EU support to research in ageing

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DG for Research and Innovation
Health Directorate
European Commission
1. Research in ageing at EU level: How does it work?

2. Challenges addressed in ageing

3. The future: Horizon 2020
Strategic objectives for research on ageing

- **Shorten the innovation life cycle**
- **Foster integrated translational research (proof of concept)**
- **Provide evidence-based solutions for clinical challenges**
- **Generate best practice and guidelines**
- **Promote research coordination**
How?

Collaborative Research

- Public-Private Partnerships
  - IMI
- Capacity Building
  - infrastructures
- Legislation
  - Directives,
  - Regulations
- Bottom-up research
  - ERC, People
- International co-operation
  - GACD
- MS Coordination
  - ERA-NET
  - JPIs
  - EIP AHA
EU research in ageing – what’s being funded?

- **Training**: 16
- **Collaborative research**: 271
- **Frontier research**: 52

** translational research
- comorbidity
- poly-medication
- determinants
- Technology / devices
- systems biology
- frailty
- falls
- cohort studies
- investigator-driven trials
- multimodality (physical activity, nutrition, environment)

€ 340 Million on ageing research (excluding Neuro-Degenerative disease)
### Articles

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Articles appearing between 1999 and 2010 in ageing research journals' as listed by SCImago and Thomson Reuters' Web of Science. The citation numbers are accurate as of May 2012.
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*R. Neuman et al, Journal of Ageing research, 2012*
EU health research produces knowledge, innovation and growth

1,210 projects funded
4.9 billion euros invested
14,000 teams
114 countries
~50% of projects on-going

70,000 PubMed publications
50,000 high-skilled jobs
23.3% listed on patent application(s)
17% envisage creating a SME
7.4% created one or more SMEs
Understanding human development and the ageing process

Just started (€36 M projects from 2 topics): 1-Integrative systems biology and comparative genomics for studying human ageing and/or most common age-related diseases. 2-Investigator-driven clinical trials for optimisation of management of elderly patients with multiple diseases.
Ensuring effectiveness and efficiency of care

- RightTimePlaceCare - organisation of dementia care
- HOMECARE - integrated approach to health care
- CHANCES - ageing cohorts
- FOCUS - cardiovascular prevention
- LINNEAUS EURO & Monitoring Medicines - patient safety research networks - primary care & safe use of medicines
- Interlinks, SHELTER & ANCIEN - health systems and long term care of the elderly
- COURAGE & MentDis_ICF65+ - health outcome measures and population ageing
The PREDICT Charter

- Older people have the right to access evidence-based treatments
- Promoting inclusion of older people in clinical trials and preventing discrimination
- Clinical trials should be made as practicable as possible for older people
- Safety of clinical trials in older people
- Outcome measures should be relevant for older people
- The values of older people participating in clinical trials should be respected

http://www.predict.eu.org/
Addressing therapeutic interventions in the elderly

• **V-TIME** – multi-modal intervention combining Virtual Reality with treadmill training for enhancing mobility and reducing falls in the elderly

• **TRUST**: assessing the impact of thyroxine replacement in older adults with subclinical hypothyroidism

• **NILVAD**: testing the efficacy and safety of a marketed drug (Nilvadipine) for the new indication of Alzheimer’s disease

• **MID-FRAIL-STUDY** – Effectiveness of multi-modal intervention in frail subjects with Type II Diabetes

• **DO-HEALTH** – beneficial effects of vitamin D, omega-3 fatty acids and home-based exercise in seniors aged 70 years or more
• Consortium on Health and Ageing: Network of Cohorts in Europe and the United States

• To combine and integrate ongoing cohort studies to produce evidence on ageing-related health characteristics and determinants and their socioeconomic implications

• To focus on four groups of chronic diseases and conditions which are major contributors to the burden of disease in the elderly:
  • Cancer
  • Cardiovascular diseases and diabetes
  • Osteoporosis and fractures
  • Cognitive function and psychiatric disorders

• EUR 11.9 million (http://www.chancesfp7.eu)
MARK-AGE

• To conduct a population study (3,700 probands)
• To identify a set biomarkers of ageing
• To measure biological age
• EUR 11,99 million

Website: http://edukon.biologie.uni-konstanz.de/mark-age/
ERA-AGE
2005 - 2009

Generate new knowledge on the biological, clinical, behavioural, social and environmental factors

Compare different models, methods, approaches and good practices in societal responses to increased longevity

13 national funding agencies from 13 countries

linking national and regional research funding programmes in the field of disease-related neuroscience.

