"Stakeholder perspective –Pharmacists"

EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

MBA Health

HELLENIC REPUBLIC
National and Kapodistrian
University of Athens
EST. 1837

Tuesday 15th December 2020
**Prof. John Yfantopoulos University of Athens Greece**

BIG-DATA: Structure

- Brief Remarks on European Commission
- Priorities
- Opportunities
- Areas of Collaboration

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European Commission's Term of Big data

- Big Data in health encompasses
- high **volume,**
- high **diversity** biological,
- **clinical**, **environmental**, and
- **lifestyle** information collected from
- single **individuals (Personalized Medicine)** to large cohorts, in relation to their **health** and **wellness status**, at one or several time points.

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European Commission: Big Data in Public Health

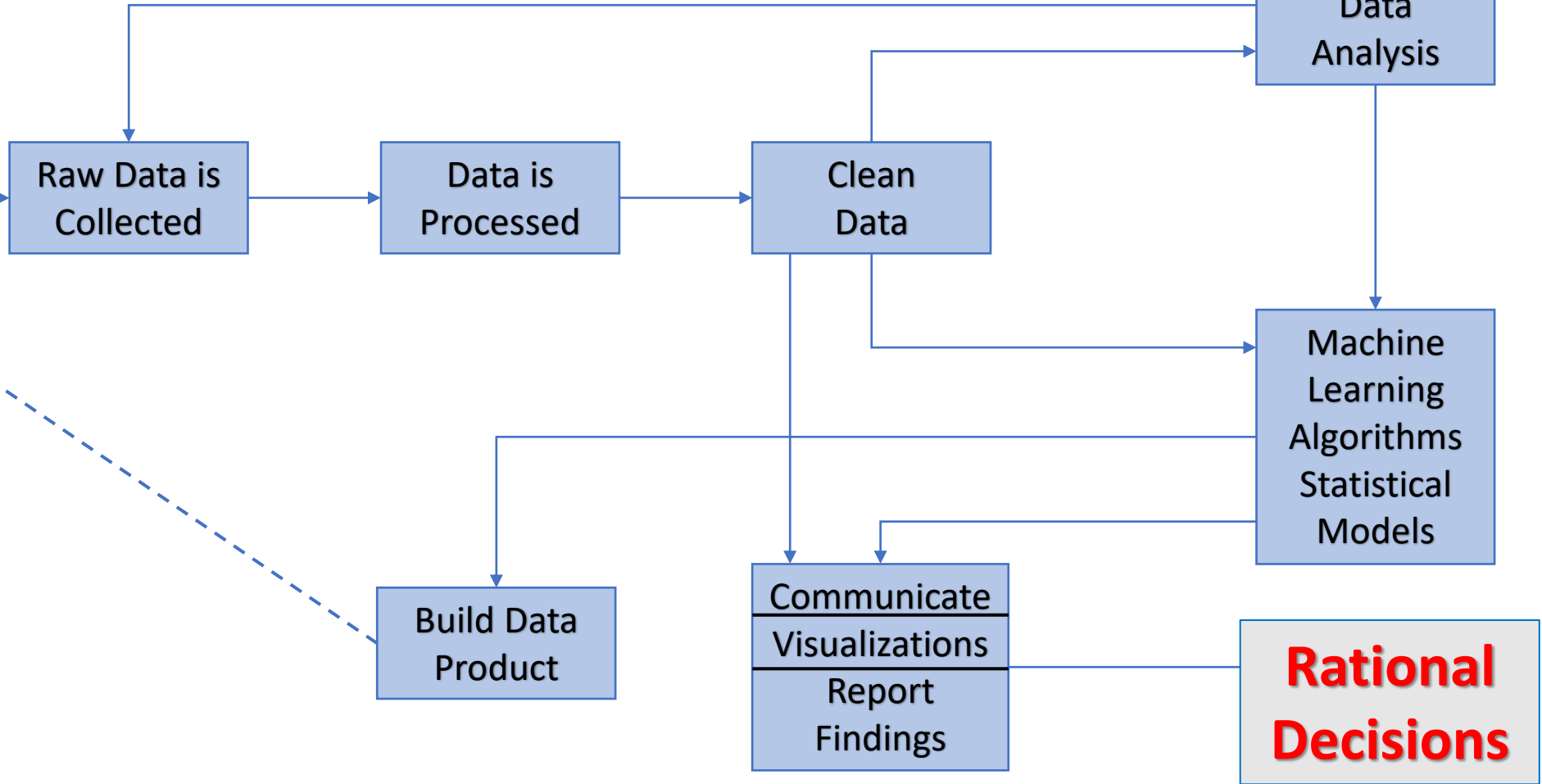
Exponential Increase in Big data Publications
