on income will underestimate the problem. We therefore recommend the introduction of disability-adjusted poverty and inequality estimates and equivalence scales for older people.

0030
Private health insurance: voluntary or involuntary?

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Introduction: 2.2 Million Irish people have private health insurance. We decided to investigate why people aged 70 years and over subscribe to private health insurance.

Methods: The study was set in a Geriatric Outpatients of a public hospital. All patients attending over a 3 week period were recruited. We designed a questionnaire composed of 9 questions. It asked details on gender, residential status, whether patients had private insurance or not. It also invited respondents to explain why they felt private health cover was necessary for them. The questionnaire was self administered. In instances where patients were unable themselves to complete the questionnaire it was completed by a spouse or other family member where possible.

Results: 96 questionnaires were completed. 65% of respondents were female and 35% were male. Most of the respondents lived either alone (40/96) or with a spouse 32/96. The remainder lived with their children (14/96), in sheltered housing (6/96) or a nursing home (4/96). Of 96 respondents 42 subscribed to private health insurance. Of the 54 who did not 10 of them had previously subscribed to private insurance but no longer did. The vast majority of subscribers 81% said they found it an expensive commitment. All 42 patients stated the short waiting times for appointments and investigations as their main reason for having private insurance. Over half of patients surveyed also said they felt the only way on which they could be guaranteed consultant review was by having private insurance.

Discussion: This study reveals what patients see as deficiencies within our public health system. Interestingly none of those surveyed stated directly that they got "better care" by having private insurance but rather it enabled them to access care more swiftly. This illustrates the inequity within our public health system in Ireland.

0031
Quo Vadis Eire? A review of demographic and health policy trends from an international comparative perspective using the OECD Health Data 2008

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Culture, politics, economics and various social constructions affect the perceptions that society has on ageing. Two in particular, the "demographic time bomb" and the "inevitable and unsustainable rise in public expenditure associated with ageing" are pervasive in Ireland. We revisited the evidence for those claims.

We undertook a secondary analysis of OECD Health Data 2008 (http://www.oecd.org/health/healthdata).

In Ireland (1960–2006), the trend in the proportion of population aged $\geq$ 65 was a flat line (minimum 10.6% in 1982, maximum 11.5% in 1993), with no evidence of increase in recent years. In 1960, Ireland ranked as the sixth highest OECD country (out of 30) in the percentage of people aged $\geq$ 65, but in 2006 it had dropped to the 27th place before Mexico, Turkey and Korea. As regards public expenditure in health (% of GDP), Ireland steadily increased from 2.8% in 1960 to 6.8% in 1980, followed by a reduction until 1990 (4.4%). During the 1990 s, expenditure was maintained below 5%, and since 2000 it increased to a maximum of 6.5% in 2005, followed by a new decrease. Many OECD countries did not experience oscillations of such magnitude and overall steadily increased expenditure since 1960. In terms of public expenditure in old age pensions (% of GDP), Ireland ranked 17th in 1980 (4.5%), and in 2003 (latest year available) it had dropped to the 28th (third worst) place, with only 2.9%.

Ireland has not yet been a significant contributor to population ageing in the OECD. In Ireland, no parallel trends were found between the proportion of those aged $\geq$ 65 and the proportion of GDP spent in public healthcare. The latter seemed to be very variable, with evidence of increases as well as decreases. The proportion of GDP spent in old age pensions decreased to one of the lowest levels in the OECD.

0032
'Visuovascular instability'? A possible mechanism of accelerated age-related visual loss

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Cross-sectional associations are emerging between visual acuity and orthostatic blood pressure behaviour in older people (Finucane 2009). Neurocardiovascular instability (e.g. orthostatic hypotension, carotid sinus syndrome and/or vasovagal syncope) is a risk factor for accelerated neurodegeneration, which may eventually manifest as cognitive impairment and/or dementia (Kenny 2002). The same model has been applied to bone tissue and referred to as 'osteovascular instability' (Lyons). We hypothesized that the visual pathways could also be vulnerable to accelerated degeneration in the presence of neurocardiovascular instability.

544 community-dwelling older people (mean age 73.0, SD 7.4) assessed in a comprehensive geriatric assessment clinic. They underwent visual acuity tests (Binocular LogMAR) and active stands with Finometer. SPB drop (ΔSBP) was measured from the maximum SBP reached within 30 seconds before stand to the lowest SBP reached within 2 min after stand. ΔSBP was dichotomised using the median (34.5 mmHg) and subjects were thus classified into 'low' ($N = 274$, mean $\Delta SBP = 22.1$) and 'high' ($N = 270$, mean $\Delta SBP = 51.0$) droppers. Each group was entered in a regression between age and visual acuity, and regression coefficients compared.

In the total sample ($N = 544$), a significant quadratic regression was found between age and visual acuity, with visual acuity deteriorating exponentially especially after the age of 70 ($R^2q = 0.091$, $P < 0.001$). When considering the two subgroups separately, at any given age high droppers had worse visual acuity than low droppers, with differences becoming more pronounced after the age of 80. The differences between groups were small but clinically significant. At the age of 85, low droppers had a predicted acuity of 0.20, whilst that of high droppers was 0.26. The difference was greater at the age of 95, with predicted acuities of 0.30 and 0.40, respectively.

Visuovascular instability is an interesting concept which was not invalidated by our cross-sectional results. Further exploration in longitudinal settings is recommended.

0033
The economic cost of delayed discharges from an off site rehabilitation unit

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There is a continuing difficulty in equitably accessing community services in Ireland. Our aim was to identify the financial cost and reasons for delayed discharges in a cohort of patients from our unit.

A retrospective cross sectional study was performed. Target date of discharge was defined as the date at which the multidisciplinary team (MDT) deemed the patient appropriate for discharge, if all necessary equipment, services and care were in place OR that no further inpatient rehabilitation would benefit the patient's outcome. Patients who did not have an MDT discharge date set were excluded. For each patient the admission date, MDT discharge date and actual discharge date were recorded. Reasons for discharge delay were recorded. The cost of the delay period beyond the MDT discharge date was calculated.

48 admissions were reviewed. 19 of these had a delayed discharge; 10 (53%) were awaiting home adjustments and/or home care, 6 (32%) were awaiting long term care, 2 (10%) suffered from an illness close to discharge date requiring extra inpatient stay and 1 patient was awaiting readmission to a sheltered home. The cost of delayed discharge in 2008 was estimated at €497,714.00.

Delays in home adjustments and/or care was the commonest reason for late discharge. The cost of delays represented 44% of the overall admission costs for the cases reviewed. Redirection of funds to facilitate patient choice may not translate into cost savings but will facilitate earlier appropriate discharge. This issue should be addressed as funding in our health services comes under continued pressure.

0034
Gerontological nursing interventions in a residential intellectual disability setting

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Introduction: Over the last 30 years there has been a considerable increase in the life expectancy of people with intellectual disability. This has resulted in changing patterns of morbidity and mortality and an increasing recognition of the health needs of this client group. The WHO has alluded to psychiatric, but not wider gerontological needs in this population [1]. Although considerable change has taken place within this service with an emphasis on care provision in the community, many remain in residential care settings.
Method: A retrospective audit of referrals received over a ten week period to a gerontological Clinical Nurse Specialist (CNS) was undertaken in a residential setting for adults with Intellectual disability. Total population 141: 64 women (45%), age range: 37–86 years.
Results: Of 29 referrals, 20 were new referrals (69%) and 9 for review (23%) Age range 49–77 years, mean age 65.5 years. Reasons for referrals: (a) assessment for fall and injury prevention post fall 16 (55%), 11 post non-injurious fall, 5 post injurious fall 5 (injuries include fractured neck of femur, fractured clavicle and ankle dislocation), (b) assessment of pressure sore risk and preventative advice 9 (31%), (c) wound management and dressing choice 6 (21%) (including management of Grade 4 pressure ulcers in 2 (6.8%), (d) ear irrigation for wax impaction 2 (6.8%), (e) other 3 (10.3%). All referrals required education for both staff and residents.
Conclusion: This audit highlights the growing need for gerontological nursing interventions, in residential care settings of adults with intellectual disability in a younger age group. An emphasis on health promotion and preventative interventions in relation to falls including early bone health assessment, treatment of osteoporosis and early risk assessment for pressure sore risk may reduce injury in this client group.
References: (1) WHO (2001) J Appl Res Intell Disabil 14:256–275.

0035
Pension policy and retirement in Ireland

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Introduction: Across all developed countries, two stylised facts are observed: first, the share of the elderly has been increasing; second, the labour force participation of older workers has been decreasing. This will impose enormous financial pressure on public pension schemes which are based on intergenerational redistribution. It has been shown for many OECD countries that public pension systems often provide financial incentives to retire as soon as possible. The purpose of this study is to examine how the financial incentives embedded in the Irish public pension system affect individual retirement behaviour.
Methods: We adopt the simulation framework portrayed in Gruber and Wise (1999). Therefore, we simulate the incentive measures of social security wealth, its accrual, and the implicit tax rate on work at possible ages of retirement. These measures indicate the age at which a person has an incentive or a disincentive to retire.
Results: We find that financial incentives in the Irish public pension plan do not provide incentives to delay retirement. From age 55 to age 67, there is a disincentive to remain in the labour force.
Policy implications: The current pension system will need reform in order to achieve an increase in labour force participation of older workers. There is minimal opportunity for gradual retirement. Furthermore, the current incentive structure may to a certain extent, explain the misreporting of health status in order to collect a disability pension as a form of early retirement.

0036
Developing life story books with family carers

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Background: Life story book (LSB) is a term given to biographical approaches in health and social care setting that gives people time to tell their story and talk about their life experiences. A life story book involves collecting and recording aspects of a person's life both past and present and consists of photographs and materials relating to the person's life.
Aim of the study: To facilitate the development of life story books with family carers and illuminate and describe the value of life story books.
Methodology: A convenience sample of eight family carers attended a series of six workshops where they were actively engaged and supported in developing a life story book. On completion, focus groups were conducted with family carers, and these were tape recorded, transcribed and thematically analyzed.
Key findings: Three key themes emerged from qualitative data and these were: carers perspective on life story books, relationships and life story books and seeing and understanding the person. The life story book captured the uniqueness of each person's story promoted awareness of the person identity, personality, values and relationships.
Conclusion: Creating life story books was an innovative therapeutic activity for family carers. It gave carers the opportunity to bring to life the person's life story and allowed connectivity with the person's past and present life. Creating life story books is an important but overlooked activity.

0037
Technology rejection, perception and implications for tele-care technology amongst older Irish adults: a mixed method approach

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To effectively deliver technology solutions that support independent ageing, it is vital to identify factors that present barriers for technology use amongst older adults. At the Technology Research for Independent Living Centre (TRIL), we surveyed and conducted in-depth interviews

with older adults who were participants involved in a research program at the Technology for Independent Living Centre, Trinity College Dublin about their willingness to use technologies such as computers and the internet. Our aim was to identify predictors that discriminate between a positive and a negative answer to that question, and to explore the underlying reasons for negative responses.

In this non-random sample of Irish community-dwelling older people, the strongest predictors of willingness to use technologies were previous use of technologies and carrying out voluntary work. A discouraging finding for the introduction of Tele-care to older adults that suggests technology use is most likely amongst older adults who have technology experiences. However, follow-up interviews with a subset of the participants, added depth and detail to those findings as to the precise reasons for technology rejection. Two concerns emerged amongst the group most likely to reject technology, which may help understanding of technology rejection. Older adults feared that they would appear incompetent to others if they could not master technology use. They also complained of the complexity of the technology "Interface," which we postulate may be related to perceptual changes associated with ageing. Successful adoption of Tele-care technology amongst older adults will need to address these two potential barriers through the adoption of technology design principles developed specifically for older adults. We will outline some of these principles and provide an example or their implementation.

0038
An audit of the acute stroke service in Portiuncula hospital

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Introduction: The National Audit of Stroke provided information about Portiuncula Hospital Stroke care. We compare findings from national study to recent data. We examine how this correlate with the INASC and Sentinel Stroke Guidelines 2006.
Methods: Patient admitted to Acute Stroke Unit were recorded from June 2006 to May 2009 on an excel database.
Results: 211 patients admitted to ASU. The mean age was 75 years (SD 12.5 years). The male/female patients ratio was 1:1.02 LOS was 15 days (SD 21 days). 27 day (PHB 2005).

Treated on ASU: (HIPE): 65 versus 26% (PHB 2005) 2% INASC and 62% (Sentinel 2006).

CT Done within 24 h: 29 versus 19% (PHB 2005), 40% (INASC 2006) and 42% (Sentinel 2006).

Outcome of CT SCAN: 77.25% infarction, 5% Haemorrhage 3.3% Infarct and Haemorrhage. 2.3% Intracerebral Tumour .1 vertebral artery dissection. 16 normal CT. 6 no CT 50% stay on ASU: 60% Vs 26% (PHB 2005), 1% INACS and 54% (sentinel 2006).

Screened for Swallow Therapist: 90 versus 51% (PHB 2005), 26% (INASC 2006) and 66% (Sentinel 2006).

Aspirin within 48 h 77 versus 30% (PHB 2005), 45% (INASC2006) and 71% (Sentinel 2006).

Physiotherapy assessment within 72 h: 97 vs. 40% (PHB 2005).

Occupational Therapy assessment within 7 days of admission: 72 versus 22% (INASC 2006) and 68% (Sentinel 2006).
Rehabilitation goals: All patients in the ASU are now discussed weekly MDT. 32% (PHB 2005), INASC 2006) and 76% (Sentinel 2006).
Discharge destination: 63% were discharged home. 14.7% discharged to LTC /NH care. 5.2% specialist facilities. 36% NH (PHB 2005).
Mortality: Current inpatient mortality 14.7%. 21% (PHB 2005), 15% (INASC).
Conclusions: More patients are now being admitted to the acute stroke unit in Portiuncula Hospital. Correspondingly this has resulted in improved discharge outcomes, reduced LOS, and reduced mortality rates.

0039
Volume—a weighty issue in swallowing?

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It is well documented in dysphagia literature that volume affects the timing and physiology of the normal and disordered swallow (Bisch et al. 1994; Kahrilas et al. 1993; Tasko et al. 2002). Reducing the volume of free fluids taken per bolus can negate the necessity for thickened fluids to avoid aspiration (Clave et al. 2006). Compliance with thickened fluids continues to be a complicating factor in the management of dysphagia. The effect of volume is assessed as standard at bedside however transference to everyday management is a frequent challenge. One method of overcoming this is the introduction of specific 5 and 10 ml volume control beakers which may improve swallow safety, reduce recurrence of aspiration pneumonia, increase compliance and negate the need for thickened fluids.

To investigate the effectiveness of decisions for volume control over thickened fluids we retrospectively reviewed recommendations for 17 patients referred with dysphagia since January 2009.

47% attended Videofluoroscopy and were asked to drink 5 ml, 10 ml and "a sip" of free fluids. Depending on the outcome, each patient was provided with a 5 or 10 ml volume control beaker for everyday use.

53% (not requiring videofluoroscopy) were assessed at bedside and provided with a volume control beaker.

Patients were monitored for recurrence of aspiration pneumonia, compliance with beaker and necessity for thickened fluids.

75% of the sample who received volume control beakers maintained a clear chest status. 25% had a recurrence of Respiratory Tract Infection.

82% ($n = 14$) complied with the volume control beaker, of these 28% ($n = 4$) needed encouragement to maintain consistent use.

17% ($n = 3$) were non compliant with the volume control beaker; two participants preferred thickened fluids; severity of dementia limited compliance in one participant.

This quick retrospective review into management decisions reveals that volume control measures over modified consistency fluids have considerable influence over patient compliance, satisfaction and can result in a positive clinical outcome for patients at risk of recurrent aspiration pneumonias.

0040
Awareness in dementia: a psychosocial investigation

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This study explored the lived experience of early-stage dementia. It examined people's awareness and insight into their illness.

A qualitative research design taking a person-centred and interpretive phenomenological analytical approach was used ($N = 17$). Two in-depth interviews were carried out with 17 people who had dementia. In 13 cases, care-partners participated in a one-off in-depth interview.

The study's findings show that people living with dementia often implement management strategies such as covering-up or motivated denial to help them cope with symptoms. Respondents were not always aware of their diagnosis. However, nearly all were able to describe the effects of dementia in great detail. Many were also aware of the impact their disability had on other people. Respondents were aware of significant changes to their lives such as changes in their relationships, in their social lives, their emotional responses, their confidence and/or their ability to do things.

People living with dementia can be dehumanised when assumptions are made that they automatically have no insight or capacity. This in turn can lead to poor standards of care and the exclusion of the person from discussions about their future. Knowledge of the person's level of awareness can inform us of the person's ability to manage the illness. Therefore, to fully investigate how people living with dementia cope and how they can be (psychologically) motivated to deny the presence of a disability demands greater time resources and flexible approaches.

0041
Effect of neuroleptic medication use on stroke mortality, recurrence and functional status-the North Dublin population stroke study (NDPSS)

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Background: Given concerns that neuroleptic medications may increase risk of stroke and mortality, especially in patients with dementia, we examined the association between neuroleptic use and stroke outcomes.

Methods: Our North Dublin City prospective cohort study identified all strokes over 1-year. neuroleptic use was recorded pre-stroke, post-stroke (≤72 h) and at discharge. Fatality, stroke recurrence and functional status were assessed at 7, 28, 90 days and 1-year.

Results: Of 545 stroke patients (84.4% ischaemic), 21 (3.9%) were on a neuroleptic at time of stroke, 37 (7.2%) post-stroke and 39 (7.9%) at discharge, most frequently quetiapine (43.2% post-stroke 51.3% at discharge). Commonest indications for neuroleptic were dementia (38–49%) and schizophrenia (10–19%).

Patients on neuroleptics pre-/post-stroke were less likely to have had dyslipidemia ($P < 0.05$) but other baseline factors were comparable to patients not on neuroleptics. Stroke type and severity were similar in pre-stroke neuroleptic users and non-users.

On univariate analysis, any neuroleptic use was associated with 1-year fatality ($P < 0.05$ for pre-stroke/discharge neuroleptic; $P = 0.06$ for post-stroke). Other associations with death included age, AF, non-smoking, haemorrhagic stroke, pre-stroke mRS, NIHSS (all $P < 0.05$). On multivariable logistic regression, neuroleptic use was not independently associated with 1-year mortality.

There was no difference in stroke recurrence between neuroleptic users and non-users.

There was a univariate association between pre-stroke neuroleptic use and poor functional outcome (mRS ≥ 3) at 7- and 28-days ($P < 0.05$), and between post-stroke/ discharge neuroleptic use and outcome at all time-points ($P \leq 0.02$). Other associations with poorer outcome included age, gender, qualifying event, AF, non-smoking, haemorrhagic stroke, pre-stroke mRS, NIHSS (all $P < 0.05$). Post-stroke and discharge neuroleptic use remained independent predictors of poor functional outcome ($P < 0.05$) after controlling for these.

Conclusion: In our study, neuroleptic use was significantly associated with poorer functional outcome. Poorer prognosis with underlying conditions e.g dementia or schizophrenia may partly account for this.

0042
Positive effects of rolling audit on antibiotic prescription in a geriatric unit

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Antibiotic prescription is often inconsistent within hospitals. Many hospitals produce antibiotic guidelines. They aim to streamline prescription and reduce occurrence of antibiotic associated infections. Antibiotic guidelines were updated in our hospital in 2008. Microbiology and ward staff organised an audit of antibiotic prescription within the four ward geriatric unit. The aims of the study were to assess compliance with guidelines and if the audit process would lead to improved compliance.

An initial audit was undertaken in December 2008. The audit was repeated at one and three months. Each audit was carried out on a single day. Ward medical staff collected the data. A validation exercise was undertaken by a microbiologist to ensure quality of the data. Patients from each of the wards were chosen randomly. If a patient was not on antibiotics another patient was randomly chosen. An audit form was completed for each antibiotic prescribed. Each prescription was deemed as necessary, unnecessary, inappropriate or equivocal. Twenty-five audit forms were supplied for each audit. Feedback to medical staff was provided after each audit cycle.

A total of 22, 25 and 24 antibiotic prescriptions were audited in December, January and March respectively. In December and March these numbers represented the total antibiotics prescribed within the unit.

Antibiotic prescription deemed appropriate improved from 68 to 84% and then 87.5% over the audit process. Antibiotics deemed inappropriate improved from 23% initially to 16% and then 0%.

This study shows that compliance with antibiotic guidelines can be improved by implementing a rolling audit. This could in turn reduce the rate of antibiotic associated infections. This benefit may be lost, however, with the regular changeover of junior medical staff. Measures to maintain the noted improvements will be discussed in the full presentation.

0043
Outcomes of elderly patients at an on-site rehabilitation facility in a tertiary teaching hospital

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Introduction: Elderly in-patient rehabilitation (RH) is available to patients at on-site (ON) and off-site (OFF) locations in Ireland.

