Future of diabetes research in the EU— the EC perspectives

Dr Karim Berkouk, Deputy Head of Unit
DG for Research and Innovation
Health Directorate
European Commission
Overview

- Challenges in diabetes
- Research in diabetes at EU level: How does it work? What has been done?
- Horizon 2020 & the Health challenge
- The EU patients perspective
Challenges in diabetes research

- Risk factors and early detection
- Identification of high-risk and vulnerable populations and reduction of co-morbidities
- Innovative technology and devices
- Tackling diabetes complications
- Personalised treatment
- Disease prevention
- Integrated care

- 33 million people in EU had diabetes in 2010
- 10% of total health expenditure in most MS due to diabetes care
- Obesity and ageing on the rise
EU R&I Funding: How does it work?

- **Multiannual Financial Framework (MFF)**
  - Overall EU Budget (2014-2020), about 1% of MS PIB

- **Framework Programme (FP)**
  - Research budget (H2020: € 79 billion, 3rd EU budget)

- **Specific Programme (SP)**
  - Challenges: Health € 7.5 billion (1st budget)

- **Work Programme (WP)**
  - Defined for 2 years
  - Yearly calls for proposals on specific topics
The EU means:

- **Collaborative Research**
- **Bottom-up research**
- **Capacity Building Infrastructures** (CT, registries, biobank)
- **Public-Private Partnerships**
- **Legislation** (Reg. or Direc. (eg CT, data protection, medical devices))
- **International co-operation**
- **MS Coordination**
  - ERA-NET
  - JPIs (JPND), MYBL, AAL, EIP
  - AHA
  - Joint Action

**EU Diabetes Research**
Diabetes and obesity research schemes and funds (in € Million)

- Collaborative research: 660
- SME: 4,5
- Training & Mobility: 50
- Frontier Research: 129
- IMI: 92

- Translational research
- Genetics and epidemiology
- Function & metabolism
- Childhood & pregnancy diabetes
- Diabetes complications
- Physical activity, healthy diet
- Prevention & self management

Over € 935 Million on diabetes and obesity research (2007-2013)
FP 7 (2007-2013) - Diabetes

Key figures

- 843 M€ invested to date
- 378 projects
- 1,946 participations
- 1,011 organisations
- 63 countries

First outcomes
(on 22 closed projects from Health Programme)

- 1,060 publications
- 2.8 average SJR* publication (average IF of 8)
- 17 patent applications
- 6 spin-offs created

* SCImago Journal Ranking
Overview FP7
Diabetes & Obesity Area

€ 157,3 M – 34 projects
Prevention / epidemiology
Diagnostics
Complications
Towards novel therapy

Overall Strategy / Framework

Clinical trials to prevent complications
Monogenic diabetes
Gestational diabetes
Betacell strategies
Prepp 1 gene
Markers for nephropathy

Type 2 Diabetes
€ 59 M
Innovative type 2 diabetes management
Adipokines

Type 1 Diabetes
€ 39,3 M
Innovative type 1 diabetes management
Immunomodulators

Obesity
€ 33 M
Lifestyle of infants
Clinical Trials
Islet auto-antigens
Betacells in obese children
Physical activity
Drug reprofiling
Gastro-intestinal peptides
Inflammation

International
€ 12 M
Migrant populations (diabetesy)

Physical Activity
€ 11,5 M
Response to Physical Activity + Reduce sedentary

DIAMAP (Roadmap on diabetes research) + InterConnect (framework for population research in diabetes)
Horizon 2020

Perspectives
Three priorities

- Excellent science
- Industrial leadership
- Societal challenges

- European Research Council
- Future and Emerging Technologies
- Marie Skłodowska-Curie actions
- Research infrastructures

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Secure societies
- Science with and for society
- Spreading excellence and widening participation

Budget: about €79 Billion
Health, Demographic change and wellbeing - aim

- Translate science to benefit citizens
- Test and demonstrate new healthcare models, approaches and tools
- Improve health outcomes, reduce inequalities
- Promote healthy and active ageing
- Support a competitive health sector

Budget: about €7.5 Billion
Understanding health, ageing & disease

Effective health promotion, disease prevention, preparedness and screening

Improving diagnosis

Innovative treatments and technologies

Advancing active and healthy ageing

Integrated, sustainable, citizen-centred care

Improving health information, data exploitation and providing an evidence base for health policies and regulation

WP 2014/2015: € 1,2 billion
• Understanding health, ageing and disease: determinants, risk factors and pathways

• New therapies for chronic non-communicable diseases

• Comparing the effectiveness of existing healthcare interventions in the elderly

• Health promotion and disease prevention: translating ‘omics’ into stratified approaches

• Development of new diagnostic tools and technologies: in vitro devices, assays and platforms
Topics 2015 topics relevant for Diabetes

- Understanding common mechanisms of diseases and their relevance in co-morbidities
- Health promotion and disease prevention (environment and health based interventions)
- Development of new diagnostic tools and technologies: in vivo medical imaging technologies
- Tools and technologies for advanced therapies
- Establishing effectiveness of health care interventions in the paediatric population
- Piloting personalised medicine in health and care systems
• Self-management of health and disease: citizen engagement and mHealth (2014)

• Self-management of health and disease and patient empowerment supported by ICT (2015)

• Self-management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself (2015)
Innovative Medicines Initiative 2
www.imi.europa.eu

European Innovation Partnership on Active and Healthy Ageing
https://webgate.ec.europa.eu/eipaha

Active and Assisted Living 2
www.aal-europe.eu

European & Developing Countries Clinical Trials Partnership (EDCTP2)
www.edctp.org
International cooperation: how?

- Identify and define shared strategic goals
- Agree to approach jointly and share tasks (and costs)
- Let each agency use its own funding mechanisms/timing
- Agree to share data / standards

Alignment – Flexibility – Commitment

Example: Global Alliance for Chronic Diseases (GACD)
HCO 5 -2014) Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes

**Scope**

Implementation and intervention research for the prevention and treatment of type 2 diabetes in low and middle income countries, and in vulnerable populations in high income countries. Emphasis is placed on validating/scaling up existing approaches rather than developing new ones.

**Expected Impact**

- Reduce health inequalities in both a local and global context and maximize public health benefits of research findings within different health contexts
- Provide evidence on the effective scaling up of the interventions. Leverage of existing programmes and platforms (e.g. research, data) and alignment with national/international commitments
The EC & patient involvement

- Wide consultations
- EP and many events triggered by patient organisations
- Role of the Programme Committee
- Advisory group: representative of the European Patients Forum
- Workshops: systematic patients' participation
- Topics: more patient centred