Leveraging Big Data for Better Health Outcomes: The Need for a Collaborative Space and Common Solutions

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Disruption
Why this discussion now

• **Definitions.** True Big Data vs. structured data from real world setting.

• **Driven by science.** New technologies.
  New ways to analyse and visualise data.

• **New players – pharma meets tech.** New business models.

• **New service and business models.** From purchasing to commissioning.

• **From Big Data to Small Data.** Wearables, devices, IoT

• **Change in consumer demand and behaviour.** Changing preferences and priorities.

• **Technologies evolve.** So do people and societies.
Compared to other sectors, healthcare is still in the early stages of the digitisation journey.

Impact of digitisation

Point on digitisation journey

Source: BCG analysis
Data

- Patient-generated data
- Medical records
- Pharmacovigilance (safety) data
- Data from dispensing and use (serialisation)
- Clinical trial
- Human samples (Biobanks)
Data

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Better understanding of disease and outcomes

Improved prevention, diagnosis and intervention

Improved outcomes, health system performance and sustainability

Complete infrastructure to track and reward performance
Two examples

• Innovative Medicines Initiative
  (Bart to present more tomorrow)

• Serialisation of medicines
  (European Medicines Verification Organisation)
The Innovative Medicines Initiative: the largest public-private partnership for health research worldwide

€5 billion – 2008 to 2014

Part of the EU Horizon 2020 R&D funding
The public contribution

1,638 Billion €

CASH for grants for PUBLIC PARTNERS

1,638
From H2020

efpia
In the industry

The private Industry in-kind contribution

1,638 Billion €

1,425 EFPA direct and indirect members

213 Other sectors

imi
innovative medicines initiative

3,276 Billion €
2014 - 2024

What are the results?

Speed up patient access

Improve R&D

Improve outcomes & safety

Public Partners + Private Partners = in IMI2 consortia
Who can partner?

Do not receive EU funding

Big and Small Companies

Prescribers

Patients

Academia

Payers

Social security

Primary & Special care

Regulators

Receive EU funding

Social security
IMI Big Data projects (examples)

- **Personalized care**
  - ADAPTSMART
  - GetReal
  - WEB-RADR

- **Analysis**
  - ddmore
  - PRO

- **Quality and access**
  - Open PHACTS
  - eTOX
  - eTRIKS
  - EMIF

- **Definition**
  - EHR4CR
  - ADVANCE

**Outcomes**
- Targeted drug research and development
- Faster and cheaper clinical trials
- Faster approval and uptake
- Improved value in HC delivery

www.efpia.eu
The Big Data for Better Outcomes programme at a glance

"Big data for better outcomes"

Goal: Support the evolution towards outcomes-focused and sustainable healthcare systems, exploiting the opportunities offered by big and deep data sources

1. Design sets of standard outcomes and demonstrate value
2. Increase access to high quality outcomes data
3. Use data to improve value of HC delivery
4. Increase patient engagement through digital solutions

COORDINATION AND SUPPORT ACTION (CSA)

EUROPEAN DISTRIBUTED DATA NETWORK

ROADS: ALZHEIMER'S DISEASE – CALL OPEN FOR APPLICATIONS

HEMATOLOGIC MALIGNANCIES – CALL OPEN FOR APPLICATIONS

CARDIOVASCULAR

MULTIPLE SCLEROSIS

MULTI-DISEASE / MULTI-MORBID PATIENTS

RARE CANCERS
Serialization of medicines will create a new Infrastructure to protect against counterfeit medicines - and much more.....

Serialization by manufacturer

+ Verification at point of dispense

Code (‘safety feature’)

+ Tamper evidence

System decided by governments and covering all stakeholders
The data architecture for health research needs to operate seamlessly across borders and institutions and offer high levels of security and accountability.

Maybe needed: government-mandated third party to ensure privacy and integrity.
Science and technology meets society

• Everyone is very excited about use of big data to advance science and deliver better health outcomes.

• Patient-generated and patient-held health data will enable new solutions to track safety and effectiveness in real time.

• With a common focus on health outcomes, and the availability of everyday clinical data will enable companies to agree new payment models, paying for results.

• Connecting the physical world (medicines) with the digital one, such as through serialisation and wearables, will "close the loop" and deliver big data sets of good quality.