Selection of such patients from acute admission remains controversial. Given the scarcity of acute beds, rehabilitation outcomes of elderly patients in Ireland is important. There is currently no known outcome data of elderly patients admitted to ON RH units in Ireland.
Method: A retrospective analysis of medical notes of 140/155 patients admitted over 12 months to an elderly RH facility took place. Basic demographics, admission and discharge dates, pre and post RH physical function, co-morbidities, complications, and discharge planning was recorded.
Results: 155 patients were transferred to ON RH over 12 months. 125 (80.6%) had one RH stay during their admission. 24/155 (15.5%) had two RH stays; 5/155 (3%) had three RH stays. 1 (0.6%) had four stays; 59/140 (42%) required intravenous therapy during their stay. 5/140 (4%) had cardiac arrests. 84/140 (60%) required transferring for radiological investigations. 26/140 (18.5%) required retransfer to the acute hospital for acute medical attention. 0/140 (0%) were transferred to the Emergency Department. 96/155 (62%) of patients were discharged home. 33/155 (21%) were transferred to a nursing home. 20/155 (12.6%) died as in-patients. 6/155 (4.2%) were transferred to another hospital.
Discussion: Sufficient time is required for RH of elderly patients after acute admission. Access to an ON RH facility enables a desirable transition from acute illness to recovery whilst having backup of acute services if needed. Almost 2/3 of patients admitted were discharged home successfully. Almost 1 in 5 patients required readmission to the acute hospital for in patient therapy; however, no patients required readmission to the emergency department. ON RH is an effective model for enabling elderly patients recover from acute medical illness. Access to acute medical facilities without returning to the Emergency Department is imperative.

0044
Medical complications of elderly patients at an on-site rehabilitation facility in a tertiary teaching hospital

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Introduction: Elderly in-patient rehabilitation (RH) is available to patients at on-site (ON) and off-site (OFF) locations in Ireland. There is currently no data available with regard to medical complications acquired after initial acute treatment, at ON RH facilities in Ireland.
Method: A retrospective analysis of medical notes of 140/155 patients admitted over 12 months to an elderly RH facility took place. Basic demographics, admission and discharge dates, pre and post RH physical function, co-morbidities, complications, and discharge planning was recorded. The Cumulative Illness Rating Score (CIRS) is a 5 point likert-type scale (score 0–4 over 13 categories) that estimates the illness burden and diversity of pathology that patients present with. CIRS was used to record organ based complications during inpatient stay.
Results: The mean age of patients admitted was 79.3 years (SD 8.3, range 58–98 years). 42% (65/155) of patients were male. The means CIRS score for in patient rehabilitation was 5.8 (SD 4.7, range 0–52). Significantly, over 90% of all patients admitted required a medical assessment during their in-patient stay. 13% of patients required a medical assessment within 48 h of admission. The mean total of discrete episodes requiring medical attention during in patient stay was 10.4 per patient (4.4 episodes per day). Mean length of stay was 83 days (IQR 150.5, range 0–460 days).
Discussion: Medical complications at elderly ON RH facilities are common and necessitate the presence of 24 h medical cover to assess patients should these complications arise.

0045
Correlating low bone mineral density (BMD) with tartrate resistant acid phosphatase (TRACP) in patients with stage 4–5 renal failure

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Introduction: Biochemical bone markers (BBM) are used in conjunction with standard radiological investigations to examine Osteoporosis at tertiary referral centres in Ireland. Several studies have published their predictive value in establishing patients at high risk of fracture, when bone densitometry (BD) results are equivocal. Several factors can misleadingly render biochemical bone marker results inaccurate, which clinicians can interpret incorrectly. Chronic renal failure (CRF) is one such factor.
Method: 60 patients had standardised BBM taken with standard BD; T Scores were reported <-2.5. 40 patients had creatinine clearances (CC) > 30 ml/min; 20 had CC < 30 ml/min. C telopeptide (CTx) and TRACP (bone resorptive markers, BRM) and P1NP and osteocalcin (OC) (bone formation markers) were taken with parathyroid hormone (PTH), vitamin D and standard haematological and biochemical investigations. All patients had fasting BBM taken. All patients had BMD measured using dual x-ray absorbiometry (DEXA). The above results were correlated using http://www.r-project.com using Spearman's correlation ratio given the non-evenly distributed data.
Results: TRACP was the only BRM that correlated with BMD at the right hip in patients with CC < 30 ml/min ($P < 0.018$, $r = -0.578$).
Discussion: TRACP may be a more desirable BRM to measure bone turnover in patients with cc < 30 ml/min. It is more reliable than CTx as it is independently metabolised by the liver and not the kidney unlike CTx. It may serve as a useful predictor of fractures at the hip in patients with end stage renal failure.

0046
Complications and outcome post stroke in patients over 80 years

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Age independently influences stroke outcome and well organised management of elderly stroke patients has been associated with improvement in both clinical outcome and resources used. We sought to evaluate the number of patients >80 years presenting to our hospital with acute stroke and compare their complications and outcome to the younger patient group.

Prospectively recorded baseline characteristics on 140 consecutive acute stroke admissions to our hospital over a 6 month period were

examined. Variables included: pre-stroke disability, barthel index (BI), inpatient mortality, length of stay and discharge destination. Complications were recorded in the first week using pre-defined definitions of complications.

Of the 140 patients with acute stroke 50% were male and the mean age (SD) was 78.4 ± 11.1 years. 81 (58%) were >80 years and 49 (60%) of those were female. TACI and PICH were significantly more frequent in the >80, 30 (37%) and 12 (14.8%) compared to 14 (23.7%) and 6 (10%) in patients <80 years. Medical complications in the first week were recorded in 119 (85%) of patients and were more significant in those with more severe strokes and those >80 years ($P < 0.0001$).Inpatient mortality was 28% in the >80s compared to 16.9% in <80 years. Only 24 (29.6%) patients over 80 went home compared to 27 (46%) of the younger patients. Older patients were more likely to be discharged to ENC 23 (28%) versus 7 (11.8%).

Stroke in the >80s accounts for 58% of stroke admissions to our hospital. Our study has confirmed that post stroke complications are more common in the 1st week in patients >80 years. Many of these complications are thought to be avoidable with good quality nursing care and rehabilitation. All stroke patients, irrespective of age should have full access to stroke unit care. Further studies required to look at cognitive impairment and complications that develop later on in stroke.

0047
End of life care in stroke: timing of death

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Despite advances in stroke care, mortality remains substantial, probably reflecting an increasingly very elderly population. One of the major challenges in end of life care for stroke patients is defining when a gravely ill patient (who may benefit from rehabilitation, medication and tube feeding) becomes a dying patient, where palliative measures including the Liverpool Care Pathway maybe more appropriate. Such decisions are complicated by uncertainty over patients wishes and difficulty in reconciling family concerns which become more complex in very disabled patients who survive the very early stages of stroke.

With a view to planning end of life services and having more informed discussions with family members, we examined our experience of timing of death in patients hospitalised with acute stroke in our hospital.

In prospectively gathered data, 57 patients died following acute stroke in 2008. 13 (23%) were ≥90 years, 28 (49%) ≥80–89, 13 (23%) ≥70–79 years and 3 (5%) <70 years.

31 (54%) died within 14 days following their stroke. Although one patient survived over 1 year, 49 (86%) of deaths occurred within 8 weeks. Review of case notes in 20/26 patients surviving over 2/52 revealed that 12/20 (60%) were designated as dying in their last 3 days. Palliative care services were consulted in 7/20 (33%) of cases.

Most patients who die following stroke in our hospital are very elderly. Most deaths (54%) occur within 2/52 but the remainder who survive the early stages are very disabled with multiple complications and may present complex end of life care issues. Most such patients were designated as dying only in the last 3 days and palliative care services were consulted in a minority of cases. The efficacy of symptom control and end of life care in our patients requires further evaluation.

0048
Does PEG insertion advantage frail elderly patients with poor nutritional intake?

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Reduced oral intake is common in frail elderly patients. Percutaneous Endoscopic Gastrostomy (PEG) is one method of nutritional support in such patients. There is no consistent evidence that PEG feeding advantages frail elderly patients [1, 2]. The aim of our study was to assess the clinical outcome of patients in whom PEG had been considered as a treatment option.

We conducted a retrospective chart review of 24 hospitalised nursing home residents from July 2008 to April 2009, in whom the decision to place a PEG tube has been discussed. We have previously described this population [3].

There were 19 females and mean age was 80 years. The primary diagnoses were Dementia (10), Stroke (10), Parkinson's disease (2), Motor Neuron Disease (1) and Multiple Sclerosis (1). These Patients had multiple co morbidities including Diabetes (3), Hypertension (12), Atrial fibrillation (8), Ischaemic heart disease (4) and Osteoporosis (14). The indication for PEG placement was reduced oral intake in 50% and poor swallow in 50%. A PEG tube was placed in 14/24 patients and 5 (3.5%) died within 3 months post procedure. These patients have an average of 2.5 PEG related readmissions. The remaining 10 patients did not receive a PEG in agreement with their families due to advanced illness and 7/10 died within 3 months. In total, 12 (50%) of the 24 patients had died at 3 months.

This study shows that the overall outcome is poor in patients with significant problems with oral intake. This should inform decisions about selecting patients for PEG procedure. Careful selection of patients is essential as the very frail are unlikely to survive more than 90 days.

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0049
To determine the impact of Parkinson's disease on occupational performance from the perspective of the individual living with the condition

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Parkinson's disease (PD) is considered a chronic neurological disorder which invariably causes significant difficulties in self-care, work, and leisure activities (Turner et al. 2002). In order to understand how PD impacts on everyday activities, the perspective of the individual living with the condition is required (Gaudet 2002). A study, therefore, was carried out to acquire subjective accounts of the impact of

PD on self-care, work and leisure activities. It also sought to determine the importance of these activities to participants and levels of satisfaction with their performance.

A qualitative research design was adopted. Stratified, purposive sampling was used to recruit ten study participants of varying ages and at different stages of PD. The 39-item Parkinson's Disease Questionnaire (PDQ-39) was completed, followed by a semi-structured interview.

The majority of participants identified a range of difficulties in self-care, work and leisure activities. Some difficulties were related to physical symptoms of tremor, reduced strength and balance, and fatigue. Participants also identified the impact of emotional issues on daily activities, such as negative reactions of others which resulted in withdrawal from leisure activities. Factors contributing to contrasting results included different stages of disease progression, ages of onset, environmental supports, and perceived effectiveness of medical and self management techniques.

The study has a number of healthcare implications, such as the importance of gathering subjective data to facilitate client-centred interventions. It also indicates the importance of ongoing education, anxiety management techniques, and strategies for maintaining participation in work and social activities. Areas for further research include people's experience of young onset PD and greater understanding of the impact of PD on social activities.

0050
A study of the prevalence of renal impairment and its effect on prescribing practices in a medicine for the older person outpatient population

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Older adults may have significant renal impairment despite normal or near-normal serum creatinine levels. If unrecognised, there is increased risk of avoidable adverse effects from medications that are not properly dose-adjusted. The aim of this study was to determine the prevalence of renal impairment in a Medicine for the Older Person day-ward and to review medications prescribed in this population.

We reviewed consecutive records of 444 persons attending our day-ward over 5 months. Renal function was estimated using an online MDRD calculator using an average of each patient's serum creatinine over 18 months. Patients were subdivided according to their eGFR into each of the five stages of chronic kidney disease (CKD) according to the KDOQI classification. All medications were recorded.

A subgroup of patients ($n = 56$) with significantly impaired renal function (eGFR < 40 ml/min) was identified and their prescriptions were assessed in more detail.

The average patient age was 81.5 years (range 63 to 99 years): 65.3% female, 34.7% male. 42.1% of patients had at least Stage III CKD or worse, 13.2% had markedly impaired renal function (eGFR of < 40 ml/min) and 3.8% had severe renal impairment (Stage IV CKD) or worse.

The average number of medications per patient was 7.6 (range 0–23). The commonest were statins (48.6%), ACE inhibitors/ARBS (35.4%), β-blockers (30.4%), PPI's (50.7%), bisphosphonates/strontium (25.2%) and opioids (11.8%). NSAIDs were rarely prescribed (3.3%).

In patients with significant renal impairment, cardiovascular protective drugs were used more frequently (statins 54.6 vs. 48.6%, ACE/ARBs 40 vs. 35.4%, β-blockers 45.4 vs. 30.4%). Bisphosphonates and opioids were less likely to be prescribed (bisphosphonates: 14.6 vs. 25.2%, $P = 0.08$; opioids 7.2 vs. 11.8%, $P = 0.1$). Only 1 patient with an eGFR < 30 ml/min was on a bisphosphonate. In 18 patients, medications needing cautious prescribing due to renal impairment were identified.

Conclusions: Renal impairment is common in older outpatients. Despite increased awareness of eGFR when prescribing, issues still arose in relation to some commonly used medications. We recommend a high level of vigilance when prescribing renally excreted drugs in this population.

0051
Voting rights and persons in long term care

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Older Persons in Long Term care suffer from a lack of attention to their Voting Rights. There is a gap in legislation regarding their participation in the voting process. No legislation exists to solely promote the voting rights of older persons; neither is consideration given to older persons' limitations in the voting process. Without legislation the possibilities of abuse of older persons and the voting system exist. A test of capacity to vote is not part of current capacity tests.

Social Workers for Older Persons recognise the lack of attention to the voting needs of older persons in residential care. Concerns about this issue have been reported by social workers around the country. Concerns are fourfold; political candidates frequently visit long stay units and nursing homes with unacceptable attitudes of right of entry and contact with residents; older residents' political wishes are dependant upon the long stay units and employees thereof; some residents may have capacity to vote although lack capacity in other areas and this issue is not assessed; frequently residents are considered, under no common agreed process, as unable to vote.

A social worker acting as an advocate in a nursing home for 120 residents focused on the voting and political needs of residents. Almost certainly due to his efforts he saw the voting rate in his Nursing Home increase from 33 to 67% during the Lisbon Treaty Referendum. Older Persons' basic rights and the voting system are routinely ignored by lack of attention to voting rights.

Without legislation there is no voting security for older persons. Attention has focused on eligibility to vote without similar attention paid to practical voting needs and assessment of and deterioration of capacity to vote. Nursing Homes and long stay units require legislation that will secure the voting needs of older persons.

0052
An audit of the use of radiologically inserted gastrostomies

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Introduction: Radiologically inserted gastrostomy (RIG) offers an alternative for the provision of long term enteral nutrition in conditions where percutaneous endoscopic gastrostomy (PEG) insertion is impossible or contraindicated. The aim of this audit was to determine

the incidence of RIG placement and to review indications for use, post-procedure practices and frequency of complications.
Methods: A retrospective review of medical charts and dietetic records on patients referred for RIG placement was conducted. Over a nineteen month period, twelve episodes of RIG in nine patients were recorded. Primary radiological placement accounted for eight cases. A further four cases presented for repeat placement due to either dislodgement or irreversible blockage of the original RIG.
Results: The mean age of patients undergoing the procedure was 71 years (SD ±14). The main indications for RIG placement were poor respiratory function ($n = 4$) and failed endoscopic insertion ($n = 4$). Three out of four patients with compromised respiratory function had motor neuron disease and a forced vital capacity <40% predicted. In cases of failed PEG insertion, the procedure was abandoned in two of these due to physiological abnormalities. No formal guidelines for the management of RIG existed at the time of audit. Stoma site infection (50%) and tube blockage (25%) were commonly recorded post operative complications. Tube dislodgement occurred in two patients over the course of their inpatient stay.
Discussion: From this audit, patients who undergo RIG placement have a high risk of developing complications. The department of nutrition and dietetics in conjunction with the consultant radiologist have compiled comprehensive guidelines for the management of RIG in order to increase nursing and medical staff knowledge and to reduce complication rates, which is vital.

0053
Active stand tests in a dedicated falls service

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Orthostatic hypotension (OH) is most prevalent in, although not limited to, older populations and patients may suffer with symptoms such as dizziness/light-headedness on changing position, syncope, unexplained falls etc. When OH is diagnosed and treated accordingly the patient and establishment should benefit with an overall reduction of in patient stays and a decline in the use of unnecessary diagnostic resources within the organisation.

Prospective audit of (a) Active Stand Tests using the Finometer device performed in Clinical Nurse Specialist led fall-clinics from January to December 2008, (b) education sessions given to patients diagnosed with OH, (c) 24 h Ambulatory Blood Pressure monitor application resulting from supine hypertension noted during the Active Stand Test.

The Active Stand Test could not be performed on 11 (5%) patients, due to poor circulation to hand, tremor, pain, or patient unable to lie in required position. Of 210 tests carried out, 115 (55%) were OPD referrals and 95 (42%) in-patient referrals. OH was detected in 172 cases, and led to education sessions on OH in 172 (82%) patients, focusing on counter manoeuvres. Each education session takes approximately 40 min per patient. Ambulatory Blood Pressure monitors were applied to 50 (24%) as a result of Active Stand Tests. Orthostatic hypotension (OH) is associated with troublesome symptoms and increased mortality. It is treatable and deserving of accurate diagnosis (Cooke et al. 2009). This study outlines the benefit of a high prevalence in patients with falls referred for Active Stand, and the utility of Nurse led clinics to confirm diagnosis of OH and educate patients accordingly. It also points to the need for further assessment of supine hypertension in almost a third of those referred. This facet of a dedicated Falls Service supports diagnoses and treatment options for patients suffering with OH in a timely and effective manner.

0054
Thigh-length graduated compression stockings (GCS) do not reduce the risk DVT in acute stroke patients. CLOTS trial 1

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Introduction: DVT and pulmonary embolism commonly cause death after stroke. Heparin reduces the risk of DVT but increases the risk of serious haemorrhage which offsets the benefits. GCS reduce the risk of post surgical DVT but have not been adequately tested in stroke. Most National Stroke Guidelines recommend their use.
Methods: The CLOTS trial 1 enrolled stroke patients from day of admission (day 0) to day 3. Randomisation was centralised and accessed via telephone or online. Patients had a screening compression Doppler ultrasound (CDU) of both legs performed by a technician blinded to treatment allocation at about 7–10 days and where practical 25–30 days after enrolment. The primary outcome was: a symptomatic or asymptomatic DVT in the popliteal or femoral veins detected on a CDU.
Results: From 2001 to 2008, 64 centres enrolled 2,518 patients, median age 76 years (range 22–100) and 50% women. The proximal DVT occurred in 126 (10.0%) patients allocated to thigh-length GCS and in 133 (10.5%) allocated to avoid GCS, a non-significant absolute reduction in risk of 0.5% (95% CI 1.9–2.9%). Skin breaks, ulcers, blisters, and skin necrosis were significantly more common in patients allocated to GCS than in those allocated to avoid their use [64 (5%) vs. 16 (1%)]).
Discussion: These data do not support to the use of full length GCS in patients admitted to hospital with an acute stroke. They apply to about two thirds of all hospital admission. National guidelines for stroke might need to be revised on the basis of these results. Abandoning their use will free up about 30,000 h of nursing time per year in Ireland. CLOTS trial 3 is assessing intermittent pneumatic compression in stroke patients.

0055
Blood pressure and heart rate variability during exercise: the ageing effect

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The ageing process is associated with changes in cardiovascular system behaviour (Mangoni 2003). There is little evidence exploring the haemodynamic changes that occur in older people during dynamic exercise. Our study aim was to study dynamic blood pressure and heart rate responses in young versus old subjects.

A convenience sample of 68 participants over the age of 60 years who completed a comprehensive geriatric assessment was recruited. Participants had portable beat to beat phasic blood pressure measurement using Portapres®. Three phases were captured: a pre exercise stand lasting 3 min, a 6 min exercise phase (walking down a corridor) and a post exercise stand lasting 3 min. Haemodynamic parameters of blood pressure, both systolic and diastolic, and heart rate were derived. Variability was calculated as standard deviation around the mean. Repeated meaures ANOVA was used to test for differences between the three groups.

The mean age of the older group ($n = 68$), was 69.9 years and the mean age for the 20 young volunteers was 31.2 years. Younger people have much greater heart rate variability (HRV) during all phases. In the pre exercise phase HRV was 6.75 (young) versus 3.25 (old) ($P < 0.001$). In the exercise phase HRV was 6.02 (young) versus 4.52 (old) ($P < 0.007$). In the post exercise phase HRV was 7.82 (young) versus 4.49 (old). The older group had a higher baseline systolic BP during all phases. There was a trend toward greater SBP variability during exercise in the older group ($P < 0.141$).

This study contributes to the understanding of the pathophysiological changes that occur during exercise in older people compared with younger controls. Younger people have a very different cardiovascular profile compared with the older group. Its importance lies in its potential for further exploration of the effect of ageing on the cardiovascular control mechanisms in frail and deconditioned subjects.

0056
Evaluation of Cognitive Skills Improvements using technological and text-based skills training tools

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The aim of this study is to investigate cognitive skills improvements experienced by older adults using technology and text based aids. Considerable research has been conducted into the general areas of both gerontology and cognitive skills training, with particular focus on how increased intellectual activity has been linked with a reduced risk of Alzheimer's disease. Furthermore research has indicated that staying mentally active can help promote independence as well as the acquiring of new skills and the reacquiring of old ones.

However, little has been done to date comparing the efficiency and effectiveness of technologically based interventions and more traditional, text-based interventions which are generally available, nor has it been determined which method older people derive most satisfaction from.

This study employs a Solomon four-group experimental design in order to determine which intervention demonstrates the greatest improvement in older adults' cognitive abilities. The technological intervention consists of the temporary provision of a Nintendo DS Lite Games Console and a copy of the game "Dr. Kawashima's Brain Training: How Old is Your Brain?" to each individual within this condition. The text-based intervention consists of a suitable alternative developed by the same neuroscientist—Kawashima's (2007) "Train Your Brain: 60 days to a Better Brain".

Interim results are presented and implications of the study are discussed.

0057
Investigating bone quality in patients with hip fracture using newer bioengineering techniques

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Hip fracture is the most serious consequence of falls and osteoporosis. However, not all these patients demonstrate osteoporosis on DXA. Other factors for fracture include bone turnover, underlying microarchitecture, and changes in bone composition. Indeed, increased bone turnover can increase the risk of further fracture independent of bone mineral density measurements (BMD). MicroCT and nanoindentation are new techniques used to assess bone quality in patients with a history of fracture. Our aim was to show if these new techniques reflect the effect of bone turnover and microarchitecture on the bone quality.

