Introduction to IMI

Pierre Meulien
Executive Director
Innovative Medicines Initiative
What is the Innovative Medicines Initiative?

EU funding goes to:
- universities
- SMEs
- patient groups
etc…

EFPIA companies
- receive no funding
- contribute to projects ‘in kind’

Europe’s partnership for health
Why do we need IMI?

Because drug development is very...

- risky
- inefficient
- complex
- time consuming
- expensive

Because...

- Clinical trial designs not always optimal
- Not enough science throughout development
- Regulatory pathways not always optimised
All of this has a significant impact on the affordability and speed of access for innovation for patients
How is IMI addressing the challenges in drug development?

Through IMI’s projects we are trying to...

- put patients at the centre
- share risk (among public & private players)
- increase efficiency (by developing common tools)
- reduce duplication of effort (esp. at early stages)
- reduce timelines (by using a personalised medicine approach)
- integrate the latest science into drug development
- use data and knowledge management to work more effectively

We do this by creating a neutral platform where all involved in drug development – academics, industry, SMEs, patients, regulators, others – can engage in open collaboration on shared challenges.
What is IMI delivering?

- 2,272 FTE jobs directly associated with IMI projects
- 460+ biological marker candidates for better diagnosis & treatment
- 169 SMEs
- 25+ new tools to facilitate drug development
- 1,600+ scientific publications
- 13 spin-offs
- 20 patent applications
- 65 clinical studies
- 65 clinical studies
A major challenge in drug development is finding medicines that treat the disease but are not toxic to vital organs like the heart, liver, kidneys, etc…

Too often, toxicity issues are only picked up late in drug development, when vast amounts of time and money have been spent on a drug.

IMI projects are developing simple tests to detect toxicity issues earlier in drug development.
Medicines safety – an IMI success

What eTOX did

Pharma data + Public data = One big database underlying multiple computer-based tools

✔ Project partners using tools
✔ Reducing animal testing

Example: Will this be toxic to the heart?

Input = 2D structure of a possible drug

Output = possible effect on heart – ECG result!
Medicines development – the challenge

- We don’t know enough about the underlying causes of many diseases – we need this information to develop effective treatments!
- We don’t have the tools to study the underlying causes of many diseases

IMI projects are developing tools and establishing networks to study diseases and making new discoveries on the underlying causes of diseases.
Medicines development – an IMI success

Autism...
- affects 1 in 110
- results in difficulties in social interaction & communication, repetitive behaviours
- has a major impact on families & carers
- has no treatments

Our EU-AIMS project has discovered...
- new insights into underlying causes (genes etc.)
- that the brain changes associated with autism could be reversed
- gender differences in the brains of men and women with autism

✓ Patients involved
✓ Working with regulators
✓ Recognised globally as flagship project
Medicines development – the challenge

- **High Throughput Screening (HTS)** = researchers screen large collections of chemical compounds in hunt for molecules that could be potential drugs or be used in drug development in other ways.
- **Pharmaceutical companies** have huge compound collections, but access to these is usually tightly restricted…
- **Public compound collections** exist, but are small and expertise is scattered across many institutions.

Through its European Lead Factory project, IMI has created a state-of-the-art compound collection & screening centre that is delivering results for academics, SMEs & pharma
Medicines development – an IMI success

Joint European Compound Collection
- 320,000 cpds from 7 pharma companies
- 200,000 cpds from public partners

European Screening Centre
- Advanced, ultra high throughput screening facilities & expertise on logistics, medicinal chemistry, etc.

‘Access to the European Lead Factory has fast-forwarded our drug discovery programme in the field of oncology by several years.’ – Huib Ovaa, Netherlands Cancer Institute

‘ELF support & its high quality compound library … will allow Effecta Pharma to expand its drug discovery efforts for dengue and gives an important boost to tackling this viral disease.’ – Effecta Pharma, UK biotech company

- Leading role for SMEs
- Quality & diversity of compounds recognised
- Award-winning IP solution
- Happy users!
Stay in touch

- Visit our website www.imi.europa.eu
- Sign up to our newsletter bit.ly/IMInewsletter
- Follow us on Twitter @IMI_JU
- Join our LinkedIn group bit.ly/LinkedInIMI
- E-mail us infodesk@imi.europa.eu