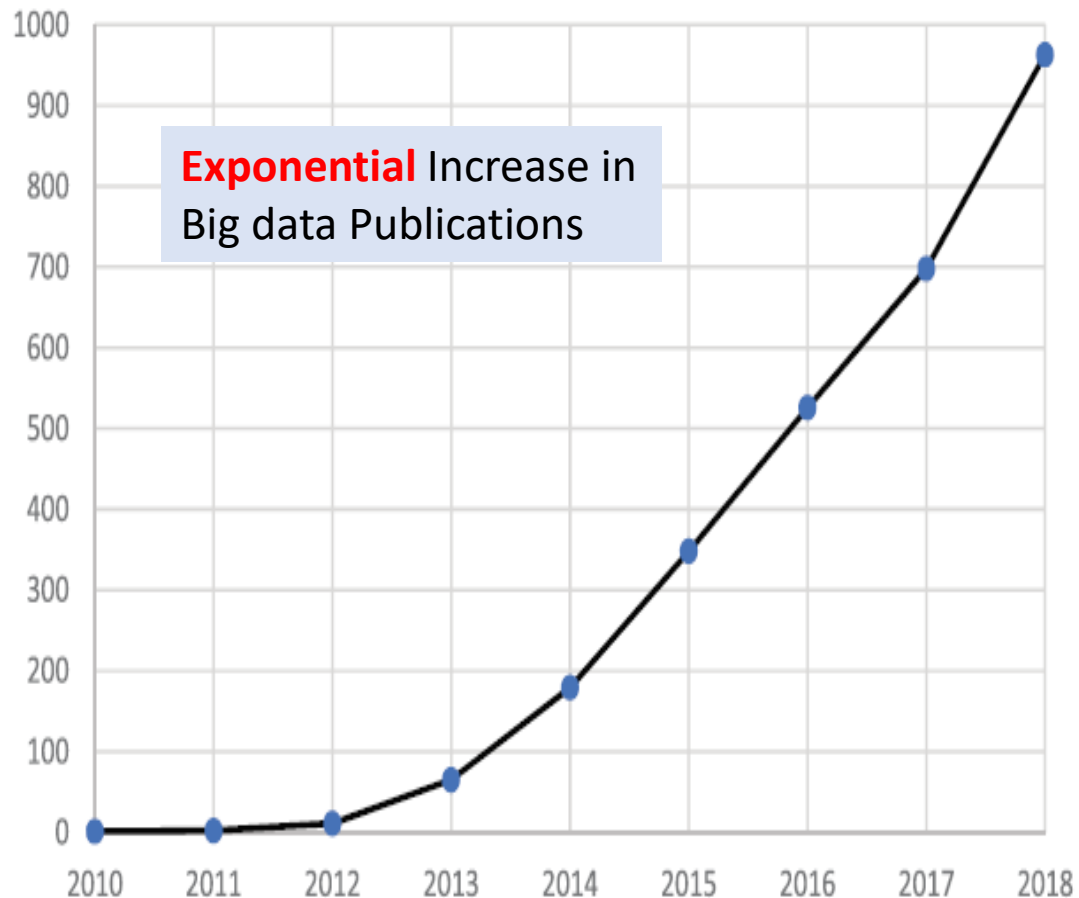
- increasing **earlier diagnosis** and the **effectiveness** and **quality** of treatments
- widening possibilities for **prevention** of diseases by identification of **risk factors** for disease
- improvement of **pharmacovigilance** and **patient safety**
- ability to make more **informed decisions**
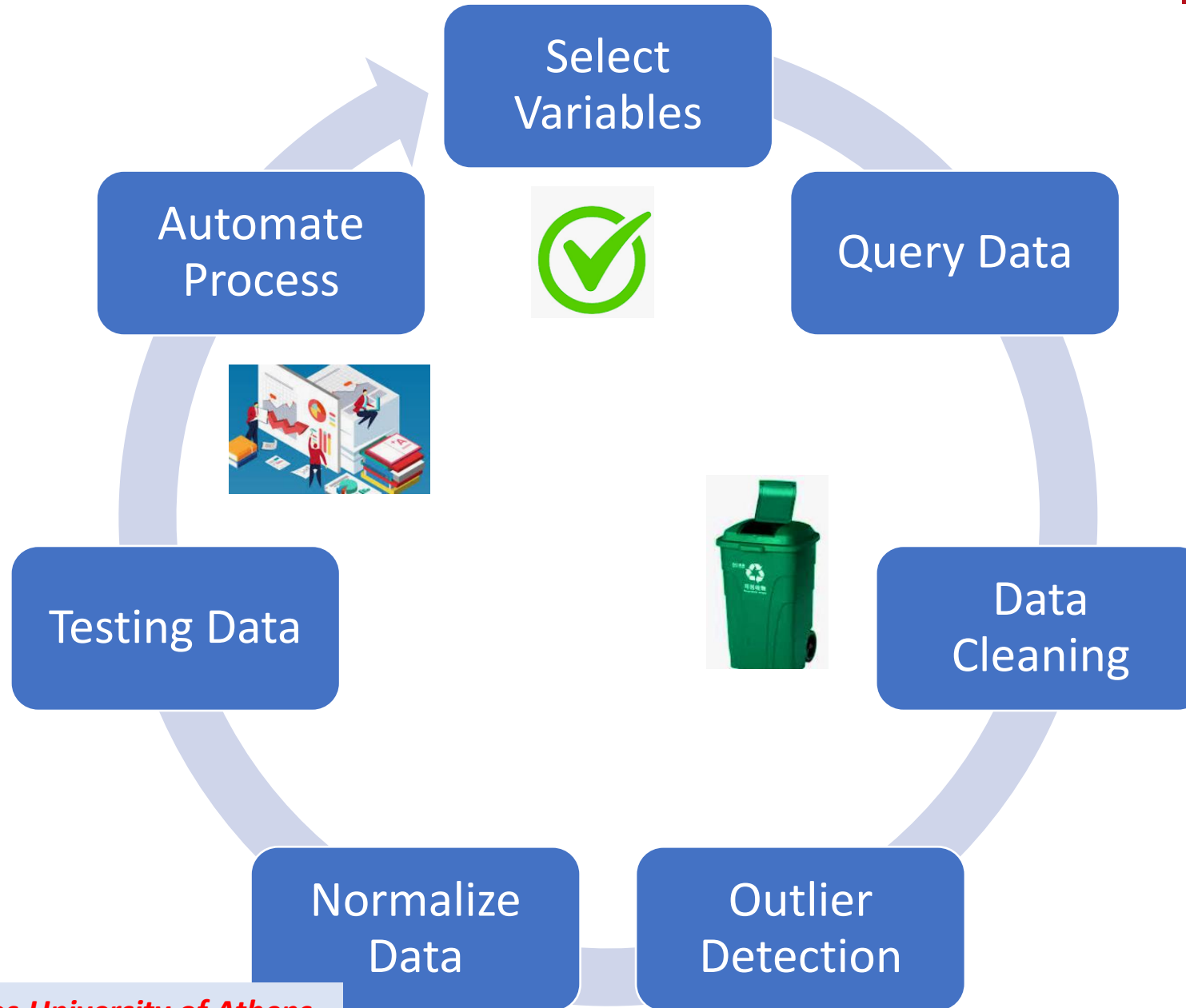- prediction of health **outcomes** & **Health Related Quality of Life (HRQoL)**