Hip fracture patients requiring hemiarthroplasty were consented for analysis of their fractured femoral head. Baseline bone markers, PTH and vitamin D levels were taken. MicroCT and nanoindentation (Nanoindenter XP) studies were performed on the samples. This study was approved by the local Ethics Committee.

16 femoral head samples were analysed with microCT. Bone volume significantly correlated with BMD of the opposite hip ($R^2 = 0.551$, $P = 0.04$) and spine ($R^2 = 0.616$, $P = 0.012$). Patients with increased bone turnover had bone samples with reduced trabecular number ($R^2 = 0.560$, $P = 0.053$) and trabecular thickness ($R^2 = 0.703$, $P = 0.02$). Seven samples were used for nanoindentation. Maximum modulus load (a representation of the hardness and elasticity of the bone) correlated with spine BMD ($R^2 = 0.585$, $P = 0.08$) and hip BMD ($R^2 = 0.912$, $P = 0.003$).

Patients with higher bone turnover demonstrated alterations in bone microarchitecture and bone composition not seen on DXA. These alterations appear to have negative effects on the bone quality and may have pre-disposed these patients to their risk of hip fracture.

0058
The impact of Occupational Therapy home assessments and intervention on patient safety

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Occupational Therapy home assessments have become an integral aspect of patient rehabilitation and discharge planning in the acute setting. Although home assessments have become common practice in all areas of Occupational Therapy, a recent literature review found no conclusive evidence to support the effectiveness of Occupational Therapy home assessment and discharge planning (Barras 2005). It is estimated that an average of 9–16% of therapists' time is spent completing home assessments so it is crucial that the understanding of the effectiveness or otherwise of this resource-intensive intervention is improved. The purpose of this study was fourfold: to examine whether Occupational Therapy home assessments and subsequent interventions improved patient safety, to establish the most frequently occurring areas of risk highlighted on home assessments, to determine which interventions are being used most frequently and to ascertain which of these interventions have the greatest influence on patient safety.

The SAFER-HOME (Safety Assessment of Function and the Environment for Rehabilitation-Health Outcome Measurement and Evaluation) was used as an outcome measure on 13 randomly chosen home assessments completed. A lower SAFER-HOME score indicates an increase in patient safety.

The SAFER-HOME scores were reduced in all thirteen assessments completed. The average percentage reduction was 79.7%, ranging from 41 to 100%. Mobility, the category with the highest risk, had the greatest reduction after Occupational Therapy intervention.

Minor Environmental Modifications was the most frequently used intervention and was also the intervention that had the greatest impact on patient safety.

Occupational Therapy home assessments and intervention were shown to improve patient safety at home. Mobility was found to be the highest risk area for patients and minor environmental modifications was the most frequently used and most effective intervention category.

0059
Screening for weight loss in community dwelling older adults

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Introduction: A healthy, nutritional diet is at the core of maintaining independence into old age; however noninvasive, easily administered nutritional screening tools for use by both professionals such as nurses and nonprofessional healthcare workers in the community are few and problematic. This research builds on a previous study in which depression and food intake were the best predictors of unintentional weight loss in community dwelling old–old m adults 80 and above. The purpose of this study was to test whether a cluster of validated scales, one for each of five leading nutritional risk factors, could predict unintentional weight loss in community dwelling older adults.
Method: A convenience sample of 116 adults ≥65 was interviewed for this longitudinal study. Subjects were recruited from a local senior center. Height, weight and measures of five nutritional risk factors were collected six months apart.
Results: The 91 subjects completing T2 were largely white (91%), female (69%), and rated their health as good to excellent. Mean age was 74.4. Sixty seven percent were educated beyond high school. The mean for the Lubben Social Scale was 33 (out of 50) with scores below 20 indicating social isolation. The mean for Instrumental Activities of Daily Living was 7.8 out of 8 indicating a highly independence sample. Mean Geriatric Depression Scale scores were 1.3 (low depression) and Food Security scores indicated little insecurity (mean 0.07). The results of multiple regression were not statistically significant.
Discussion: This sample of healthy older adults had few nutritional risks. Implications for nursing are that screening tools, including this one, may lack the sensitivity and specificity to identify early risk in community dwelling older adults. Therefore screening needs to be conducted regularly to detect early nutritional decline in time for the most effective interventions.

0060
The results of a falls prevention programme in an acute hospital setting

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Falls are common among elderly hospital patients accounting for 40% of all hospital admissions. In our hospital falls represent 33% (1,081) of all patient-related clinical incidents. The consequences for the patients include, loss of confidence, fear of falling, an increased risk of fracture resulting in increased length of stay, with a greater chance of discharge to long-term care.

STRATIFY, a prediction tool for inpatient falls was piloted on the care of the elderly ward from 2003 to 2006, reducing falls significantly. In 2008, due to an increase of falls on the original pilot ward and throughout the hospital, a falls education programme was established, initially on the six wards with the highest number of falls. The overall aim was to reduce the number of patient falls by 20% as recommended by the Joint Commission International (JCI). All reported falls were recorded and analysed through the STARS WEB system.

Over the 3 year duration of the original pilot study falls reduced significantly. However, when education on the STRATIFY and falls discontinued, falls rose. Again, when a falls prevention programme was introduced in 2008 a significant reduction (25%) was achieved. However, as previously, the cessation of education resulted in a return to the previous year's fall rate (despite the continued use of the STRATIFY tool). During the 2008 study falls decreased on the pilot wards while increasing on non-pilot wards. After education ceased the trends re-aligned and falls increased.

The results of the study suggest that there is a need for ongoing staff education in order to achieve a successful falls reduction programme. The study highlights limitations on the use of STRATIFY in isolation as a solution to falls. STRATIFY can, however, provide an emphasis on assessment and provide a focus for the application of the education in clinical practice.

0061
Orthostatic haemodynamic responses and gait velocity in older adults

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Underlying cardiovascular disorders such as orthostatic hypotension (OH) and slower gait speed, are associated with recurrent falls and greater cerebral white matter lesions (Kenny 02, Rosano 06). Our objective was to examine association between systolic blood pressure (SBP) and heart rate (HR) orthostatic response with gait velocity in a group of older adults.

We recruited a convenience sample of 498 participants (261 fallers) who completed comprehensive geriatric assessments, which included gait velocity (Gaitrite), beat-to-beat postural SBP and HR (Finometer) and timed-up-and-go test (TUG). The subjects were categorised according to gait velocity: Group I (<80 cm/s), Group II (80–120 cm/s) and Group III (120+ cm/s). Beat-to-beat Finometer recordings were analysed in the supine (60–30 s before stand), 1st 30 s (0–30 s) and 2nd 30 s (31–60 s) after standing. ΔSBP is defined as supine-nadir SBP. Chi-square, Student *t* test and ANOVA were used.

Group I were older [I: 78 (7) years, II: 72 (6) years, III: 69 (6) years, $P < 0.0001$], had longer TUG (I: 17.0 (6.0)s, II: 9.2 (3.0)s, III: 7.2 (1.2)s, $P < 0.0001$) and had more fallers (chi-square = 49.6, $P < 0.0001$). There was no difference in supine, nadir and ΔSBP in all groups. ANOVA revealed lower SBP of Group I in the 1st 30 s and 2nd 30 s and impaired recovery of SBP following standing when compared with the other groups. HR was also lower in Group I in 1st 30 s than the other groups.

Although there was no difference in the degree of fall in SBP (ΔSBP) during orthostasis, older people with gait velocity <80 cm/s showed impaired recovery of SBP and delayed HR response to orthostasis. Impaired orthostatic response may be the underlying mechanism leading to gait abnormalities due to cerebral white matter lesions. This hypothesis will require further exploration.

0062
Muscle strength and the ability to counteract hypotension by lower body muscle tension: young versus old

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Transient systolic hypotension occurs in both young and older persons during postural change and prolonged standing. Lower body muscle tension (LBMT), manoeuvres use by fighter pilots, has been shown to increase systolic blood pressure (SBP) and abort syncope (Krediet 08). As muscle strength decreases with age, our aim was to determine the association between muscle strength and the ability to perform LBMT in young and old controls.

Setting: clinical research laboratory. Subjects: convenience sample of 30 young and 30 old subjects (median age 28.5 and 67 years, respectively). The subjects were matched in BMI. Exclusions: previous falls, significant cognitive impairment, painful joints which hindered LBMT and strength measurements. Measures: Grip strength, lower limb strength (Microfet 3 dynamometer), beat-to-beat systolic blood pressure (SBP) before and during LBMT using a Finometer. After a period of training, subjects perform LBMT for 30 s twice with electromyography (EMG) biofeedback. Finometer recordings were exported in 2 s bin, the maximum SBP above baseline during LBMT were calculated. Student t test, Mann–Whitney U tests and Pearson Product-Moment correlations were used for tests of significance ($P < 0.05$).

Older subjects had lower muscle strength: grip [76.2 (27.1) lb vs. 94.3 (34.7) lb], gluteus maximus strength [36.3 (11.4) lb vs. 50.4 (16.2) lb], gluteus medius [56.6 (16.1) lb vs. 67.9 (18.3) lb] but had equal extensor femoris strength [55.5 (17.0) lb vs. 62.4 (19.7) lb]. The maximum SBP from baseline during LBMT was similar between old [63.8 (22.6) mmHg] and young subjects [56.1 (18.9) mmHg). There was a small correlation between age ($r = 0.20$), gluteus medius ($r = -0.18$), extensor femoris ($r = -0.18$) and maximum SBP.

Even though older subjects had weaker grip and lower limb strength, they were as efficient as younger subjects in LBMT. Increasing age and weaker gluteus medius correlated with higher maximum SBP. Reasons for these unexpected observations require further research. We conclude that using EMG biofeedback, young and old people can be taught to use LBMT to counteract hypotension.

0063
History of falls and its impact on hypotensive counteractive manoeuvres

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Orthostatic hypotension is recognised as a modifiable risk factor of falls (Davison 05, Tinetti 94). Lower body muscle tension (LBMT), an anti-hypotensive physical manoeuvre, is recommended to reduce hypotension (Krediet 07). Older people who fall have poor limb strength. Our aim was to investigate the association between muscle strength and efficiency of LBMT in older fallers and non-fallers.

Setting: clinical research laboratory. Subjects: convenience sample of 30 fallers and 30 non-fallers. Exclusions: significant cognitive impairment, painful joints which hindered LBMT and strength measurements. Measures: Age, Height, Weight, Timed up and go test(TUG), Grip and lower limb strength (Microfet3 dynamometer), beat-to-beat systolic blood pressure (SBP) before and during LBMT. After a period of training, subjects perform LBMT for 30 s twice with electromyography (EMG) biofeedback. The maximum SBP above baseline during LBMT (ΔSBPmax) was calculated. Student t test, Mann–Whitney U tests, Pearson Product-Moment correlations and Logistic regression were used for tests of significance ($P < 0.05$)

Fallers were older (median age 73 vs. 67 years), shorter [mean (SD) 1.65 (0.08) m vs. 1.71 (0.09) cm], lighter [71.3 (11.5) kg vs. 79.0 (14.7) kg] and had longer TUG (median 9.6 vs. 7.3 s). Fallers also had lower muscle strength: grip (median 50.5 lb vs. 66.5 lb), gluteus maximus [26.6 (12.2) lb vs. 36.3 (11.4) lb] and gluteus medius [43.1 (11.3) vs. 56.6 (16.1) lb]. There were no differences in extensor femoris strength [47.9 (18.2) lb vs. 55.5 (17.0) lb]. The ΔSBPmax was higher in non-fallers [63.8 (22.6) mmHg vs. 41.3 (12.4) mmHg]. There was a correlation between ΔSBPmax and grip ($r = 0.28$), Gluteus maximus ($r = 0.27$), Gluteus medius ($r = 0.15$), TUG ($r = -0.26$), age ($r = -0.24$). The correlation between muscle strength and ΔSBPmax was more pronounced in fallers and Gluteus Maximus strength accounted for 11.2% of ΔSBPmax.

Muscle strength was lower in fallers than non-fallers and correlated with smaller ΔSBPmax especially in fallers. Strength training, as part of falls rehabilitation, may improve efficiency of LBMT in fallers. This hypothesis requires further testing.

0064
Depressed mood: depressed baroreceptor function? Mood and autonomic function

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Autonomic dysfunctions were more prevalent amongst survivors of myocardial infarction who had high depressive symptoms (Drago 07). Children with depressive symptoms were also more likely to have impaired systolic blood pressure (SBP) response to standing (Stress 03). The relationship between depressive symptoms and orthostatic blood pressure and heart rate (HR) remains unexplored in older adults. The aim of this study is to determine if the presence of depressive symptoms (Center for Epidemiologic Studies Depression Scale (CESD-8) or anxiety (Hospital Anxiety Depression Scale) in older persons is associated with baroreceptor dysfunction.

A convenience sample of participants [mean (SD) age 72 (7) years] completed comprehensive geriatric assessments, which included beat-to-beat postural SBP and HR (Finometer) and CESD8 (499 participants) and HADS questionnaires (511 participants). The CESD subjects were dichotomised to Group C3-(less than or equal 3, $n = 407$) and C3+ (>3, $n = 92$) while the HADS subjects to Group H7-(less than or equal 7, $n = 387$) and H7+ (>7, $n = 123$). Beat-to-beat recordings were analysed in the supine (60–30 s before stand), 0–30 and 31–60 s after standing. ΔSBP is defined as supine-nadir SBP. Student t test and repeated measures ANOVA were used.

Age, BMI, Baseline, nadir SBP were similar between C−, C+ and H7−, H7+. ΔSBP were lower in H+ compared with H− but did not reach significance [39 (20) mmHg vs. 35 (18) mmHg, $P = 0.066$]. ANOVA of SBP in the supine, 0–30 and 31–60 s revealed lower values in C3+ and was more pronounced during 31–60 s. SBP in 31–60 s were lower in H7+ compared with H7−. HR response was similar in all groups.

Our study revealed that older adults with higher depressive and anxiety symptoms demonstrated slower recovery of SBP following standing. This impaired orthostatic SBP response may be a manifestation of depressed baroreceptor function. Further research is needed to establish the causality of this observation and if improved mood is associated with improved orthostatic response.

0065
Age-related orthostatic blood pressure response in older adults age 60 and over

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Autonomic dysfunction more common in older people and characterised by abnormal orthostatic blood pressure (BP). Phasic blood pressure devices are used increasingly to measure postural BP (Wieling 07). Our aim is to compare orthostatic phasic BP in older subjects in three age categories.

We recruited a convenience sample of 542 participants [mean (SD) age 73 (7) years] who completed comprehensive geriatric assessments which included beat-to-beat postural Systolic BP (Finometer).The subjects were categorised into: Young Y (60–74 years, $n = 324$), Middle M (75–85 years, $n = 185$) and Old O (85+ years, $n = 33$). Beat-to-beat Finometer recordings were analysed in supine (60–30 s before stand), 0–30 and 31–60 s after standing. ΔSBP is defined as supine-nadir SBP during 1 min. Repeated measure ANOVA was used for comparisons.

Supine, Nadir and ΔSBP were similar [supine: Y: 159 (23) mmHg: M: 160 (24) mmHg: O: 171 (35) mmHg respectively, nadir SBP: Y:123 (25) mmHg; M: 123 (28) mmHg; O: 133 (35) mmHg; ΔSBP: Y: 36 (17) mmHg; M: 37 (19) mmHg; O: 38 (24) mmHg]. Repeated measures ANOVA found no difference within subjects in Groups Y, M or O. Between subjects analysis showed that Group O had higher SBP values in supine, 0–30 and 31–60 s after standing (9.4, 6.1 and 3.5 mmHg, respectively) compared with Group Y. Group M had lower SBP than Group Y in 31–60 s (F-ratio (df) = 8.8 (1,4856), 3.5 (0.7), $P < 0.0001$).

Although there was no difference in supine, the degree of fall in SBP or nadir during orthostasis, SBP recovered to baseline in the youngest group but not in the 74- to 85-year old or the oldest participants during 31–60 s following standing. This may reflect autonomic dysfunction in the oldest age group. The hypothesis will require formal autonomic function testing to confirm the observations.

0066
Palliative care and care of the older person—learning from palliative care for all

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Introduction: Palliative care for all—integrating palliative care within disease management frameworks was published in 2008. The recommendations seek to outline how palliative care approach can be included within routine care of people with advanced respiratory disease, heart failure and dementia. The report acknowledges the role of Services for Older Persons in palliative interventions.

Method: Greater collaboration is needed between disease management specialists and specialist palliative care. Evidence from services for older persons in other countries demonstrates that fewer older people have access to specialist palliative care in comparison with those under 65. Identifying mechanisms to enhance interface between services for older persons and palliative care services will assist overall service delivery for older people who are nearing end of life in all settings. Developments such as integrated care pathways, advance care planning, shared care protocols and training/education in end of life care will seek to ensure more collaboration and co-ordination of care. The outcomes from the three action research projects in Dementia, Heart Failure and Advanced Respiratory Disease will inform developments in these areas.

Results: The action research studies will

- Provide clarity on nature, potential and timing of palliative interventions for people with these diseases and their families.
- Frame a model of support and intervention for implementation in other services in Ireland.
- Develop relevant education materials.
- Develop guidelines for introduction of palliative interventions and referral to SPC.
- Provide information for service users, family members and staff outlining symptoms, treatment options and advance planning.

Discussion: Older Persons Services have traditionally played a significant role in the care of the older person as they near the end of life. Developing clarity in the role of palliative care in disease management frameworks will further assist the end of life care of older people.

0067
Introducing an acute stroke pathway in the emergency department improves access to urgent CT Scan

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Stroke is the most common cause of acquired disability in adults in Ireland and in Sligo General Hospital we see in excess of 200 cases of Acute Stroke and TIA annually. We currently provide thrombolysis for suitable patients presenting with stroke in the appropriate time frame.

As with all hospitals in the Irish Republic, the Irish National Audit of Stroke Care identified a low uptake of thrombolysis compared to other European Countries including Northern Ireland.

We demonstrated by audit conducted between July and September 2008 that this was in part due to delay in urgent CT scanning in patients who presented within 3 h of symptom onset.

We postulated that introducing a pathway for patients with possible acute stroke would improve patient investigation and increase rates of thrombolysis.

Between 1 January 2009 and 31 March 2009, we identified 67 patients presenting with acute stroke. We retrospectively gathered information from their medical record including demographic data, risk factor profile, clinical investigations, time of onset of symptoms, time of presentation, CT timing and outcome measures.

In the original audit, 36% of patients presented within 3 h of symptom onset. Of these less then half had acute CT Brain performed. After the introduction of an Acute Stroke Pathway only 11 patients (16%) presented within the 3 h time frame. Of these 100% had an urgent CT Brain performed and two proceeded to be thrombolysed with tPA.

In conclusion, the introduction of a pathway to facilitate appropriate and immediate investigation and treatment of Acute Stroke in the Emergency Department improved our ability to deliver thrombolysis. However we found that public awareness of stroke needs to be addressed to encourage early presentation to Acute Medical Services.

0068
Delayed discharge for post-stroke patients?—a survival analysis

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Stroke places a heavy burden on society at a cost of 7 billion pounds per year. Such costs are partly explained by a prolonged length of stay in hospital (LOS), often considered to be a wasteful use of resources. Long term nursing care considerably increases the cost of stroke disease to the health service. The rationale of this study was to explore the relationship between LOS in hospital of post-stroke patients and the destination to which the patient is discharged, with a particular focus on discharge to Private Nursing Home (PNH).

The sample was a 5 year retrospective dataset of 24,898 patients admitted to hospitals in Northern Ireland with a diagnosis of stroke. Kaplan Meier survival analyses and log rank tests were performed to examine the relationship between LOS and destination.

The log rank test for equality between survival distributions showed a significant difference (χ^2 statistic = 1586.02; $P = 0.00$) in LOS of patients discharged to various destinations. Patients discharged to a PNH had the lowest probability of being discharged within the first 2 months of hospitalization. Separate Kaplan Meier analyses were performed to examine the relationship between LOS and destination of patients over a 5 year period. For each year there was a significant difference ($P = 0.00$). Patients discharged to a PNH consistently had the highest probability of increased LOS in hospital within the most recent three years. While overall LOS in hospital has decreased each year, LOS of patients discharged to a PNH has increased. In addition the proportion of stroke patients discharged to PNH has remained static over the five year period.

These findings are worrying given the clinical implications for this group. For example, nursing home residents are considerably more likely to be re-hospitalised than those who are discharged to their normal residence, and to have a decreased functional status.

0069
The effectiveness of intervention in the community reablement unit on mobility and balance in older people

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Introduction: The Community Reablement Unit (CRU) opened in 2003 as the first unit of its kind in the Republic of Ireland to provide step-up rehabilitation to community dwelling older people. The unit aims to, maximise patients' safety, functional independence and mobility to enable continued community living. A decline in physical function as people age contributes to a loss of independence and the need for nursing home and acute hospital admissions. This study aimed to determine whether the CRU programme had an influence on physical health in terms of mobility and balance.
Method: A single centre prospective study was undertaken between April and October 2008. All individuals admitted to the CRU ($n = 159$) were asked to participate. The elderly mobility scale (EMS) and the Berg balance scale (BBS) were measured as appropriate at admission and discharge. The timed walk and functional reach components of the EMS were also noted at each time point. The non-parametric related sample Wilcoxon Signed Ranks test was used to examine the data and determine if there was a change in the study group from admission to discharge.
Results: Out of the 159 individuals admitted to the CRU, 151 were eligible and agreed to participate in the study. A statistically significant improvement was detected in paired EMS ($n = 129$) scores from admission [(mean $\pm$ SD) 16.76 $\pm$ 3.08] to discharge (17.97 $\pm$ 2.27) ($P < 0.0001$) and in BBS scores from admission (42.86 $\pm$ 9.43) to discharge (47.81 $\pm$ 7.63) ($P < 0.0001$). A statistically significant improvement was also found in the timed walk and functional reach components of the EMS from admission (11.54 $\pm$ 10.63 s, 14.92 $\pm$ 7.22 cm) to discharge (9.16 $\pm$ 6.49 s, 17.63 $\pm$ 6.50 cm) ($P < 0.0001$).
Discussion: The CRU programme is successful in improving mobility and balance in this sample of older people. The CRU is an innovative unit that aims to help maintain older people in the community and prevent unnecessary hospital and nursing home admissions.