15 national funding agencies from 12 countries
Partnership – the Innovative Medicines Initiative

- IMI projects - research and innovation
- Proof of concept for new public private collaborations in pharmaceuticals
- Open collaboration to define and address common challenges
- IMI works: tangible deliverables after less than 2 years – at pace that no other funding scheme allows
- IMI bridging the gap between science, health and growth

IMI slides kindly provided by M. Chlebus, EFPIA
Improvements still need to be made...

EU research budget represents only ~5% of research expenditure in MS

Low coordination, high fragmentation, invest less than in the US

Brain disease
Dementia
Alzheimer
Cancer
To address significant challenges...

- Increasing pressure on European healthcare systems: between 1993 and 2004, total European sales for cancer drugs alone increased from €840 million to €6,2 billion (Sullivan et al, The Lancet Oncology 2011)


- Over-utilisation of care, differences in outcomes, rapid expansion and shortening life cycles of technologies and insufficient comparative assessment of current practices and approaches
...and benefit from opportunities

- Stratified and subsequently personalised medicine can deliver cost savings and better outcomes for patients

- A recent study suggests cost savings of 37% for breast cancer when a stratified approach to screening according to risk profile is taken (Science/Business, "Health for All, Care for you", A research report in partnership with Vlerick Leuven Gent Management School, 2012)

- But the building blocks are many and linked, requiring clinical trials, a better understanding of disease and comorbidity, and efforts to translate results to the clinic
Horizon 2020: The next Framework Programme for research and innovation

Proposed budget: €80bn, a 46% increase compared to FP7

Europe needs cutting edge research and innovation
Essential to ensure competitiveness, growth and jobs
Vital to tackle pressing societal challenges
3% of GDP invested in R&D: headline target of Europe 2020
Horizon 2020 novelties

Simplification:
- Simpler programme architecture, a single set of rules
- Easy to use cost reimbursement model: one project - one funding rate
- Less paperwork in preparing proposals
- Reduce time to grant by 100 days

Inclusive approach:
- More support for innovation and activities close to the market
- Strong focus on creating business opportunities
- New SBIR-like scheme dedicated to SMEs

Renewed successful partnerships:
- EDCTP
- IMI
Horizon 2020: Health, Demographic Change and Wellbeing Challenge Proposal: ~ €8.5bn

- Understanding the determinants of health (including environmental and climate related factors), improving health promotion and disease prevention;
- Developing effective screening programmes and improving the assessment of disease susceptibility;
- Improving surveillance and preparedness;
- Understanding disease;
- Developing better preventive vaccines;
- Improving diagnosis;
- Using in-silico medicine for improving disease management and prediction;
- Treating disease;
- Transferring knowledge to clinical practice and scalable innovation actions;
- Better use of health data;
- Improving scientific tools and methods to support policy making and regulatory needs;
- Active ageing, independent and assisted living;
- Individual empowerment for self-management of health;
- Promoting integrated care;
- Optimising the efficiency and effectiveness of healthcare systems and reducing inequalities through evidence based decision making and dissemination of best practice, and innovative technologies and approaches.
Horizon 2020: Health Challenge: Some of the key features

• Adapting to an ageing population
• Pursuing the path to more personalised medicine
• Translational research (clinical trials)
• Harnessing and encouraging private sector capability
• Coordinating national efforts
• Reducing costs (comparative effectiveness research)
• Expanding global cooperation
Who is who?

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