0070
Frequency of falls and fractures in the first year after stroke—the North Dublin population stroke study

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Stroke patients often have motor, sensory, visual or perceptual deficits which predispose to falls. Increasing age and stroke-related reduced mobility may increase risk of osteoporosis and fractures after stroke. Relatively few population-based studies including very elderly stroke patients exist, as these have frequently been excluded in previous studies, leading to potential bias.

The North Dublin Population Stroke Study is a prospective population-based cohort study of stroke and TIA frequency and outcome in an Irish urban population of 294,592 individuals, according to recommended criteria for 'ideal' stroke epidemiology studies, and including a high proportion of elderly adults (16% > 85 years). Inclusion criteria were: (1) All ischaemic and haemorrhagic stroke (2) Alive at ascertainment (coroner/pathologist identified cases excluded).

545 patients were eligible for inclusion, with one-year follow-up available on 512 (94.2%). 16.9% (87/512) patients reported at least one fall within the first year, 10.5% (54/512) with two or more falls. 2.2% (11/512) patients experienced at least one fracture, 63.6% (7/11) of which were hip fractures. On univariate analysis, risk of falling was associated with diabetes mellitus ($P = 0.03$), 1-year Rankin score ($P < 0.001$) with a trend for increasing age ($P = 0.09$), but not gender. Falling post-stroke was more common in patients discharged home ($P = 0.002$) and with use of community services ($P < 0.01$).

We found lower rates of post-stroke falls and fractures compared to previous studies and an association with diabetes mellitus not previously described. Falls prevention programmes may be particularly beneficial to stroke survivors living in the community in the first year post-stroke.

0071
The long term care experience in St James's Hospital in 2008

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Introduction: Patients waiting for long term care (LTC) account for an increasingly larger proportion of hospital inpatients. Approximately 14,000 bed days were lost per annum, between 1996 and 2002 due to delayed discharge of LTC patients in St. James's Hospital (SJH data). We performed an analysis of patients awaiting LTC in 2008 to see if this has changed over time.
Methods: Data was collected via the Medicine for the Elderly (MedEL) Database for all inpatients listed for long term care by the MedEl service from 1 January 2008 to 31 December 2008. Outcomes included death, discharge home or transfer to a nursing home. Length of stay was calculated in days.
Results: 343 patients were placed on the list in 2008. As of 27 March 2009, 47 patients remained on the list and 296 had a discharge outcome. 199 (67.3%) were discharged to a nursing home, 36 (12.1%) went to complex continuing care beds, 48 (16.2%) died and 13 (4.4%) went home. The median age was 84 (range 66–101). Females accounted for 224 (65.3%) of patients. Median length of stay between listing and discharge was 73 days. Patients waiting for long term care accounted for 31,984 lost bed days in 2008.
Discussion: Bed days lost due to delayed discharges of LTC patients has worsened dramatically in SJH over the past 6 years. The number of patients discharged to nursing homes in 2008 (235) was similar to previous years (1997 to 2003 was 221 per year) as were their demographics (median age 84 in 2008 versus 82 previously [1], 65% female in 2008 versus 65% previously) [1] suggesting that numbers requiring LTC has remained stable. A new approach to resourcing of LTC beds is required.
References: (1) Cunningham CJ et al (2008) Survival of patients discharged to long term care. IMJ 101(10).

0072
The effect of ward change on hospital in-patients

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The physical environment in which treatment occurs has an impact on treatment and outcome processes. Moving environment can also have an effect. Older adults may be more reluctant to admitting to anxiety and less willing to seek help than younger counterparts [1]. Connolly hospital is a 439 bedded teaching hospital which has been rebuilt. In February 2009 elderly inpatients were moved from older units to new wards. The aim of this study was to examine the impact of moving ward on hospital inpatients in terms of cognition, anxiety, depression and satisfaction.

We obtained ethical approval and patient consent, administered the HADS, MMSE and GDS along with a satisfaction survey using a visual analogue scale to each patient, prior to and after moving from a rehabilitation ward and acute medical ward to new wards.

A total of 24 patients moved, 4 were excluded due to imminent discharge and 1 patient refused consent; results from 19 patients were analysed. The average age was 73.5 years and male:female ratio 1:1.4. The mean MMSE dropped by 0.84, mean GDS dropped by 0.37, depression score of HADS dropped by an average of 0.5. The anxiety score of HADS increased by 1.05. Satisfaction scores (i.e. toilet facilities, privacy, cleanliness, access to shops and overall satisfaction) improved.

Our study indicates that patient satisfaction improved with improved surroundings. We also demonstrated that the move was associated with increased anxiety, and a small reduction in measured cognition. We suggest that in planning patient movement these factors should be considered and managed.
References: (1) Hyer K, Brown LM (2008) The impact of event scale—revised. AJN 108(11):60–68.

0073
Does cognitive impairment and inappropriate footwear increase the risk of falls in the older population?

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Introduction: A serious fall related injury is currently the foremost predictor of loss of independence and premature admission to permanent residential care. A fall is seldom due to a single cause and research has identified factors that increase the risk of falling in the older person. Two of these variables, inappropriate footwear and cognitive impairment, have been found to increase the risk of falls within the older population.
Methods: A retrospective analysis was carried out on all inpatients in a care of the elderly department over the age of 65 years who had experienced a fall or falls over a 12-month period. Each fall was reviewed by a clinical nurse specialist and risk factors assessed. Within this cohort, the variables of cognitive impairment and footwear worn at time of fall were reviewed.
Results: 139 people were reviewed post fall during the period of December 2007–December 2008. Footwear worn during a fall was placed into four categories: shoes, slippers, barefoot and other.
Footwear no. of falls cognitively impaired cognitively.
Intact
Shoes 52 21 31
Slippers 59 35 24
Barefoot 30 17 13
Other 12 4 8
Discussion: From the results, there is a higher risk of falling with cognitively impaired patients who wear slippers or are barefoot when walking.

0074
The side effects of PTH reported by patients

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Introduction: Recombinant parathyroid hormone (PTH) is an effective anabolic agent used in osteoporosis treatment. It is currently available in both 1–34 and 1–84 preparations as a subcutanaeous

once-daily injection. Side effects of PTH include hypercalcaemia, hypercalciuria, nausea, dizziness, pain and fatigue. This paper describes the undesirable side effects reported by patients to our bone health service after commencing PTH treatment.
Method: A review of patient charts and a search of the bone health database was performed.
Results: Of 200 patients taking PTH, 47 (23.5%) reported a range of side effects. 14 experienced dizziness or orthostatic hypotension, 15 reported increased tiredness, 12 had nausea and headaches. Various symptoms occurred in 6 other cases, including skin irritation [1], severe back pain [1], sweating and hot flushes [1]. Effective measures to alleviate side effects are increasing fluid intake and administering PTH at night. An altered regime of PTH on alternate days also proved to increase drug tolerance. 7/47 (15%) completed the full 18-month course of treatment while a further 11 patients (23.4%) had to discontinue PTH within the first month. Those who did not complete treatment still continued PTH for periods ranging from one month to one year.
Discussion: Managing the side effects that occur with PTH can enable a greater compliance with treatment and increased drug efficacy. Measures to alleviate symptoms such as nausea, headaches and dizziness has resulted in better tolerability of PTH and an increase in the rate of patients successfully completing the 18-month course of treatment.

0075
Hip fracture patients with prior fragility fractures are undertreated for osteoporosis

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A previous fragility fracture is a known risk factor for osteoporosis and subsequent fracture. NICE and NOF guidelines suggest that patients who have suffered one or more fragility fractures should be priority targets for investigation and treatment. Treatment of osteoporosis reduces the risk of subsequent fractures, particularly for postmenopausal women with a fragility fracture. Prevention of hip fracture should be of paramount importance due to their significant negative effects on morbidity and mortality.

We reviewed all consecutive hip fracture admissions over a 9 month period (August 2008 to May 2009) looking at baseline demographics, previous fractures history, concurrent medication and prior history of falls. We noted type of previous fragility fractures experienced and its temporal occurrence to the admitting hip fracture.

135 patients consecutive patients were reviewed. They were predominantly female (75%) with a mean age of 78 years. Fifty six (41%) patients had a previous fragility fracture. 42/56 (75%) of these patients were not on any osteoporosis medication on admission nor had been investigated for osteoporosis. Breakdown of fractures: Colles fracture (21, 37.5%), hip fracture (9, 16.1%), known vertebral fracture (5, 8.9%) and lower leg fractures, including ankle, tibia and fibula, (10, 17.9%). Most fractures had occurred in individuals >5 years prior to the admitting hip fracture.

Previous fragility fractures were common in this group with 41% suffering at least one fragility fracture. Awareness and treatment of osteoporosis was low as only 25% of patients were on bone protection on admission. Colles fracture would appear to be most frequent preceding fracture. Patients with a prior fracture are 2–5 times more likely to have further fractures than those without fractures, identification and treatment of high risk patients may have prevented some of these subsequent hip fractures.

0076
Stroke in rural Ireland—what's going on in the sticks?

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Introduction: Although knowledge regarding stroke in urban Ireland is increasing, data on stroke in rural areas remains sparse. We studied patients presenting with acute stroke in West Cork and South Kerry, one of the most geographically remote parts of the country.
Methods: In 2006, a single physician at Bantry General Hospital assumed responsibility for all patients admitted with acute stroke. A stroke database was established recording epidemiological and clinical information and data from all patients admitted during 2008 is presented.
Results: 93 patients were admitted with acute stroke, accounting for 4.6% of medical admissions but 15.6% of bed days. 45 were female. Mean age was 79 ± 10 years (range 49–96). 82 were due to infarction. 33 patients had a total anterior circulation syndrome, 33 a partial anterior circulation syndrome, 11 a posterior circulation syndrome and 11 a lacunar syndrome. 26 patients were transferred to the on-site rehabilitation unit. Ultimately, 61 patients were discharged home, 12 to long term care and 18 died. Three PEG tubes were inserted, 2 of which were subsequently removed. Mean and median lengths of stay were 35 and 15 days respectively, but 18 and 9 days respectively if delayed discharges were excluded. More than half arrived at the hospital greater than 12 h after symptom onset. Three patients may have been suitable for thrombolysis, none of whom would have been eligible if they had to travel to Cork city.
Discussion: Patients presenting with stroke in the rural Southwest are older, have denser strokes and present later than their urban counterparts. Patient outcome measures, however, are comparable. Thrombolysis must be available locally if the population is not to be excluded from access to this treatment.

0077
Influence of age and gender on prescription rates in a medicine for the older person outpatient population

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Older people may have multiple comorbidities and are often prescribed multiple medications. Available data for the efficacy of cardioprotective drugs in this population is conflicting. Physicians may be reluctant to prescribe these agents in older patients due to the greater risk of adverse effects. The aim of this study was to determine the effect of age and gender on the prescription rates of important drug classes in our outpatient population.

We examined the records of consecutive patients attending the Medicine for the Older Person outpatient department over a 5 month period. We divided patients into subgroups based on their age and gender and examined the prescription of several important drug classes in each subgroup.

Data for 424 patients was analysed (65.1% female vs. 34.9% male). Average patient age was 81.5 years old (range 63–99 years). The mean number of medications prescribed per patient in the group as a whole was 7.6 (0–26).

Patients under 85 years old were much more likely to be prescribed a statin than older patients (52.8 vs. 35%, $P < 0.002$). Age had no effect on the prescription of ACE inhibitor/ARB (36 vs. 37.6%,), proton pump inhibitor (51.4 vs. 48%), bisphosphonate (25.6 vs. 24%) or opioid (12 vs. 11.8%) medication. Patients over 85 were slightly more likely to be on a beta-blocker than younger patients (35 vs. 29%).

Patient gender had no effect on the relative prescription rates of statins, beta-blockers, proton-pump inhibitors and ACE/ARBs. However, women were three times more likely to be on bisphosphonates (33.3 vs. 10.1%, $P < 0.0002$) and almost three times more likely to be on opioids (15.2 vs. 5.4%, $P = 0.0028$). Nonsteroidal anti-inflammatory drugs were prescribed in more women than men (5 vs. 0%).

Old and very old outpatients are commonly prescribed statins, ACE inhibitors, and proton pump inhibitors. Statins were less likely to be prescribed in our oldest patients but age had no effect on the prescription rates of ACE inhibitors, proton pump inhibitors, bisphosphonates or opioids and a very minor effect on the prescription rates of beta-blockers. Bisphosphonate, opioid and NSAID prescription was more common in women than in men.

0078
Early results from an acute stroke unit

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Introduction: Patients managed in dedicated stroke units have been shown to have a 25% reduction in mortality and disability. We compared the management of stroke patients admitted to a new Acute Stroke Unit (ASU), with patients admitted prior to the establishment of an ASU.
Methods: An audit of 54 consecutive patients admitted to an ASU over six months was conducted using Irish National Audit of Stroke Care (INASC) parameters. 53 matched controls, admitted to the hospital in the six months prior to the opening of the ASU, were identified from HIPE. Data were compared using the Chi-squared or Fisher's tests as appropriate.
Results: There was no difference in median age [75 (19–92) vs. 74 (33–91) years] and gender between the groups [56% males vs. 57%]. There were no differences in time to admission, length of stay, CT findings or stroke aetiology. Median hospital stay in ASU group was 11 (2–116) days versus 12 (1–93) days pre-ASU. 74% of ASU patients had CT within 24 h compared with 60% pre-ASU, $P = 0.13$. 100% patients in the ASU group had continuous telemetry compared with 46% pre-ASU, $P < 0.001$. 17% of patients were newly diagnosed with Atrial Fibrillation in ASU group compared with 6% pre-ASU, $P = 0.19$. Recording of blood glucose (62 vs. 17%) and weight (87 vs. 15%) was more likely in ASU, $P < 0.0001$. Access to physiotherapy (94 vs. 81%, $P = 0.06$) improved in ASU group. Access to Occupational Therapy (38 vs. 28%, $P = 0.27$) and SALT (49 vs. 38%, $P = 0.29$) was not significantly different. 32% of ASU patients had inpatient complications compared with 21% in pre-ASU group, $P = 0.24$ and in-hospital mortality was similar.
Conclusion: These results compare favourably with INASC. The establishment of an ASU demonstrated a trend towards improved patient care in terms of access to diagnostics, therapy and reduced morbidity but the study doesn't have sufficient power to detect this reliably.

0079
Improving on the Irish national audit of stroke care—results from a newly established acute stroke unit

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Introduction: A recent Irish National Audit of Stroke Care (INASC 2008) found many inadequacies in the delivery of stroke care compared with the UK. We compared the management of stroke patients admitted to a new Acute Stroke Unit (ASU), with the findings from the INASC.
Methods: An audit of 54 consecutive admissions to an ASU over 6 months was conducted and results were compared to INASC.
Results: The groups were demographically similar. There were no differences in risk factors or stroke aetiology. Median stay in ASU group was 11 (2–116) days, with 70.2% spending >50% of their stay in the ASU, versus 14 (0–388) days and 1% in an ASU in INASC. All patients were under the care of a Geriatrician in ASU (100 vs. 31%). 74% of ASU patients had CT within 24 h compared with 40% in INASC and 4.2% were thrombolysed compared with 1%. ASU patients were more likely to have received aspirin within 48 h (80.9 vs. 45%). Swallow was assessed within 24 h in more ASU patients than INASC (51 vs. 26%). Access to physiotherapy (80.7 vs. 43%), Occupational Therapy (38.3 vs. 22%) and SALT (49 vs. 29%) was better in our ASU. Recording of weight (87.2 vs. 41%) was more likely in ASU.
Conclusion: The results of our ASU audit compare favourably with INASC. Improved patient care in our ASU was demonstrated in terms of access to diagnostics and therapy.

0080
The importance of monitoring renal function and adequate vitamin D repletion in IV Zoledronic acid use

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Introduction: Once yearly infusion of IV Zoledronic Acid has been shown to reduce the risk of vertebral, hip and other fractures. It is generally well tolerated. However two of our inpatients suffered severe hypocalcemia and respiratory depression. Consequently we conducted a 9 months prospective study on the safety profile of IV Zoledronic Acid in osteoporotic patients intolerance to oral bisphosphonate.
Methods: In this study 55 patients (48♀, 7♂, mean age 72, CrCL 64, PTH 40, *T* Score −3.7, BMD 0.732) were recruited from July 2008 to March 2009. Patients had their Bone, Liver, Renal Profile, PTH and Vitamin D level checked before and not more than 10 days after the infusion of IV Zoledronic Acid. All adverse effects were recorded. All patients were on the recommended dose of calcium/vitamin D supplementation.
Results: 9 (16%) patients developed asymptomatic transient hypocalcemia of between 2.0 and 2.2 mmol/L. No patient developed symptomatic hypocalcemia or hypocalcemia of less than

2.0 mmol/L. 4 (7%) patients developed at least 30% disimprovement in serum creatinine which were reversible with fluid. 3 (5%) patients developed influenza like symptoms, 1 (2%) myalgia and 1 (2%) pruritus. No patient with vitamin D level of more than 80 nmol/L developed hypocalcemia. 3 of 19 patients (15%) with Vitamin D level between 40 and 80 developed hypocalcemia while 2 of 8 (25%) patients with Vitamin D level of less than 40 nmol/L developed hypocalcemia. Overall 18 (32%) patients developed adverse effects.

Conclusion: Biochemical and clinical adverse effects occurred in 1/3 of patients receiving IV Zoledronic Acid. However all adverse effects were transient and reversible. Currently there is a lack of clarity in monitoring osteoporotic patients receiving IV Zoledronic Acid and this study highlights the importance of pre hydration, monitoring of renal function and adequate Vitamin D repletion in patients receiving IV Zoledronic Acid.

0081

Do stroke intervention studies represent older people adequately?

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Background: Stroke affects older people disproportionately, with 80% of admissions aged over 65 in Irish (INASC) and UK national hospital audits. However, concerns have been raised about ageism in stroke care, this may extend to failing to ensure that clinical trials of interventions include adequate numbers of older people. We aimed to identify the age profile of patients treated in a sample of stroke intervention studies to determine if the patients used in intervention studies represent the mean age of stroke patients in INASC/UK Sentinel audits.

Methods: Abstracts from the 17th European Stroke Conference 2008 [1] were used as a source to identify mean age of patients included in stroke intervention studies.

Results: Of the 240 abstracts where the age of patients included in stroke intervention studies were reported the mean age was 67 years (SD 4), the median age was reported in six interventional studies and was 69 years (65–72). This contrasts with a reported mean ages of male stroke patients as 72 years (SD 13) and of female patients as 78 (SD 13) years in INASC, and a mean age observed in UK National Sentinel audit of 75 years (SD 13): this audit reported the median age of stroke patients as 78 (68–85).

Discussion: Stroke intervention studies report mean ages that are considerably lower than representative hospital-based national audits. Older patients may be more likely to have cognitive or communication difficulties excluding them from intervention studies, the size of the difference, and reports of ageism in stroke care means further scrutiny of the non-inclusion of older people in stroke intervention is required. Ethics review boards and medication licencing agencies should be vigilant to ensure future clinical trials are representative of the populations who are likely to receive the treatment.

References: (1) Cerebrovasc Dis 2008;25(suppl 2):1–192.

0082

Therapeutic INR predicts improved early recovery in anticoagulated patients with stroke and atrial fibrillation—the north Dublin population stroke study

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Background: Atrial Fibrillation (AF) is associated with increased risk of severe stroke. Although warfarin anticoagulation has proven efficacy for stroke prevention in AF, up to 75% of warfarinised AF patients who suffer stroke have low International Normalised Ratio (<2) at onset. We investigated the relationship of INR at stroke onset to 90-day outcome in the North Dublin Population Stroke Study.

Method: We identified patients with AF and ischaemic stroke while on warfarin in an ongoing prospective cohort study in 294,529 individuals in North Dublin. The diagnosis of ischaemic infarct was validated by review of medical records, and INR measured at stroke onset. Stroke severity was assessed by NIH Stroke Scale at onset and modified Rankin score (mRS) pre-stroke and at 7, 28 and 90 days.

Results: 108 patients with ischaemic stroke were identified. 51.2% (21/41 on warfarin) had sub-therapeutic INR (<2) at presentation. No difference was seen in pre-morbid status across categories of pre-stroke medication. Younger patients were more likely to receive warfarin.

Patients on no anti-thrombotic agent, anti-platelet only, or warfarin with low INR, had significantly worse functional outcome at 7, 28, and 90 day follow-up based on mRS. Patients with INR ≥ 2 at time of infarct showed better recovery up to 90 days (median mRS 3, $P = 0.04$), together with lower fatality rates.

INR at admission was inversely correlated with 90-day MRS ($P = 0.048$, rho $= -0.31$). In a multivariable linear regression model including age, NIHSS, low INR and pre-stroke MRS, age ($P = 0.001$, beta 0.14) and low INR ($P < 0.04$, beta 1.14) independently predicted functional outcome.

Conclusion: In a population study, we found better stroke outcome with therapeutic INR in AF. Optimal anticoagulation control in AF may improve stroke recovery in addition to established benefits for stroke prevention.

0083
Referral for DXA scanning: which risk factors are most predictive for osteoporosis

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Osteoporosis affects both men and women with its prevalence increasing with age. The gold standard for the diagnosis of osteoporosis is dual X-ray absorptiometry (DXA). Previous studies have shown that some risk factors are more associated with osteoporosis compared to others. The aim of this study was to determine which risk factors were more commonly referred for DXA and are more likely to predict a positive DXA for osteoporosis.

Our osteoporosis service is an open access service for GPs and hospital consultants. Baseline demographics were recorded with the diagnosis for osteoporosis (OP) as per WHO guidelines using DXA. Risk factors for osteoporosis were recorded in detail in a subset of referrals.

8,119 new patients had a DXA performed over a 6-year period between January 2003 and April 2009. Mean age was 64.18 (±16.69) years with 80.5% being female. The incidence of osteoporosis increased with age. For patients <60 years, 22% had osteoporosis. Patients >70 years, 58% had osteoporosis whereas patients >80 years, 75% had osteoporosis. A further subset of 3,691 new patient referrals were reviewed. The four most common reasons for referral included (percentage of referrals and those with osteoporosis are included in brackets): (a) history of fracture (27.7%, OP 61.7%), (b) X-ray evidence of Osteopaenia (24.3%, OP 53.1%), (c) steroid use > 3 months (18.6%, OP 44.6%), and (d) rheumatoid arthritis (17%, OP 44.4%). Reduced BMI was the most predictive risk factor for osteoporosis with 67.4% of these cases having osteoporosis.

Age is an important risk factor for osteoporosis, with 75% of patients over 80 years having osteoporosis and a further 20% having osteopaenia. Age, history of fragility fracture, X-ray evidence of osteopaenia, steroid use and rheumatoid arthritis were the most predictive and commonest risk factors for osteoporosis and should be prioritised in an open access DXA service.

0084
Access to rehabilitation services in private nursing homes in Ireland: implications for Occupational Therapy

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Introduction: Private nursing homes have a well-established role in providing long-term care in Ireland. The availability of rehabilitation services to nursing home residents is an area that needs to be addressed. UK, US and the Dutch evidence indicate that very little therapy services are received in nursing homes (Bardoawala et al. 2001; Sackley et al. 2001; Airling et al. 2000; De Boer et al. 2007).
Methods: The sample for this project was chosen from those private nursing homes registered on the Nursing Home Ireland website. All nursing homes involved were required to be privately owned and varied in size. A survey method was used to collect data from a national sample of 150 private nursing homes. Descriptive statistics were used to determine the availability of each service, payment methods, referral reasons and how often the service was received. Spearman's Rho anlayses were performed to determine the relationship between the availability of services and other variables.
Results: The response rate for the effective sample was 34%. Physiotherapy (PT) proved the most available service in nursing homes (86.8%, $n = 46$). This was followed by dietetics (67.9%), SLT (54.7%), OT (43.4%) and social work (23.1%). Relationships were found between PT and dietetic provision and size of the nursing home ($P = 0.035$ and 0.003, respectively).
Discussion: Older people in Ireland currently receive limited rehabilitation influence and services received are provided through various means. This is the first identified study to date in Ireland looking at rehabilitation services and their availability to nursing home residents. This nationwide study is important as it provides previously unknown statistics on nursing home care in Ireland. The results of this study should result in further action and development regarding nursing home care and current standards.

0085
Serum 25 (OH)D3 is lower in out-patients attending a falls and black out unit than in matched community-dwelling controls

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Introduction: Vitamin D deficiency is common in elderly populations and is associated with hypertension, vasculopathy and falls. Orthostatic hypotension (OH) is associated with increased fall risk. We aimed to investigate vitamin D levels in outpatients attending a falls and black out unit (FABU) compared to community dwellers without OH.
Methods: Consecutive patients attending a FABU were screened over two months. All outpatients over 64 ($n = 38$, male = 14) without intercurrent illness were included. These were age- and gender-matched with 38 community-dwelling controls who denied falls or symptoms attributable to OH in the preceding 12 months. Cases underwent active stand with non-invasive beat-to-beat plethysmography. Mini-mental state examination (MMSE) was conducted on both groups as were anthropometrics, renal and bone profile, and vitamin D concentration.
Results: There were no between-group differences in MMSE, smoking status, creatinine clearance, albumen or bone profile. Serum 25 (OH)D3 concentrations were significantly lower in cases vs controls [40.5 ng/ml (95% CI 33.2–47.8) vs. 61.1 ng/ml (CI 53.8–68.5). *t* test $P < 0.001$], and remained so when adjusted for confounds. Within cases, vitamin D correlated with resting diastolic blood pressure level (Pearson $r = -0.436$, $P < 0.01$) and with nadir systolic ($r = -0.322$, $P = 0.04$) and nadir diastolic ($r = -0.398$, $P < 0.05$) blood pressure on standing. However, vitamin D did not correlate with the maximum drop in systolic ($r = 0.15$, $P = 0.37$) or diastolic ($r = 0.09$, $P = 0.59$) blood pressure on standing.
Discussion: We demonstrated significantly lower vitamin D levels in outpatients attending the FABU compared with matched community-dwelling controls. However, there were no associations between vitamin D and haemodynamic parameters during active stand other than resting blood pressures. This does not support a dose-response relationship between vitamin D deficiency and orthostatic

hypotension: it is possible that vitamin D deficiency may be lower in the case group as a non-specific marker for frailty.

0086
Relocating to a specialist dementia care unit in Ireland: experiences and views of residents and caregivers

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More Irish people will be diagnosed with Alzheimer's Disease and related dementias in the near future. Specialist dementia care units (SCUs) represent one type of residential care setting tailored to the unique needs of people with dementia. SCUs have only recently featured the Irish long-term care continuum. Thus there is a gap in our knowledge base about who accesses these facilities and about the process of relocating. Little is known as well about the short- and more long-term effects of relocation and about ways of communicating and managing the transfer. This Ph.D. study will investigate these issues and explore in-depth the views and experiences of people with dementia and their caregivers.

The research design is qualitative and exploratory. The methodology is based on a Heideggerian phenomenological framework. Two research sites will be used to access the sample. Qualitative methods will include (a) individual in-depth interviews with residents and their relatives and (b) focus groups with staff members. Both individual and group interviews will be held at base-line and at follow-up. Residents will be cognitively assessed using the MMSE. Socio-demographic information about the resident will be collected from caregivers. An analysis of nursing home records will also be undertaken.

This poster will report findings emerging from base-line interviews with residents and their relatives ($N = 6$) as well as the results emerging from one focus group with SCU staff.

The findings from this research it is hoped will generate an improved understanding of individual relocation experiences and will produce new knowledge about the relocation process itself and about its effects on people with dementia and their carers. It is also hoped that the study outcomes will be used to create guidelines on best practices regarding SCU transfer and will ultimately help improve the quality of life for all those undergoing such relocations.

0087
A database review of DEXA scanning in an open access diagnostic unit: an 11 year experience

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Introduction: Osteoporosis is a common condition. Screening for the disease is extremely important as osteoporosis is associated with significant morbidity and mortality. As the population over 65 increases, there will be a parallel increase in the incidence and prevalence of osteoporosis.
Methods: A database review of all patients referred for dual energy X-ray absorptiometry (DEXA) scan at an open access diagnostic unit from January 1998 to January 2009, serving a population of 400,000, with approx 45,000 $\geq$ 65 years.

Results: 24,301 DEXA scans were carried out. 16,791 females had DEXA scans. 1,764 males had a DEXA scan. The average age of females referred was 60.6 years, SD 12.9 compared to 64.86, SD 16.09 for males. Of the 16,791 females, 5730 had normal scans, 6475 were osteopenic and 4,586 had osteoporosis. The average age of osteoporotic females was 69.22, SD 11.7 compared to 54.39, SD 10.9 for normal scans. The average age of osteopenic females was 60.22, SD 12.

The average age of males referred was 64.86 years. Of the 1,764 males, 610 had normal studies, 724 were osteopenic and 430 had osteoporosis. The average age of osteoporotic males was 67.41, SD 14.37 compared to 64.45 SD 16.5 for osteopenic males.

In those $\geq$65, 9610 were female and 1,079 male. Of the females, 3,140 had osteoporosis (32.6%) compared with 277 males (25.6%). The prevalence of osteoporosis in men $\geq$ 65 years who underwent screening is 1.3 and 12.56% in females.
Discussion: This study highlights the need for improved screening of males for osteoporosis. The ratio of female to male DEXA scans was 9.5:1. The number of osteoporotic males diagnosed within our cohort is significantly less than that previously reported in other studies, highlighting the need for improved screening. The estimated prevalence rate in females is similar to other studies.

0088
Osteoporosis treatment in patients receiving glucocorticoids referred for dual X-ray absorptiometry (DXA)

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Glucocorticoids are widely used to treat a number of medical disorders. Prolonged steroid use can cause osteoporosis can lead to a significant increase in fracture risk of the hip and spine. However, significant bone loss can occur within the first 6 months of commencing therapy, up to 30% of trabecular bone in some patients. Our aim was to assess the use of osteoporosis treatment prior to DXA, reasons for glucocorticoids, and outcomes of the DXA.

This was a retrospective audit of patients referred for DXA who have been taking oral glucocorticoids for >3 months reviewing prior treatment and reasons for being on glucocorticoids. DXA was performed at several sites including total hip, femoral neck, and lumbar spine.

We reviewed 687 patients referred for DXA on glucocorticoids >3 months. Mean age 64.2 ($\pm$16) years. 71.9% patients being female. 412 (60%) of patients were >60 years. 117 (17%) patients had a known fragility fracture. 196 (28.5%) on OP treatment. The most common reasons for being on glucocorticoids included rheumatoid arthritis (RA) (47.1%), COPD (25.1%), gastrointestinal disorder (14.7%), bone marrow and renal transplants (7.5%) and inflammatory disorders (5.6%). On review of DXA, 44.7% of patients had osteoporosis with the spine being the most likely site to be affected (35.5%). 31.2% (96/307) of these patients were on treatment at the time of referral.

A substantial number of patients on glucocorticocoids are not on osteoporosis treatment with almost half of patients having evidence of osteoporosis. Less than 1/3 of patients were on osteoporosis prophylaxis at time of referral. As substantial bone loss occurs in the first 6 months of GC treatment, these high risk patients should be prioritised for osteoporosis treatment.

0089
HDL cholesterol and risk of stroke

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Introduction: Low HDL is thought to relate to risk of stroke in men but its effect in women is less certain. Clarification of this issue could inform future guidelines on stroke prevention.
Purpose: To assess the effect of HDL cholesterol on stroke mortality in men and women and in high and low risk regions of Europe, using the SCORE dataset.
Methods: 107,158 individuals in the SCORE dataset had data available for HDL cholesterol; these were from 7 of the original 12 prospective studies included in SCORE. Cox proportional hazard model was used to examine the effect of HDL cholesterol on stroke mortality, adjusting for age, smoking, systolic blood pressure, diabetes, total cholesterol and body mass index. Analyses were conducted separately in men and women and in those from high-risk (Finland, UK and Denmark) and low risk (Spain, Italy, Germany and Belgium) European regions.
Results: In women from high risk countries, there was a strong, graded, inverse and independent association between HDL cholesterol and stroke mortality which remained significant on multivariable adjustment. Each increasing quintile of HDL cholesterol was associated with a significant protective effect compared to the lowest quintile; fully adjusted hazard ratios were 0.76, 0.38, 0.26 and 0.06 for the 2nd, 3rd, 4th and 5th quintiles, respectively. In men, a non-significant U-shaped relationship was seen. In those from low risk countries, no clear relationship between HDL cholesterol and stroke could be demonstrated.
Discussion: The demonstration of the independent, strong and graded protective effect of HDL-C on stroke mortality in women from high risk countries is a new addition to the current evidence base. The U-shaped relationship in men requires further study as do the regional differences in effect of HDL-C.

0090
HDL cholesterol is an independent protective factor in all ages groups and particularly important in elderly women

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Introduction: Elevated high density lipoprotein cholesterol (HDL-C) levels are known to protect against the development of cardiovascular disease (CVD). This independent, inverse relationship has been consistently demonstrated with in several studies of middle-aged men and women and elderly men. Studies in elderly women are much more limited and results in longitudinal studies have been inconsistent. The SCORE dataset contains sufficient longitudinal data on elderly women to reliably investigate the relationship.
Purpose: To assess the relationship between HDL-C and CVD mortality in each age group in men and women in the SCORE dataset.
Methods: The SCORE dataset contains 12 pooled European cohort studies, 7 are included in this analysis. Cox proportional hazards model was used to assess the effect of HDL-C on CVD mortality adjusted for total cholesterol, systolic blood pressure, diabetes, smoking and body mass index in the entire group and in each age group. Analyses were stratified by gender and country.
Results: HDL-C remained a significant, independent protective factor in each age group in men and women. The relationship was strong and graded; stronger in women than men. In the overall group fully adjusted hazard ratios were: 0.60 (95% CI: 0.51–0.69) in women and 0.76 (95% CI: 0.70–0.83) in men per 0.5 mmol/l increase in HDL-C for CVD mortality. The magnitude of the protective effect was greatest in elderly women with an adjusted hazard ratio of 0.53 (95% CI: 0.42–0.68) per 0.5 mmol/l increase in HDL-C. The corresponding adjusted hazard ratio in elderly men was 0.79 (95% CI: 0.64–0.69).
Discussion: HDL-C is an independent protective factor in all age groups, and particularly in older women. In contrast, cholesterol level tends to lose its effect in older persons. The public health implications of these findings require debate.

0091
Bedrail use in an acute hospital: an analytical study

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Bedrail use is entrenched in hospital practice. However, they maybe a barrier to rehabilitation and are inappropriate in certain patient groups. The risk of fatal bedrail entrapment is real, although rare in hospitals. Although the evidence base is of limited quality, it suggests that wholesale bedrail reduction may increase the risk of falls. Our aim was to record the prevalence of bedrail use in a large teaching hospital and to assess reasons for their use.

A cross-sectional, analytical observational study using structured observations at four time points over 24 h (morning, afternoon, evening and night) was carried out. All adult medical and surgical in-patients other than those in ICU or CCU were included. Demographic data, admission details, dependence level and cognitive state were recorded. Bedrail utilisation was documented. Structured interviews were carried out with senior nursing staff on each ward exploring their opinions on bedrail use.

There were 350 patients (mean age 64.1 years, males 51.14%) spread over 14 wards. One and thirty-seven patients had bedrails observed in use at some stage over the 24 period. The proportion of patients using bedrails increased progressively over the day (morning 16.3%, afternoon 23.4%, evening 30.7%, night-time 39.8%). Bedrail use was associated with older age (χ^2 test for trend $P = 0.005$).). Delirium ($P < 0.001$), decreased level of mobility ($P < 0.001$) and urinary incontinence ($P < 0.001$) were all linked with bedrail use. In general, bedrails were used with the purpose of protecting vulnerable people from falling out of bed. Staffing levels influenced bedrail use. Patients often requested bedrails.

Bedrails were used by a high number of patients. Bedrail use was more common in older patients. Acutely confused patients had a high use of bedrails, even though use maybe detrimental. Bedrail use needs to be individualised and inappropriate use reduced.

0092
Driving patterns of the older Dublin driver: findings from a postal survey

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The ability to drive is linked to increased autonomy and participation for older people, however, published studies specifically describing driving experiences of older Irish drivers are lacking. This study was conducted to describe the typical driving patterns among older Dublin drivers.

An focus group meeting was held with 8 older Dublin drivers, a postal questionnaire was designed based on the findings of the focus group. The questionnaire was distributed among a larger group of older Dublin drivers in 2008. Returned questionnaires were analysed descriptively.

Questionnaires were returned by 112 older drivers with between 16 and 64 years of driving experience (75 female, 37 male, age 65–88 years). The majority of respondents ($n = 88$) rated driving as important or extremely important in their everyday life. Typical weekly driving destinations were supermarket ($n = 92$, 82%), church ($n = 68$, 61%), and visiting family ($n = 66$, 59%). A majority of respondents ($n = 74$, 66%) reported driving at all times while 30 (27%) reported that they drive during daytime only, 67 (60%) preferred to drive familiar routes only and 92 (82%) described themselves as cautious drivers.

Changed driving patterns in the previous year were reported by 78 (70%) respondents, changes included avoiding night driving ($n = 51$), rush-hour ($n = 46$), adverse weather ($n = 35$), driving slower ($n = 34$), and sticking to familiar routes ($n = 33$). Reasons for changed driving patterns were given by 40 respondents, these included slowed reactions ($n = 14$), anxiety ($n = 13$), reduced vision ($n = 9$), decreased concentration ($n = 8$) and advice from family or GP ($n = 7$). Environmental factors negatively impacting on driving included increased traffic volume ($n = 56$), road works and changing road layout ($n = 54$), and intimidating behaviour of other drivers ($n = 35$). 80 (71%) respondents had not considered future alternative transportation.

Finding highlight the importance of driving for the older person in maintaining levels of participation. Self-regulation of driving was also evident notably in avoidance behaviours. The negative impact of changing traffic environments and lack of consideration of alternative transport are areas that need to be addressed.

0093
Restraint use in an acute care setting over time: a serial cross-sectional study

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A high prevalence of restraint use and sedative prescription in an Irish acute hospital setting was previously demonstrated (O'Connor KA et al. in Ir J Med Sci 172:3–5). The aim of this study was to investigate whether changes in the prevalence and type of restraint has occurred over time.

A serial, cross-sectional, analytical observational study design was used. The initial study was carried out on a randomly selected day in 2003, using the same methodology the study was repeated in 2009. Excluding those in ICU or CCU, all adult medical and surgical inpatients in a teaching hospital were included. The use of sedative medication in the previous 24-h period was recorded from patients' prescription sheet. The use of physical restraint was recorded using structured observations at four time points over 24 h.

The cohort of 270 patients in 2003 (mean age 64.6 years, male 51.11%) was demographically similar to the 2009 cohort of 350 patients (mean age 64.1 years, males 51.14%). In 2003, there were 111 patients (41.1%) observed having their mobility inhibited by some form of physical restraint at some stage of the day, this was very similar to 2009 (151 patients, 43.1%, $P = 0.59$). In both cohorts bedrails were the most common form of physical restraint. Fixed tables, furniture and belts were used in smaller numbers. Older age ($P < 0.001$) and delirium ($P < 0.001$) and decreased level of mobility ($P < 0.001$) were highly associated with physical restraint. Similar proportions were taking sedative medication of some form (45.2 vs. 42.6%, $P = 0.57$). The type of sedative medication remained very similar over time ($P = 0.84$). Neuroleptic use remained similar (4.0 vs. 5.7%, $P = 0.4$).

Restraint use remained high and unchanged over time despite recommendations on restraint use from professional bodies, increasing evidence regarding ill effects of neuroleptic medication and hospital policy changes.

0094
Are CT brain changes of cerebral infarctionless common in very old patients?

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Thrombolysis is increasingly considered a therapeutic option for very old patients with acute stroke. CT Brain is essential prior to thrombolysis to exclude intracerebral haemorrhage and to assess infarct size which, if very large, may be a contraindication to thrombolysis. There is very little information on whether the CT appearance of acute infarction is less prominent in very old patients.

We performed a retrospective review of all CT brain reports of acute stroke patients in our institution from January 2008 to September 2008. We evaluated the results on the basis of age.

136 patients were included. 58% were female, 42% male. 60% were $\geq$80 years; 29% were aged 65–79 years; 11% were aged <65 years. In patients > 80 years: 48% showed no acute changes on CT brain, 40% had radiological evidence of acute infarct and 12% showed intra-parenchymal haemorrhage. In patients aged 65–79 years: 42.5% showed no acute changes, 40% had radiological evidence of acute infarct and 17.5% showed intra-parenchymal haemorrhage. In patients <65 years: 33% showed no acute changes on CT brain, 53% had radiological evidence of acute infarct and 13% showed intra-parenchymal haemorrhage. For all patients <80 years: 40% showed no acute changes on CT brain, 44% had radiological evidence of acute infarct and 16% showed intra-parenchymal haemorrhage.

Whilst the numbers are small there was a trend towards radiological changes of acute infarction being less prominent and therefore not reported in very old patients. This is unlikely to be related to smaller infarct size or timing of CT and may be due to cerebral atrophy or reduced cerebral blood flow. Given the importance of CT in assessing infarct size prior to thrombolysis, a larger prospective study is required.

0095
Movement disorder servive: a call for action

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Introduction: Parkinson's disease (PD) is a chronic disabling neurological condition of old age. Making accurate diagnosis is essential. It is suggested that all patients with suspected PD are referred to PD specialist untreated. Our study examined the proportion of patients who are treated before specialist's assessment, their final diagnosis using UK Parkinson's Disease Society Brain Bank diagnostic criteria and potential diagnosis error rate.
Method: A retrospective case note study was performed of 42 patients who were referred with suspected PD in 2008 in a district general hospital in England. We recorded patients' age, gender, source of referral, presenting symptom and final diagnosis. In addition, we studied if they were on PD medication at time of referral. Descriptive statistics was used.
Results: Mean age was 78 years with the range between 65 and 92 years. Twenty eight were male and 14 female. Two third were referred by secondary care physicians and a third by general practitioners. The commonest presenting symptom was tremor (41%), followed by rigidity (28%), falls and poor mobility (24%) and gait abnormality (7%). Six patients (14%) were treated prior assessment, and only half of those were finally diagnosed with PD. Out of 42 suspected PD, final diagnosis of PD was made in 18 patients (43%). Potential diagnosis error rate was 57%. Other final diagnoses were benign essential tremor (17%), vascular Parkinsonism (14%), drug induced Parkinsonism (12%), Parkinson plus syndrome (12%) and Lewy body dementia (2%). There was no statistically significant difference in diagnosis error rate in two referring groups (χ^2 (1) = 0.758; $P > 0.05$).
Discussion: The potential diagnosis error rate is high. Patients with suspected PD are treated inappropriately prior assessment. We recommend effective education and training on PD and development of referral guidelines.

0096
Long-term outcome of elective electrical cardioversion of atrial fibrillation in older versus younger adults

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Introduction: Debate exists over whether atrial fibrillation (AF) is best treated with rhythm control, or rate control with anticoagulation, particularly after the recent "AFFIRM" and "RACE" studies. It is perceived that the cardioversion of AF to sinus rhythm (SR) is less successful in older than younger adults. This study compares the long-term efficacy of electrical cardioversion between older and younger adults.
Methods: HIPE data was used to retrospectively identify all episodes of elective electrical cardioversion for AF in Mallow General Hospital between 2001 and 2005. The long-term outcome was determined from a combination of medical case note review, GP interview and patient examination.
Results: Thirty consecutive cardioversions performed in people aged 60 years and older (50% were over-65) were compared to 30 consecutive cardioversions in under 60 years old. Both groups were predominantly male. The initial response rate was 90% in older people. At one year, 60% of these remained in SR, falling to 27% at 3 years, and 8% at 5 years. In younger people the initial success rate was 83%, with 48% of these in SR at one year, falling to 36% at 3 years and 22% at 5 years (P = NS compared to older group). Seven older people had a second cardioversion and only one of these remained in SR three years later. Of note, 70% of older patients who remained in SR at three-year follow-up were taking an anti-arrhythmic agent, while no younger person required this ($P < 0.05$). None of the older people in apparent SR at three years post-cardioversion were receiving anticoagulation.
Conclusion: Cardioversion for AF in "younger old" people has comparable initial and medium-term success rates to younger people. However, many older adults required long-term anti-arrhythmic therapy to maintain sinus rhythm.

0097
Re-audit: should it be a cardiac arrest or a natural death?

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Introduction: Our previous study in 2007 showed the outcome from cardiopulmonary resuscitation (CPR) in the elderly patients with co-morbidities was poor. A large number of patients with significant co-morbidities were subjected to cardiac arrest calls when they reached a natural death. We recommended early decisions to be made about CPR with realistic views about its outcomes. We introduced "Do Not Attempt Resuscitation (DNAR) decision sheet" incorporated into patients' admission clerking proforma. This study examined its impact on early decision marking about CPR.
Method: A retrospective case note study was performed of 78 patients who had a cardiac arrest in a University hospital, England in 2008. We recorded patients' age, gender, type of cardiac arrest, outcome from CPR and their co-morbidities. We also studied if DNAR decision is documented on "DNAR decision" sheet. Descriptive statistics was used.
Results: Mean age was 76 years. 41 were male and 37 female. Only 6% were VT/VF arrest. There were 3 survivors (4%). Fifty percent of those cardiac arrest patients had at least one organ failure, 22% had significant disability which included end stage chronic obstructive pulmonary disease, cerebral palsy and advanced Parkinson's disease. Ten patients (13%) had a malignancy, of which four patients had a metastatic disease and 8% had dementia. DNAR decision was documented in three cases (4%).
Discussion: This study shows the implementation of "DNAR decision sheet" does not have any impact on early decision marking about CPR because DNAR sheets are underutilised by acute admitting doctors. A large number of patients with significant co-morbidities are still experiencing cardiac arrest calls. We recommend effective education and training on decision about CPR and promotion of "DNAR sheet" through hospital meetings such as grand round, audit meeting.

0098
A case for weight based prescribing?

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Weight based prescription of medications is commonplace in paediatrics. With advancing age, pharmacokinetic processes change and

impact on drug metabolism, especially with polypharmacy. Medications such as benzodiazepines and digoxin are recommended at lower doses in all geriatric patients, irrespective of their weight. Prescription of renally excreted medications is guided by creatinine clearance. The formula for this includes weight, however there is no guidance for hepatic clearance of medications. Why is not weight based prescribing used in underweight geriatric patients?

This audit looked at geriatric patients under 50 kg with normal admission gamma glutaminase (γGT) to see if abnormalities occurred. Drug charts were reviewed to see if antibiotics, paracetamol or both were prescribed within the week prior to elevation of γGT. Matched patients over 50 kg were reviewed to ascertain if there was a difference between the underweight and normal weight groups.

Thirteen adults with a mean age of 82.7 years and a mean weight of 43.8 kg (range 30.7–47.5 kg) were identified. Thirteen matched adults with a mean age of 81.6 years and mean weight of 64.8 kg (52–77 kg) were identified. 54% of all patients ($9 < 50$ kg, $5 > 50$ kg) developed abnormal γGT during admission. Elevated γGT was seen in 69.2% of underweight patients compared to 38.5% of patients with normal weights. 89% of underweight patients developed abnormal γGT while on both antibiotics and paracetamol compared to 60% of those with normal weights.

Although it could be concluded that abnormal γGT in underweight patients appears to be related to intake of antibiotics and paracetamol, the fact that medications are a confounding variable should be considered. It is possible that the catabolic effects of weight loss and illness in underweight patients cause this metabolic disturbance. Further studies need to be carried out to see if medication impacts upon metabolic function and presents a case for weight-based prescribing of certain medications in the geriatric population.

0099
Prevalence and avoidability of adverse drug events in older patients on admission to hospital

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Introduction: There is a lack of published evidence that the prescription of potentially inappropriate medications (PIMs) as defined by Beers' criteria is associated with avoidable adverse drug events (ADEs) in older people. STOPP (Screening Tool of Older Persons' potentially inappropriate Prescriptions) is a newly validated systems-based tool to detect the prescription of PIMs. We compared the performance of STOPP to Beers' criteria in detecting PIM-related ADEs.

Methods: We prospectively studied 500 consecutive patients aged $\geq$65 years at the point of admission to a university hospital. All patients with suspected ADEs, whether contributory to admission, or detected incidentally, were referred to a panel of four experts in geriatric pharmacotherapy. An expert consensus agreement of 3/4 or 4/4 was required to define an ADE. ADE avoidability was assessed using Hallas criteria. STOPP and Beers' criteria were applied for all patients to determine the prevalence of PIM prescription and the proportion of potentially avoidable ADEs which could have been prevented by their prior application.

Results: Median patient age was 77 years. Median number of prescribed medications was 7 (range 1–27). 52% of patients were prescribed a STOPP listed PIM, with only 27% of patients taking a Beers' listed PIM. 218 ADEs were documented amongst 106 (or 21%) of patients. 167 of these ADEs were either avoidable or potentially avoidable. Beers criteria PIMs were implicated in 26% of potentially avoidable/avoidable ADEs with STOPP criteria PIMs implicated in 63%.

Conclusion: PIMs are commonly prescribed to older patients. Patients with avoidable ADEs are 2.4 times more likely to be prescribed a STOPP PIM than a Beers' listed PIM. Approximately two-thirds of potentially avoidable/avoidable ADEs might have been prevented by the prior application of STOPP criteria. Routine application of STOPP criteria may represent a simple, cost-effective practice to reduce PIM-related morbidity and mortality.

0100
Use of Warfarin among patients with atrial fibrillation at the time of admission to hospital with a stroke—the Irish experience

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The Irish National Audit of Stroke Care (INASC) conducted a national clinical audit of hospital stroke services in the Republic of Ireland in 2007. Warfarin is the most effective stroke prevention medication for high-risk individuals with atrial fibrillation, yet it is often underused. Data from comprehensive national studies can help to gauge the extent of the problem. We report on the warfarinisation rates at the time of admission with stroke from the first national clinical audit of stroke in Ireland.

36 public hospitals providing acute services to stroke patients participated. Data from consecutive discharges for a six-month period in 2005 with a primary diagnosis of stroke using ICD-10-AM were extracted for each of the hospitals for the chart review, which was based on the Clinical Audit Proforma of the UK National Sentinel Stroke Audit.

2,173 charts were individually audited. There were 469 patients (21.6%) admitted with a stroke who were known to have atrial fibrillation. 120 (25.6%) were on warfarin on admission, 268 (57.1%) were on antiplatelet agents and 102 (21.8%) were not on either. 166 (35.4%) of the 469 had a prior TIA or stroke and 52 (31.3%) of these were on warfarin. 330 (70.4%) patients were discharged alive and 116 (35.2%) were on warfarin at that time. Factors independently associated with warfarin usage on admission were male gender [odds ratio 1.3 (1.1–1.7) $P = 0.01$) and prior TIA or stroke [odds ratio 1.3 (1.0–1.6) $P = 0.02$).

This systematic national study clarifies that the clearest example of missed opportunities in primary and secondary prevention in stroke is the low level of anticoagulation pre and post stroke. Underutilisation of warfarin among women is also noteworthy. These findings should encourage greater efforts to prescribe and monitor appropriate antithrombotic therapy to prevent stroke in individuals with atrial fibrillation.

0101
Elevated Troponin levels in acute stroke are negatively associated with outcome at 3 months

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Background: Cardiac abnormalities can be produced as a result of nervous system disease. A significant proportion of acute stroke patients have concomitant myocardial infarction (MI) and this can lead to a poorer outcome. The diagnosis of acute MI has been greatly enhanced by measurement of serum troponin. Several mechanisms may be responsible for raised concentrations of cardiac troponins after stroke: primary myocardial damage with secondary cardioembolic cerebral ischaemia, primary cerebral ischaemia with secondary myocardial injury attributable to central activation of the sympathetic nervous system or co-existing heart failure. Previous studies have shown conflicting results with regards to the incidence of troponin in stroke and subsequent outcomes. We aimed to study troponin (TnT) as an independent predictor of poor outcome after stroke.
Methods: Enrolment of consecutive stroke admissions was carried out and TnT measured within 72 h of event. Raised TnT was defined as >0.03 μg/L. Poor outcome measures (rankin score > 2 and death) were analysed at 3 months. Mann Whitney *U* or chi square analysis was performed depending on the characteristics of each variable. Logistic regression analysis was used to eliminate confounders.
Results: 17/152 (11.2%) patients had raised TnT. Only one patient had electrocardiograph (ECG) changes consistent with acute MI. Age ($P = 0.007$), low Glasgow coma scale ($P = 0.000$), high National Institutes of Health Stroke Scale (NIHSS) score ($P = 0.002$) and haemorrhagic stroke ($P = 0.01$) were associated with a raised TnT. Raised TnT was independently associated with a poor outcome at 3 months ($P = 0.039$), the incidence of further myocardial infarction ($P = 0.001$) and death ($P = 0.000$).
Conclusion: We conclude that regardless of aetiology, the presence of troponin confers an additional risk of death and dependency after stroke and this may influence the way we perform rehabilitation on these patients and discuss prognosis.

0102
Rehabilitation and stroke research

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Stroke is a disease which disproportionately affects older people. The advent of stroke unit care, with its guiding principles of expertise, interdisciplinarity, and emphasis on both acute and chronic aspects of stroke disease, has been one of the biggest breakthroughs in stroke medicine in recent times. In addition, thrombolysis, given in a timely manner has significant effects on morbidity, mortality, and healthcare economics for a minority. However, stroke is also a chronic disease with acute events, and concern has been raised that research and practice in stroke is unduly focussed on hyperacute care with a relative myopia for the wider aspects of care [1].
Method: We reviewed all published abstracts from the European Stroke Conference 2008 for their acuity, period of observation, and content. We categorised them as hyper acute (<3 days), acute (acute < 28 days), or non acute (>28 days) according to the time focus of their study.
Results: Of 787 abstracts from many countries, 44% hyper acute, 19% acute and 37% non acute. Most non-acute studies related to stroke risk factors, scientific experiments and cognitive issues while rehabilitation accounted for just 11 of 295 abstracts. Most hyper-acute studies related to reperfusion treatments as well as baseline blood biomarkers indicative of the presence of acute ischaemic stroke and of outcome severity.
Discussion: stroke research is currently predominantly focussed on reperfusion with a significant paucity of research into interventions and support in the post-acute phase. Although the importance of acute/hyperacute treatment is unquestioned, the majority of stroke patients will require rehabilitation, support and secondary prevention as both acute and chronic interventions, and an increased emphasis on a holistic approach to stroke treatments would more closely match the known needs of those affected by stroke.
References: (1) O'Neill D et al. (2008) BMJ 336(7642):461.

0103
Analgesic prescribing practices in acute hospital in-patients

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The aim of this audit was to document analgesia prescribing practices in an acute in-patient population. Prescribing patterns of analgesia and their side effects were documented.

Medication prescription charts of 98 patients from acute medical, surgical and orthopaedic wards were examined. Age, gender and concurrent diagnoses were noted. Creatinine was recorded and glomerular filtration rate calculated using the modification of diet in renal disease (MDRD) formula. Analgesics were classified according to the WHO pain ladder. The method of administration, frequency and duration of prescription was noted. Patients and staff were interviewed to assess side effects of the analgesics prescribed. Associated prescribing of laxatives and anti-emetics was noted.

Ninety-eight patients (59% male; 41% female) with a mean age of 62.3 ± 17 years were assessed. These patients were surgical (48%), medical (28%), orthopaedic (20%) and oncology/haematology (4%). The most common indications for analgesics were fractures or joint pains, ulcers, abdominal pain and malignancy. The average glomerular filtration rate was 84.2 ml/min in males and 78.3 ml/min in females (range 0–150 ml/min). 86% of all patients were prescribed one or more analgesics. Of these 89% were prescribed a step one agent, 65% a step two agent and 46% a step three agent. The average number of analgesics prescribed was 2.3 (range 0–7). 62% of analgesics were prescribed as regular medications and 38% prescribed in the 'as needed' section. Side effects included nausea (36.5%), vomiting (10.8%), constipation (27.7%), drowsiness (24%), confusion (18.5%) and hallucinations (1.2%). 39% were co-prescribed laxatives and 47% were co-prescribed anti-emetics.

Analgesic prescribing is highly prevalent among inpatients. 39 patients (39.8%) were prescribed three or more analgesics. Significant side effects were reported as above. The importance of appropriate analgesic prescribing is highlighted. Review of medication and their side effects is essential.

0104
Rates of hospital acquired infections amongst hospitalized nursing home patients

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Meticillin resistant staphylococcal aureus (MRSA) and *Clostridium difficile* (*C. difficile*) amongst hospitalized patients is increasing annually, despite enhanced awareness amongst health care professionals and the public. No national data are available on rates of MRSA colonization. The aim of this study was to assess the contribution of patients from nursing homes to the overall burden of MRSA and *C. difficile* in hospitalized patients as this is unknown.

A retrospective review identifying cases of MRSA and *C. difficile* from HIPE data and the Laboratory database in our institution in 2008 was undertaken.

Overall 243 cases of MRSA were identified. Of the 243 cases, 54 (22.2%) were admitted from nursing homes. Of the 54 nursing home patients, 50 (92.6%) had MRSA on admission and 4 (7.4%) acquired MRSA in hospital. 42/54 (77.8%) had MRSA identified from screening sites only (nose, perineum); 11/54 (20.4%) had MRSA isolated from other non-invasive sites and 1/54 (1.9%) of cases were isolated from blood. 14/54 (25.9%) patients died during their admission. 10/54 (18.5%) had at least one further admission in 2008. Overall 240 patients admitted from nursing homes through the emergency department in 2008 were swabbed on admission in adherence to local policy. 85 cases of *C. difficile* were isolated in 2008 and 12/85 (14.1%) of these cases were in patients admitted from nursing homes. 7/12 (58.3%) patients were concomitantly identified as having MRSA and 5/12 (41.6%) of these patients died. The average time to isolation of *C. difficile* from admission was 11 days.

Overall 54/240 (22.5%) of patients admitted from nursing homes had MRSA. The majority of MRSA was identified from non-clinical sites indicating colonization. As nursing home patients are swabbed for MRSA on admission this could account for a falsely elevated figure. This study enhances the argument for all patients being swabbed on admission to hospital to identify the true incidence of MRSA.

0105
Response to bisphosphonate use in coeliac associated osteoporosis

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Introduction: Coeliac disease is associated with osteoporosis. Gluten-free diet improves but does not normalise bone mineral density. Standard treatment of osteoporosis in coeliac disease is with oral bisphosphonates, vitamin D and calcium. Oral bisphosphonates are poorly absorbed, especially in coeliac disease. We evaluated the efficacy of oral bisphosphonate use in patients with known malabsorption.

Methods: We prospectively recruited 57 patients (44 female) with known ($n = 50$) or newly diagnosed coeliac disease from our gastroenterology and bone clinics. We collected clinical information including fracture history and osteoporosis treatment using a questionaire and compared those on treatment for osteoporosis with those not on treatment.

We analysed serum for parathyroid hormone, 25-hydroxyvitamin D, calcium, alkaline phosphatase, and markers of bone turnover; procollagen type 1 amino peptide (P1NP), C-telopeptide (CTX) and osteocalcin. tTg was used as a marker of coeliac disease activity.

We gathered DXA scan information on 45 patients.

Results: CTX, osteocalcin, P1NP, urinary calcium and T scores at the lumbar spine and neck of femur were not significantly different in the group on bisphosphonate treatment ($n = 28$) versus those not on treatment ($n = 24$). Vitamin D levels were significantly higher in the treated group ($P < 0.0001$). Mean tTg was significantly higher in the untreated group (12.67 vs. 4.63).

Discussion: Non-suppression of CTX and P1NP suggest poor absorption of oral bisphosphonates in patients with coeliac disease, including those with no symptoms and a normal tTg. Vitamin D is absorbed from the terminal ileum which is often spared in coeliac disease. This explains why we found higher vitamin D levels in the treatment group and suggests good compliance with therapy.

Patients with coeliac associated osteoporosis need closer monitoring. Markers of bone turnover should be checked 6 months following commencement of oral bisphosphonates and non-responders should be considered for parenteral treatment.

0106
Vertebral fracture prevalence is high among osteopenic patients

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Refracture rate after vertebral fracture is up to 20% at year one and brings with it significant morbidity. An osteopenic patient with a vertebral fracture is more likely to refracture than an osteoporotic patient with a t score of -4.0 and no fracture. Despite this most DXA scanning units do not routinely look for vertebral fractures with lateral vertebral imaging. Though both osteoporotic patients and osteopenic patients with a clinical fracture are treated with antiresorptive agents, it is possible that equally important, asymptomatic vertebral fractures are going undetected in osteopenic patients.

We analysed DXA T scores and lateral morphometry of all patients presenting to St. James's Hospital during a 3 year period. Vertebral T score was taken from two fracture free sites.

From a total of 3,114 patients, 519 vertebral fractures were detected using lateral morphometry. The patient's median age was 79.5 years. 81% were female with a mean BMI was 24.75. Of the 519 fractures 300 (57%) were osteoporotic, 138 (27%) were osteopenic while 79 (15%) had a normal T score. Separate analysis of the osteopenic group revealed that 55 (39.8%) had more than one fracture while 22 (16%) had more than 2 fractures. 73 (52%) patients had at least one severe fracture. A wedge fracture was seen most commonly. L1 was the most common site of fracture, which occurred in 21% of osteopenic patients while T12 and L2 occurred in 20 and 18%, respectively.

Osteopenic patients account for 27% of vertebral fractures at this hospital. Of these 39.8% fractured at more than one site. Lateral Vertebral Imaging is an invaluable tool to ensure we treat this high risk group of osteopenic patients with a strong propensity for further fractures.

0107
Speech and language therapy service provision for people with dementia in leinster

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The aim of the study is to investigate current speech and language therapy (SLT) service provision for people with dementia in the Leinster region and to gain insight into the perception of SLT managers on the adequacy of these services. The nature and availability of SLT services for people with dementia in Ireland is unknown. Reports suggest that dementia services are inadequate and community based, multidisciplinary services are required. O'Shea (2007) also highlights the growing population with dementia in Ireland, with an expected rise of 69,712 people between 2002 and 2036. The beneficial role of SLTs with this client group is emphasised in the literature.

A non-experimental survey design using a specifically designed questionnaire for data collection was employed. SLT managers working in the Leinster region were identified and invited to participate in this study. Surveys were posted to all 43 managers.

Thirty-five managers responded. Findings show that less than two thirds (63%) of respondents provide services to people with dementia and only 26% provide services to nursing homes. Services provided to people with dementia are primarily hospital based, with a greater focus on swallowing impairment rather than communication disorders. The majority (89%) of SLT managers are dissatisfied with current services.

Current SLT services for people with dementia in Leinster are inadequate. Future planning, recognising population growth and meeting needs is required. SLTs must engage in research demonstrating the efficacy of our role with this client group, enabling SLTs to act as advocates for people with dementia and justify the need for a better service.

0108
Methicillin resistant *Staphylococcus aureus* and *Clostridium difficile* in hospital patients awaiting extended nursing care

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Background: At the same time as many older persons are increasingly reliant on accessing extended nursing care (ENC) through the acute hospital sector, MRSA and *Clostridium difficile* infection are becoming more prevalent in our hospitals. Significant risk factors such as prolonged hospital stays, multiple co morbidities, and more antibiotic courses may place this patient group at an increased infection risk by these pathogens. The evidence base to support or refute this statement is however scant. This study compares (1) prevalence data of MRSA and *C. Difficile* in this cohort and the general hospital in-patient population in St. Vincent's University Hospital (SVUH) in 2007, (2) average length of stay (LOS) and (3) number of ward moves in our cohort.
Methods: Established SVUH databases for microbiology and patients awaiting ENC during 2007 were cross-referenced retrospectively. SVUH labs and pas systems were used to gain additional information.
Results: There were 186 patients awaiting ENC in SVUH in 2007. Five were excluded due to lost information. Of the remaining 181 patients, 42 (23.2%) cultured MRSA and 26 (14.4%) grew *Clostridium difficile*. The average LOS awaiting ENC placement was 66 days. Average LOS for general hospital population was 4.1 days. Results regarding the prevalence of *Clostridium difficile* and MRSA are to be discussed.
Conclusions: These figures are important both to guide the information that is given to patient and their families when discussing ENC and also for infection control as it quantifies the extent of colonisation and infection of MRSA and *C. difficile* in this population.

0109
People with aphasia training medical staff in communication skills: an audit

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Aphasia occurs in approximately 20–30% of stroke survivors [1] and can result in chronic communication difficulties. People with aphasia are experts in their disorder and are valid contributors to service provision and training.

The aim of this project was to establish if training for medical staff can (a) increase awareness of the impact of aphasia, and (b) improve medical staff's communication with people with aphasia. Three members of the medical team were involved, each completed a specifically designed questionnaire pre- and post-training. Pre- and post-measures were compared to establish any change in aphasia awareness.

Training involved two parts; (1) a one hour education session with a speech and language therapist (SLT), and (2) having a conversation with a person with aphasia, a trained conversation skills analyser. Following the conversation the trainer with aphasia scored each member of the medical team on a number of communication skills, e.g. ease of conversing, use of written language, appropriate turn taking, etc. Feedback forms were given to the staff members. Additionally, one member of the medical team was video recorded communicating with a trainer with aphasia pre- and post-training. These conversations were rated by the trainer with aphasia and analysed by the SLT. This was carried out to establish if any improvements in communications skills resulted from the training.

Our findings show that the medical staff rated themselves as being 33% more comfortable and 44% more skilled in communicating with a person with aphasia, 38% more skilled to access the person behind aphasia, and have a 23% greater understanding of living with aphasia. Also, the recorded conversations rated by the trainer with aphasia pre- and post-training showed improvements in all areas of conversation rated, and the overall conversation rating improved 2 points, from average to excellent.
References: (1) Williamson M (2006) Communicating quality 3, 2nd edn. RCSLT, London.

0110
Thrombolysis in a growing stroke service

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Introduction and aims: Intravenous Tissue Plasminogen Activator is licensed in the United States for treatment of acute ischaemic stroke since 1995. Prior to licensing in Europe in 1999 we

conducted a prospective study of 100 patients admitted to our stroke service to determine potential for intervention under the NINDS protocol. A 24/7 consultant-led thrombolysis service was established in our 600 bed tertiary referral hospital in 2008. We sought to determine how well predicted activity matched the reality of our present service.

Methods: Datasets from 1999 and 2008 to present were analysed retrospectively. In 1999 we assessed suitability for thrombolysis using the NINDS trial criteria. In 2008/2009, numbers thrombolysed are used to equate with numbers eligible.

Results: The 1999 study showed only 6% of ischaemic strokes presenting to ED would be potentially treatable: one thrombolysis every 45 days. If time of onset was removed as a factor, only 21% would be eligible with other exclusions. In utopian scenario it would mean three patients for thrombolysis every 30 days. There was also a high 20% primary ICH rate.

Our present figures show an average of 195 stroke patients per year. Since the initial study, rates of haemorrhage have fallen from 20 to 12% in 2008/2009.

In 2008 there were 163 ischaemic strokes, 35 referred for thrombolysis of which 9 were thrombolysed (5.5%)—one thrombolysis every 41 days. To end of May 2009, 80 ischaemic strokes were admitted, 47 referred acutely and 7 thrombolysed (8.8%)—one thrombolysis every 21 days. No patient not referred acutely for thrombolysis met full eligibility criteria.

Discussion: Our initial study 10 years ago proved accurate in predicting acute stroke thrombolysis activity, despite a fall in haemorrhagic stroke. Greater awareness of, and the acute response to stroke together with an extended time window should improve thrombolysis rates.

0111
Effect of Ongoing Education on Stroke Awareness in Frontline Staff

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Introduction and aims: Thrombolysis has been shown to be beneficial in acute ischaemic stroke up to 4.5 h after onset. Failure to recognise stroke symptoms as an emergency can delay treatment. Studies have shown that for those reaching emergency departments early, there remain significant delays. Establishing a good stroke service means including stroke awareness training of frontline staff. A consultant-led thrombolysis service was established in our 600 bed tertiary referral hospital in 2008. Initially on an ad hoc basis and formalised in the latter half of the year with introduction of regular staff training in structured clinical assessment (ROSIER), quarterly lectures on stroke, poster placement in the emergency department and establishing a single point of contact via bleep system.

Methods: In order to correct for any impact the increased thrombolysis time window may have had on referral pattern we analysed our database for the last quarter of 2008 and the first 5 months of 2009 to determine the effect if any, of these educational measures.

Results: In the first ¾ of 2008, 19 patients were referred for averaging one referral every 14 days. In the last quarter 16 were referred, 1 every 6 days with a 19% thrombolysis rate. In 2009 to date there have been 47 referrals, 1 every 3 days with a 15% thrombolysis rate.

Discussion: Number of referrals significantly increased over the period of formalisation of the service and education process. Although the percentage thrombolysed has decreased the number of non-strokes being assessed is low and while many are not eligible for thrombolysis they still benefit from more rapid access to the acute stroke service. Fast response to stroke reduces the risk of death and disability. This cannot be achieved without a responsive system. Ongoing education of those dealing with stroke significantly increased awareness in our institution.

0112
Home-based memory rehabilitation programme for persons with mild dementia

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Introduction: In 1994, a Memory Clinic was established as a centre of excellence for the treatment of Alzheimer's disease and other dementias. However, there was no rehabilitation service to complement the new anti-dementia drugs. It was proposed to combine acetylcholinesterase inhibitors with a customised Memory Rehabilitation Programme that would teach this patient group to compensate for the memory difficulties that were now affecting their everyday function with a consequent rise in caregiver burden. Therefore, a service was established in January 2007 to provide Cognitive Rehabilitation in the area of memory for persons with early stage dementia, and support for their caregivers.

Method: A randomised controlled single-blind trial of this Memory Rehabilitation Programme was carried out to produce evidence of its benefit. Following this, a full Memory Rehabilitation Service was inaugurated in January, 2007. A medically-led, multi-disciplinary service has now evolved with the Occupational Therapy-led Programme at the core of this service.

Results: Patients from the Memory Clinic with a diagnosis of mild Alzheimer's disease or other dementias are now receiving a customised, home-based Memory Rehabilitation Programme, which teaches them strategies to compensate for memory difficulties that are affecting their instrumental activities of daily living. This programme also aims to provide support and knowledge to the caregivers to enable them to cope with this progressive condition.

Discussion: An important aspect to this Programme is the on-going rehabilitation and support to both the patient and the caregiver through three-monthly follow-up home-visits by the Specialist Occupational Therapist. To date, there is evidence of strategies to compensate for memory difficulties being used two years following completion of the Memory Rehabilitation Programme.

0113
Nursing home admissions to an acute medical service: patterns of referral, readmission rates and mortality

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Introduction: Emergency admission and management of frail elderly patients from nursing homes is common. In hospital mortality appears high with appropriateness of admission often questioned. We reviewed medical admissions from nursing homes to a district general hospital over a 3 month period.

Methods: Retrospective study of consecutive acute medical admissions between 1st February and 30th April 2009. Baseline demographics, source, time, reason for referral and discharge

diagnosis was recorded. Additional information included in-patient mortality, length of stay and re-admission rates. Nursing home patients were identified from review of daily admission sheets, confirmation of nursing home residence and review of medical notes.
Results: There were 55 nursing home patients admitted (64% female), accounting for 5.6% (55/988) of acute medical admissions. Case notes were available for 51 patients. Median age 83 (IQR 80.91), 33% of admissions came from out of hours GP, 31% own GP, 26% accident and emergency and 10% other. 53% of patients were admitted outside normal working hours (Monday to Friday 09:00 to 17:00). Commonest reasons for referral were shortness of breath (24%) and reduced oral intake (22%). Chest infections accounted for 37%. Median length of stay was 7 days (IQR 5, 10). 10% of patients died or were discharged within 24 h. In-patient mortality was 22%. 33% of patients were readmitted within 28 days of previous hospital discharge, with 47% having at least one previous admission in the preceding 6 months. End of life issues, excluding specific resuscitation status was documented in 22% of patients.
Discussion: The majority of nursing home patients are admitted to hospital outside normal working hours. Commonest source of referral is the out of hour's service. In-patient mortality is high with one third of patients discharged being readmitted within 28 days. End of life discussion is poor. Inappropriate admissions are felt to occur. Greater involvement is needed between hospital and primary care.

0114
Frailty outcomes in older people (FROOP)

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Introduction: Frailty is a relatively new concept referring to diminished resistance to stressors and vulnerability to adverse outcomes (American Geriatrics Society 2004). Various measurement models have been proposed, including rules-based definitions, the summation of deficits, and clinical judgment scores (Rockwood 2005). Recently an Italian group identified nine independent predictors of adverse outcomes associated with frailty (Ravaglia 2008). Our aim was to see if the clinical frailty score (CFS) correlated with Ravaglia's predictive tool and with the rules-based geriatric status scale (GSS).
Methods: We performed an analytical cross-sectional study on a cohort of 27 older patients being discharged home from an acute geriatric ward. Sociodemographics, functional state, cognition, nutritional status, co-morbidity, health attitudes, exercise habits, history of falls, incontinence and sensory impairments were recorded. The GSS (0–3), CFS (1–7) and a modified version of Ravaglia's frailty score (RS) for each participant was documented (Tinetti Gait and Balance assessment was substituted with the timed up and go test).
Results: The median age of participants was 79 years, (51.8% female and 40.7% living alone). 81.5% of patients had a CFS > 3 (55.6% CFS 4–5, 25.9% CFS 6–7). 92.6% scored ≥ 3 on the modified Ravaglia's score. 51.9% had GSS of ≥ 2. Of those with a CFS of ≤ 3, the median RS was three and the median GSS was 0. Of those with a CFS of 4 or 5, the median RS was 4 and the median GSS was 1. Of those with a CFS of 6 or 7, the median RS was 7 and the median GSS was 2.
Discussion: Although a larger study is needed to examine this further, our results suggest that the CFS correlates well with Ravaglia's score and the GSS. Clinical judgement seems to be as robust a measure of vulnerability as the more detailed measurements.

0115
Falls prevalence in an elderly Haemodialysis population

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Introduction: Renal registry data reflect the increasing proportion of haemodialysis patients older than 65. There is a high incidence of falls in this population. This study was designed to determine falls prevalence and risk factors within our haemodialysis patients.
Methods: We identified all patient's aged 65 or greater receiving haemodialysis within our hospital dialysis unit. Patients were approached to participate in a falls questionnaire during dialysis for two consecutive days in May 2009. Baseline demographics, falls history, number of falls in the preceding 12 months and falls awareness were recorded in a standardised form. Past medical history and current drug prescription were obtained from electronic charts.
Results: 57 patients were identified of which 50 patients agreed to participate. Median age 73 years (range 65–90), 66% of patients were male. Median period on haemodialysis for patients interviewed was 37 months (range 1–108). 34% (17/50) reported at least one fall in the preceding year, with 20% having two or more falls. Maximum number of falls in any individual patient was six. The median number of medications in the fallers group was 10 (IQR 8, 14) versus 8 (IQR 7, 11) in the non-fallers group (P = ns). Fallers were more likely to be on CNS suppressants (70 vs. 58%), with 23.5% of fallers prescribed warfarin. Previous fracture reported in 41% of fallers and 18% of non-fallers. Fallers were more likely to be using a walking aid (83 vs. 33%; $P = 0.001$) and suffer anxiety (65 vs. 24%; $P = 0.005$). Only 1 of 17 patients who reported falls had ever been referred for falls assessment.
Discussion: Our study shows a high prevalence of falls in elderly haemodialysis patients. Fallers were more likely to use walking aids and suffer from anxiety. Previous follow-up for falls assessment was poor. Elderly haemodialysis patients provide an ideal population for targeted interventions for falls prevention.

0116
Stroke thrombolysis provision in a district general hospital

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Introduction: Intravenous alteplase is a recognised treatment for acute ischaemic stroke. Many barriers to thrombolysis exist, limiting its widespread provision. We examined the impact of a phased implementation stroke thrombolysis protocol in a district general hospital.

Methods: The hospital serves a serves a rural population of 98,000 with 180 stroke admissions each year. Baseline data was collected for the period April to June 2008, identifying all acute stroke admissions to inform local guidelines. Interested individuals from nursing, medicine and radiology developed a clear protocol for the identification, triage and management of stroke patients including those for potential thrombolysis. Educational sessions were undertaken and continue on a regular basis. The impact of a limited thrombolysis protocol (Monday to Friday 09:00–17:00 and discussion with stroke consultant outside hours) was examined by collecting data on all stroke admissions prospectively between January and March 2009. Baseline demographics, referral pathway, eligible patients and numbers treated were included.
Results: For the period April to June 2008, there were 31 strokes identified (55% female). Three patients (10%) were considered for stroke thrombolysis, but subsequently excluded on the basis of stroke severity and timing. Between January and March 2009, there were 38 stroke admissions, involving 37 patients (51% female). 11 patients were referred for potential thrombolysis with 4 receiving intravenous alteplase and one referred for successful mechanical clot retrieval. Patients were excluded on the basis of stroke severity, refractory hypertension or haemorrhage. Only 2 patients were assessed outside normal working hours. 13.2% (5/38) of patients received intervention.
Discussion: Stroke thrombolysis is feasible within a district general hospital. The development of a stroke thrombolysis protocol, increased awareness and continuous education among staff has seen the provision of an effective thrombolysis service in a rural area. The service continues to evolve with the planned phased implementation of thrombolysis 24/7.

0117
Audit comparing length of hospital stay, readmission rates and mobility levels in older and younger medical inpatients

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Introduction: There is a perception that older patients have lengthy hospital admissions and recurrent readmissions compared with younger patients.
Method: Consecutive and unselected medical admissions were followed for a period in April/May 2009.
Results:

- 169 patients. Median age 70. Mean length of stay (LOS) 6.31 days (median 5 days, range 1–28).
- 70 (41%) were under 65 years: mean LOS 5.5 days (median 5 days).
- (59%) were over 65 years: mean LOS 6.89 days (median 6 days).
- 7 (4%) were over 90 years: mean LOS 4.7 days (median 6 days).
- Readmission rate (past month): 10 (14%) of under 65s, 19 (19%) of over 65s.
- 4/99 of older patients had delays in discharge by waits for convalescence, care packages or long term care.
- Many younger patients were waiting in-patient investigations (e.g. cardiac tests) and were considered well enough for discharge once investigations completed.
- 45/169 had documented deterioration in mobility during admission: 7/70 (10%) under 65s and 38/99 (38%) of over 65s.
- 38 patients were regularly seen walking independently to the hospital shop: 28/70 (40%) under 65, 10/99 (10%) over 65.

Discussion: The results are unlikely to be representative of a full year. Although older patients have longer average LOS and readmission rates compared to younger patients, the differences are not as large as possibly thought. Physical deterioration occurs more frequently following hospitalisation for older patients. In our study, once an older person became well enough for discharge there were usually few delays. We felt that many of the younger patients could have been safely discharged if there was rapid access to diagnostics. Patients waiting for investigations are generally not included in our hospital delayed discharge data, but may account for greater cumulative delays in discharge than waits for Nursing Home placement.

0118
Management of diabetic nephropathy in older adults with type 2 diabetes attending diabetic outpatients

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Introduction: Diabetic nephropathy (DN) is the commonest cause of end stage kidney disease (ESKD) in developed countries and the mean age of patients is 65 years. Close control of diabetes mellitus (DM) can delay its progression. Introduction of an outpatient proforma could aid compliance with accepted management and we chose to assess this in an outpatient setting by auditing according to the updated NICE guidelines on type 2 DM.
Methods: Using the HIPE system 126 type 2 adults > 65 years attending diabetic outpatients over a 1 year period were identified. 21 patients were miscoded and four charts were unavailable leaving 101 for auditing. Chronic kidney disease (CKD) stage was defined by estimated glomerular filtration rate (eGFR) calculated from the Cockcroft & Gault formula. A random 10% of charts were re-audited following introduction of the diabetic outpatient proforma.
Results: The median age was 72 years (range 65–85). 54% were male and median years diagnosed with DM was 9 (range 1–36).9% had documented DN. 42% of all patients had raised creatinine and 41% had elevated albumin creatinine ratio (ACR).One half of those with raised ACR failed to achieve target BP control. 21% had moderate to ESKD (stage 3–5), 39% of whom had a normal creatinine. On review of medications 74% of all patients currently received metformin (28% defined as stage 3 or 4 CKD).78% were receiving ACEI/ARB's. For 37/39 not receiving ACEI/ARB at maximum dose there was no contraindication.
NICE guideline (May 2008). % Compliance. % After proforma.

1. ACR requested 1/year. 60%. 70%.
2. eGFR and Creatinine 1/year. 1 and 99% respectively, 0%, 100%.
3. Raised ACR repeated $< 4/12$. 14, 0%.
4. Referral (if appropriate) to Renal medicine. 61, 100%.
5. ACE-/ARB titrated to maximum. 54%. 60%.
6. Target BP ($< 130/80$) if raised ACR. 49%. 60%.

Discussion: CKD is common among older Irish type 2 diabetics. We identified a deficit in our management of DN relating to medication prescription and BP control. A standardised outpatient diabetic proforma can improve awareness and adherence to DN guidelines.

0119
Comparison of vascular risk factors in dementia patients: can they help predict dementia subtype in an Irish population?

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Introduction: Dementia classification has traditionally separated vascular (VaD) from Alzheimer's Dementia (AD). Histopathological assessment shows considerable overlap in the hallmark pathological features supporting a vascular disease burden and a move to including a mixed dementia subtype. However, the exact role vascular risk factors (RFs) play in AD is uncertain.
Methods: Patients with dementia attending an age care evaluation unit were identified from computerised clinic summaries over a 3 year period. 97 patients with a diagnosis of dementia (MMSE < 24) then underwent chart review. Specific dementia subtype was determined by consultant Geriatrician clinical judgement supported by radiological findings. Vascular RFs (History of hypertension, smoking, diabetes, hypercholesterolaemia and atrial fibrillation) were collected for those with AD or VaD.
Results: 32/97 (33%) were diagnosed as AD, 27/97 (28%) as VaD. Diagnosis could not be determined for 26 patients. Eight had stroke, two Parkinson's disease, one Lewy body and one normal pressure hydrocephalus related dementia. The mean age was 78 years for both AD and VaD patients with a mean MMSE of 15.3 and 16.6, respectively. The mean number of cardiovascular RFs was 1.65 for the AD and 2.3 for the VaD group. 60% of both had 2–3 RFs. Hypertension was prominent with 60% of AD patients and 80% of VaD patients currently receiving treatment. Regression analysis showed no significant difference between mean number of cardiovascular RFs between the groups but the odds ratio for individual RF's showed patients with VaD were more likely to have a documented history of each of the individual RF's.
Discussion: This study points to the prominence of cardiovascular RF's amongst older adults with dementia in an Irish population. Given the growing recognition of cardiovascular processes in the aetiology of dementia this further supports close cardiovascular RF evaluation and modification in those with evolving cognitive impairment, including those with a probable diagnosis of Alzheimers disease.

0120
A patient data analysis information system in geriatric medicine

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Data analysis information systems have become routine in many businesses to capture data for both regulatory and business intelligence purposes. However, clinical healthcare has tended to resist these industry-transforming technologies. Healthcare experts, policymakers, and consumers consider health information technologies to be critical in transforming the healthcare sector. We report on the development of a patient data analysis information system (PDA-IS) for a Consultant Geriatrician working across two hospitals.

The prototype PDA-IS was developed over a five month period from October 2006 to March 2007. The technical design of the application followed a five-tiered architecture. Sociodemographic data, diagnostic details, dependence level and cognitive state are recorded daily on this system since April 2007. Ongoing interviews take place between the academic development team and the end-user to establish the range of benefits obtained and the need for further development. In 2008, the system underwent further development to incorporate a digital dashboard, predictive analytics and real-time query visualisation. The PDA-IS currently captures patient data for acute in-patients in two hospitals, out-patients, a medical rehabilitation unit, and consultations in two hospitals. This data can be analysed separately or together.

The PDA-IS provides functionality in terms of storing and analysing high quality clinical patient data for the purposes of more informed and accurate service planning. The digital dashboard allows real-time visual monitoring of patient data and drill-down in-depth analysis capabilities. Using predictive analytics there is a possibility of forecasting bed-day utilisation, staff requirements and resource allocation. Overall and most importantly, these benefits combined allow the user to supply a more efficient and effective level of healthcare to patients.

The vast and growing amount of healthcare data requires openness to new analytical possibilities from clinicians as well as information systems researchers. The PDA-IS design has the flexibility to be extended and to run on a broader scale.

0121
Clostridium difficile infection in the oldest old

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Epidemic *Clostridium difficile* infection (CDI) in recent years has refocused attention on the morbidity and mortality associated with this condition. CDI has always affected older adults but recent work suggests that the over 80 s are particularly vulnerable to poor outcomes and may require aggressive treatment strategies.

We conducted a prospective study of all cases of CDI in 2 university teaching hospitals over a 2 year period from 2007 to 2009. We collected information on baseline patient characteristics, comorbidity (Charlson score), underlying disease severity (Horn's index) and risk factors for CDI. All patients were followed for 60 days. We documented markers of CDI severity, treatment, response to treatment, recurrence rates and mortality.

We recruited 149 consecutive cases, 63 men and 86 women. Median age was 77 years (range: 32–97); 64 (43%) cases were aged 80 or over. Compared to younger patients, those aged >80 had significantly lower median BMI (19.8 vs. 22.5, $P = 0.04$), Barthel (30 vs. 40, $P = 0.02$) and MMSE scores (17 vs. 23, $P < 0.0001$). They

had lower Horns index scores (2.5 vs. 3, $P = 0.05$) but no difference in Charlson scores. There were no differences in CDI risks apart from less immunosuppression in the over 80 s (3.3 vs. 14.8%, $P = 0.02$). They complained of significantly less pain than younger patients (18.6 vs. 33.3%, $P = 0.05$). In the group aged >80, recurrence rates were higher (21.9 vs. 7.1%, $P = 0.009$) and they were less likely to be discharged home (27.5 vs. 44%, $P = 0.04$) but were not significantly more likely to die, fail treatment or be discharged to a nursing home. On multivariable analysis age greater than 80 remained significantly associated with recurrence after controlling for BMI, Barthel, MMSE and Horns index.

In our cohort, we found that patients aged > 80 acounted for a significant proportion of all cases of CDI. These patients had less severe underlying illnesses but were often frail, dependent and cognitively impaired. Although there was no difference in mortality rates compared to younger patients, the burden of disease in this age group was significant as recurrence rates were higher and they were less likely to be discharged back to their own home.

0122
Doctors knowledge of medical legislation: are we breaking the law?

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Introduction: It is impossible to practice medicine safely without an informed understanding of the laws governing it. For a subject that permeates through every medical speciality the time and weight given to the teaching of legal medicine is alarmingly small. We decided to examine doctors and allied health professionals' (AHP) knowledge of areas of Irish law relating to clinical practice.
Methods: We compiled 24 questions covering capacity, wardship, power of attorney, advanced directives and do not resuscitate orders. Respondents were asked to answer true, false or do not know. The questionnaire and correct answers were discussed with a Barrister at Law. The questionnaires were self administered prior to the start of the Grand Round Hospital meeting.
Results: 44 questionnaires were completed. Breakdown of the respondents by speciality was as follows: medicine (13/44), surgery (13/44), AHP (7/44), medical students (7/44) and nursing. (5/44).Only one questionnaire was answered entirely correctly (by a medical physician).72% of respondents believed incorrectly that Irish law defines mental capacity and its assessment. 55% incorrectly answered that dementia precluded ability to consent. 13/44 incorrectly said MMSE scores correlated well with testamentary capacity. Breaking down this by speciality: surgery6/13, students 4/13 and medicine nursing and AHP contributing one each. 29/44 answered correctly that for ward of court patients consent is signed by the High Court. The remainder answered that consent could be signed by patient (4), next of kin (4) or a doctor (7). 22/44 incorrectly answered that advanced directives are recognised in Irish Law. 15/44 answered incorrectly and a further 17/44 "did not know" that cognitive testing was required by law prior to making a will. Across most questions the speciality of medicine scored better than their counterparts in surgery, nursing and AHP's.
Discussion: This study highlights the deficiencies across the health professional in our knowledge of Irish medical law. This study highlights the need for ongoing obligatory participation in legal medicine workshops throughout our professional lives.

0123
Withdrawn

0124
Census survey of inappropriate acute and rehabilitation bed occupancy by older patients awaiting long-term care

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Due to inadequate numbers of long-term care (LTC) beds, older people who no longer require in-patient treatment but are unable to return to community dwelling, may spend prolonged periods of time in hospital while awaiting accommodation in a suitable facility.

On 19th May 2002, a census survey was sent to all geriatricians in Ireland to determine the proportion of acute and rehabilitating patients under their care who were waiting in hospital for a LTC bed. On 27th May 2009, the survey was repeated.

68% of geriatricians participated in the initial survey, which found that 24% of acute beds under geriatric care were occupied by a patient waiting to transfer to LTC. Another 25% of acute beds were occupied by patients waiting to transfer to rehabilitation, while 31% of those rehabilitation beds were occupied by a patient waiting to transfer to LTC. Seven years later, 63% of geriatricians responded to the repeat survey. On that day, 18% of acute beds under geriatric care were occupied by patients waiting for LTC. Less patients were waiting for rehabilitation than in 2002, but this may reflect reduced listing of patients for rehabilitation rather than extra rehabilitation places. 17% of rehabilitation beds were still occupied by patients waiting for LTC. On both occasions, large urban hospitals were worse affected than rural-based hospitals.

The pressure for rapid turnover of patients in acute hospitals has heightened in recent years with "winter" beds crises and overflowing emergency departments. Yet this study demonstrates that just as before, a lack of appropriate community supports and appropriate long-term care places leads to bottlenecks in the flow of older patients through acute and rehabilitation care. This denies patient's access to timely rehabilitation, exposes them unnecessarily to hospital-acquired infection during their prolonged stay, and results in inefficient utilisation of costly acute hospital beds.

0125
Audit of carotid doppler requests

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Carotid Doppler Ultrasound plays major role in investigating patients with TIA and stroke to assess severity of stenosis and identify candidates for carotid endarterectomy (CEA). Current guidelines highly recommend carotid endarterectomy for symptomatic patients with high grade stenosis of 70% – 99% within 2 weeks of presentation, taking into account their life expectancy, co-morbidity(s) and functional status. We audited the appropriateness of radiology requests to

assess sufficiency of clinical data provided on the form for carotid Doppler imaging in a district general hospital serving a population of 125,000.

A retrospective audit of radiology request forms between July 2007 and July 2008 were studied using a standardized form the following were recorded; patient demographics, clinical presentation, examination findings, risk factors, duration of symptoms, prior CT brain results. The interval between time of presentation, date of carotid Doppler studies and the extent of stenosis were studied.

146 carotid Doppler requests were carried out during the time frame of the study, 43 requests were excluded due to one of the following, unavailability of request (23), missing dates on the request (10), repeat carotid Doppler scans (7) or carotid endarterectomy (3). Among the remaining 103 subjects 78% were <80 years of age. Symptoms suggesting focal neurology deficits were recorded on 58% and non-focal neurology in 42% of forms. 64% of requests had omitted relevant clinical findings on examination. Onset of symptoms and prior CT brain results, which would indicate clinical priority of referral were not mentioned in 87 and 73%, respectively.

Results show poor provision of clinical data on carotid Doppler requests. Carotid Doppler should be requested by physicians trainee in stroke care ideally in the setting of a neurovascular TIA clinic.

0126
Challenging behaviour in an acute hospital—incidence, implications, staff perceptions and patient experiences

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Many older people are admitted to hospital with worsening or incidental dementia and many more ill older adults develop delirium pre-admission or during hospitalisation. However, these patients may not receive optimal care in acute hospitals and challenging behaviour (CB) may be a barrier to medical and nursing care, rehabilitation and prompt discharge.

Thirty consecutive patients (average age 81 years) admitted with dementia, or developing overt delirium during hospitalisation, were identified prospectively by case note review and staff interview. Data was collected regarding CB, its precipitants and treatment. Forty healthcare staff across all disciplines completed confidential questionnaires about the issues relating to CB, and a random sample of twenty study patients, or their carers, identified their perceived deficits of care during hospitalisation.

CB occurred most commonly in patients admitted because of worsening dementia (83%). By contrast, patients admitted with incidental, stable dementia rarely had CB (25%), and 40% of patients with delirium had CB. CB had typical precipitants, usually multiple in each patient, such as sepsis, urinary retention, metabolic disturbance and pain. The presence of delirium or dementia interfered with medical treatments in 23% of cases, and rehabilitation in 50%, and was associated with a functional decline in 50% of patients, which rarely fully resolved during the admission. Falls however were infrequent. Discharge planning was complicated in 40% of these patients. Healthcare workers identified insufficient staff numbers and lack of specific skills in dealing with CB as important issues hindering optimal care of these patients.

As the population ages and dementia prevalence rises, acute hospitals will admit increasing numbers of patients with known dementia or at risk of delirium. This will have implications for staff numbers and education as well as for the planning of safe environments for such patients.

0127
Use of medications with potential to exacerbate urinary incontinence in long term care residents

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Urinary incontinence (UI) decreases quality of life in frail, functionally and cognitively impaired nursing home residents [1]. It is associated with more indicators of frailty, more impairment of activities of daily living, more urinary tract infections, pressure ulcers and depression [2]. Several common medications have the potential to cause or exacerbate UI.

We surveyed medication use in residents of a long term care facility to determine the proportion of patients prescribed these medications, and the number taking pharmacotherapy for UI.

149 patients were studied across 8 long-term care wards. Of these 123 (82.6%) had persistent urinary incontinence, 13 (8.7%) had occasional incontinence and 13 were continent. Patients were on a mean of 7 regular medications and 3.5 PRN medications. 124 patients (83%) were prescribed a medication that can cause or exacerbate UI, principally sedatives, antimuscarinics and SSRIs. Of this number, 10 patients (7%) were only on these medications on a PRN basis. 5 patients (3%) were on pharmacotherapy for urinary incontinence.

Prescription of medications with the potential to exacerbate UI in long term care residents is highly prevalent. Few residents are prescribed pharmacotherapy aimed at improving UI. Careful attention to the regular prescription medicines of long term care residents may help reduce the high prevalence of chronic UI in this group.

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0128
Solicitors on the care of the elderly ward

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Patients in hospital are sometimes visited by solicitors. Not much is known about the dynamic of this interaction and whether the consultant providing care needs to be involved.

We performed an online survey of all 58 geriatricians in Ireland, to seek their opinions on this area.

The response rate was 51.7%. All reported having received requests from solicitors regarding patients under their care, in most cases written. 14 of 30 (46.6%) had advised solicitors against speaking to patients, generally because the patient was too ill or had cognitive impairment. The vast majority (76.6%) feel that they should be informed of solicitors' visits and somewhat fewer (66.7%) felt that they have a role in screening these visits. Almost two-thirds (63.3%) were aware of a solicitor seeking instruction from a confused patient without asking for geriatrician advice. Most (70%) feel that solicitors are not able to judge for themselves if a patient has capacity. Just 3 of 30 respondents (10%) have a policy governing solicitors' visits to patients in their hospital.

All geriatricians who responded have experience in this area. Most feel they should have input in the process of a solicitor coming to see a patient. Guidelines to formalise the arrangement should be formulated in conjunction with legal regulatory bodies.

0129
Could the use of FRAX reduce the risk of fracture?

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Would routine screening of Care of Elderly inpatients with the WHO Fracture Risk Assessment Tool (FRAX) help to identify those at risk of osteoporosis with a high fracture risk and initiate treatment.

We used a validated tool—FRAX (UK version) to screen forty inpatients in two care of elderly wards over one day.

Forty patients were screened 23 (57.5%) were female and 17 (42.5%) male. Of the total population two (5%) were high risk and on appropriate treatment. Nineteen (47.5%) were intermediate risk, warranting bone mineral density (BMD) measurement and out of these four (10%) were already on osteoporosis treatment. Three (7.5%) patients were low risk but inappropriately prescribed bone protectants.

The main finding from this screening exercise was that a very high percentage of patients (47.5%) were identified in the intermediate risk category which required further assessment (in form of BMD measurement). The identified high risk patients were already on treatment for osteoporosis. Interestingly the tool also identified patients inappropriately prescribed treatment, which raises the important issue of polypharmacy.

0130
Reasons for referral to a geriatric medicine outpatients clinic

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There is little data in the literature regarding reasons that patients are referred to a geriatrician for outpatient review.

We studied 130 outpatient referrals looking at referral source, patient details, extent of documentation and reason for referral.

The mean patient age was 80, range 62–102. The most common reason for referral was for cognitive assessment (20.1%), followed by assessment for long term care (14.6%), respite (7%), pain (7%) and general review (7%). There were diverse other reasons given such as tremor, dizziness and falls. 91% of letters were typed. Documentation was good for past medical history (84%) and medications (87%) but not for lab results (21%) or tentative diagnosis (7.6%). Most referrals were from general practitioners.

One in three referrals are for cognitive or long term care assessment. Almost all others are for medical reasons. There is a case for subspecialty clinics according to need. The format of referrals and amount of information provided varies greatly. A common electronic referral request form may help to ensure uniformity and adequacy of information.

0131
Education in geriatric medicine for community hospital staff

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A network of community hospitals exists throughout Ireland, providing respite, rehabilitation, long stay and other services. Only one in three Irish geriatricians report involvement in community staff education sessions [1].

We sought to study this area in more detail, and performed a telephone survey of senior nursing staff in all community hospitals in the southern area.

All 18 hospitals were invited to participate in the survey. The response rate was 100%. 10 of 18 hospitals (55.6%) reported having regular education sessions. Only 4 (22.2%) have geriatrician-provided sessions on a regular basis, with a frequency ranging from every 6 weeks to every 3 months. Only two respondents (11.1%) felt they receive enough education in geriatric medicine. Most respondents (61.1%) felt that sessions every 3–6 months would be adequate. All felt that regular geriatrician attendance is desirable and that both patients and staff would benefit. The areas that staff find most difficult are challenging behaviour, dementia and medication management.

Geriatrician input into education in community hospitals is very limited but is uniformly sought after. Staff feel that dedicating more resources to this area would benefit patient care. The request for more input is relatively modest with most suggesting a quarterly visit.

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0132
Falls in older people: an analysis from general practice

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Falls are a major cause of morbidity and mortality for older people. The general practitioner (GP) is central to the medical care of older people. The GP can be the first and only professional an older person

will report a fall to. The study attempted to estimate the load older patients that fall are on GP practice and to analyse GPs awareness and perception of current falls services.

The study was carried out in a mixed urban and rural health care area (census population 346,961, over 65 population 36,019). GPs were identified using the ICGP website and the "Yellow Pages" phonebook. A questionnaire was sent to all 225 GPs identified. In addition, five GPs took part in a detailed face-to-face interview using a structured interview technique.

Eight-six (38%) completed questionnaires were returned. Only 25 (29%) GPs had seen no older person for falls over 2 weeks. Forty-five (52%) had seen 1–2 older people, twelve (14%) 3–5 patients and three (5%) 6–10 about falling. Over 30% of the patients seen had a previous fall in the past 6 months. Taking these figures as representing the entire GP group then $\sim$11,000 visits per year for falls occur to the GPs in this area. The expected number of older people falling each year in this area is 13,500. Forty GPs (47%) generally managed older patients that fell, in the community. A third of GPs routinely referred to the Emergency Department and a quarter to a geriatrician for patients with unexplained falls. Overall only 10% routinely referred for physiotherapy. Many GPs were unaware of the available multidisciplinary fall specific services.

GPs see the vast majority of older people that fall and represent an important resource to advise patients. Much better communication of community services including notification of new initiatives to GPs is required.

0133
Pain assessment in specialist services for older people in Ireland

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Background: Pain is the most common symptom experienced by hospitalized adults and is often undertreated and under diagnosed. In the case of the older patient, pain and its diagnosis becomes increasingly more challenging. Routine use of short, simple, and reliable pain-rating scales which are attuned to age and cognition can provide nurses and physicians with measurable information to establish and modify a pain management plan [1]. Designating pain as the fifth vital sign or incorporating it into an observational chart has also been suggested [2]. We audited use of such scales among consultant geriatricians in the Republic of Ireland.
Method: Online and postal questionnaire to Irish consultant geriatricians ($n = 58$).
Results: Of 30 replies (response rate 52%), 49% were from HSE South, 27% HSE West, 20% HSE Dublin Mid-Leinster, and 13% Dublin North East. No pain assessment tool was used 'as yet' routinely in 57% of services, with the visual analogue scale (VAS) and verbal rating scale (VRS) and Numerical Rating Scale (NRS) used most commonly at 23, 23 and 20%, respectively. For those with moderate to severe cognitive impairment, the most commonly used scales were the Faces Pain Scale (10%), VAS (10%) and NRS (7%). Incorporating pain as the 5th vital sign was felt to be useful by 70%.
Conclusions: These results suggest that significant scope exists for agreement on, and adoption of, pain scales for older people in geriatric medicine services in Ireland. The high level of support for incorporating pain as the 5th vital sign suggests that this might also be a useful manoeuvre for improving detection and measurement of pain among older people in hospital services.

References: (1) Schofield P et al (2008) Br J Nurs 17(14):914–918. (2) AGS panel on persistent pain in older persons. JAGS (2002); 50(6 Suppl):S205–S224.

0134
Global and p16 methylation status in octo/nonagenarian subjects from the Belfast elderly longitudinal free-living ageing study (Belfast)

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Introduction: DNA methylation helps stabilise chromatin and silences genes, whereas hypomethylation may lead to genomic instability and enhanced gene promoter activity. Because epigenetic alterations in gene expression, that do not involve coding sequence modifications, can accumulate with age and are associated with some age-related disorders, including cancer, we assessed the degree of global methylation and methylation of the P16 suppressor gene in healthy octo/nonagenarians from the Belfast Elderly Longitudinal Free-living Ageing STudy (BELFAST).
Methods: We used bisulfite treatment of DNA and simultaneous PCR of multiple DNA repetitive elements, as a measure of global methylation (Line 1) and methylation of P16, a tumour suppressor gene, in DNA separated from 24 subjects (12 males, 12 females, 80–99 years), from the BELFAST study and compared these with patients (70–79 years) with Acute Myeloid Leukaemia (AML).
Results: There was 86% global methylation for octo/nonagenarian subjects, with no difference between subjects aged 80–90 and 90–99 years, nor between the sexes with a good degree of homogeneity. Comparative 70 year old patients with acute myeloid leukaemia (AML) had <70% global methylation. By contrast P16, the tumour repressor gene was 2% (range 1–2.2) methylated in BELFAST octo/nonagenarians compared with 70 year old AML subjects where P16 showed median values of 12% (range 0–14). Cluster analysis showed BELFAST octo/nonagenarians completely separated from AML subjects.
Conclusions: Octo/nonagenarians in the BELFAST study showed a high degree of global methylation suggesting genomic stability. P16 had lower methylation which could suggest a more active tumour suppressor role. Understanding better the signatures in global and candidate gene methylation status may help guide us to pathways underlying the mechanisms for good quality ageing and longevity.

0135
Are frail elderly patients admitted to an appropriate ward?

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Introduction: A frail elderly person admitted to hospital has complex medical and social needs. These patients should be admitted to a Geriatric ward where they receive comprehensive Geriatric multidisciplinary assessment. Simple 10 points based BGS (British Geriatrics Society) scoring system is often used by geriatricians and the

score ≥2 is classified as the "frail". Our study examined if elderly frail patients are admitted to an appropriate ward.

Method: A retrospective case note study was performed of 50 patients aged over 65 years who were admitted in January 2009 in a district general hospital in England. We recorded patients' age, gender and ward they were on, 24 h after admission. In addition, we studied their frailty scores. Descriptive analysis was used.

Results: Mean age was 80 years and 46% were male. No patients were discharged 24 h after admission. Mean frailty score is 2.8 with range between 0 and 8, median 2.5. 36 patients (72%) had the score ≥2. Only a quarter of those frail elderly patients were admitted to a Geriatric ward. Three were transferred to coronary care unit and high dependency unit because of medical need. All remaining frail patients were still in emergency medical assessment unit 24 h after admission.

Discussion: This study shows there is a large unmet need for elderly patients with frailty. Only a quarter were admitted to an appropriate ward. We recommend education and training on the importance of multi-disciplinary assessment on appropriate ward in frail elderly individuals and frailty score incorporated into admission clerking proforma.

0136
Design and implementation of a new medicine in the community module: a unique partnership between medicine for the elderly and general practice at University College Dublin

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As part of UCD's ongoing curriculum development, a new core 6-week Medicine in the Community module was introduced in April 2009. It is designed and delivered by health professionals in Medicine for the Elderly and General Practice. Specific learning objectives include understanding the role of GP and Medicine for the Elderly physicians and identification of common medical problems in these settings. Theoretical and clinical content is organised around themes including prevention/health promotion, care of patients with acute/chronic illness, psychosocial issues, family, continuing care and care of specific populations.

The module is delivered in Stages 5 and 6 (penultimate or final year of the undergraduate MB degree programme). It runs four times annually, accommodating fifty students each time. Each block begins with an introductory week involving lectures on core topics, workshops, and seminars. A Clinical Skills workshop facilitates familiarity with screening tools and clinical assessments used in older adults. Its five stations encompass: (1) polypharmacy using a 'brown-bag' medication review; (2) cognitive/mood assessment using MMSE and GDS role-plays; (3) Functional and gait assessment (case vignettes demonstrating ADL/IADL impairments and timed get-up-and-go test); (4) Skin ulcers and urinary incontinence (using case scenario and picture matching games) and (5) Introduction to the NIH Stroke Scale using a training DVD overseen by a geriatrician.

This induction programme is followed by fortnight-long rotations in (1) a rehabilitation and continuing-care facility and (2) general practice. Students attend day-hospitals, ward-rounds, multi-disciplinary sessions, tutorials, and engage in self-directed learning.

Assessments comprise (1) a clinical portfolio- encompassing activity logs, case presentations, service reports and group projects, (2) MCQ, and (3) OSCE. Two-way feedback is encouraged throughout and students formally evaluate the module at its end.

This module is a novel, innovative partnership between Medicine for the Elderly and General Practice and an exciting development in medical education.