Source: (2019) Roberta Pastorino et al *European Journal of Public Health, Vol. 29, Supplement 3, 23–27*

Priorities

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From Big Data to Rational Decisions

Real World

Raw Data is Collected → Data is Processed → Clean Data

Data Analysis

Machine Learning Algorithms Statistical Models

Build Data Product

Communicate
Visualizations
Report Findings

Rational Decisions

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Select Variables

Query Data

Data Cleaning

Outlier Detection

Normalize Data

Testing Data

Automate Process

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Areas of Collaboration

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Big Data in a Pharmacy System

Use of Big data to Promote Health System
Pharmacy Operations & Management

- Optimization of clinical decision
- Claims Cost and Utilization data
- Formulary management and adverse event monitoring
- Big data uses within Health System Pharmacy
- Enhanced application of evidence-based medicine
- Quality of care and patient outcomes
- Better care transitions via data related to medication adherence

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Source: Ma C, Smith HW, Chu C, Juarez D. Big data in pharmacy practice: Current use, challenges, and the future. *Integrated Pharm Res Pract.* 2015;4:91–99
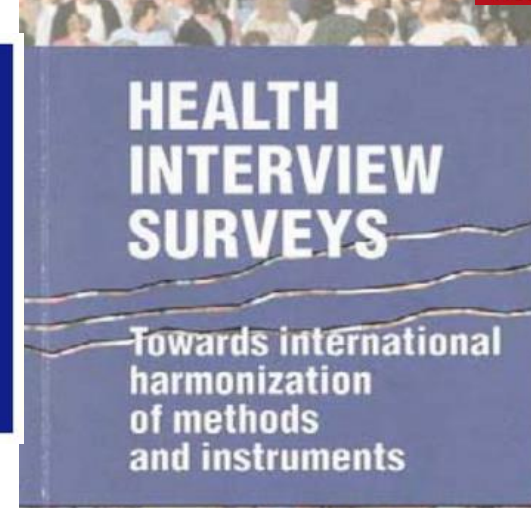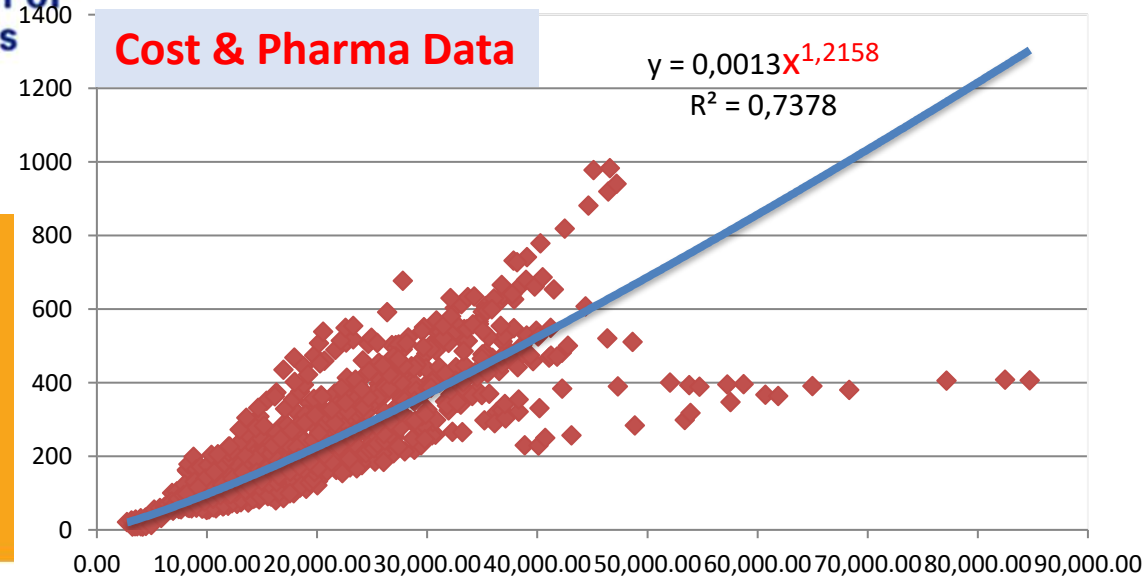
Big Data Sources

SHARE
SURVEY OF HEALTH, AGEING

Overview of modules and sub-modules and their recommended order (...) is as follows:

Code	Name
EHSM	**European Health Status Module**
HS	Health Status - Minimum European Health Module
CD	Diseases and chronic conditions
AC	Accidents and injuries
AW	Absence from work (due to health problems)
PL	Functional limitations
PC	Personal care activities
HA	Household activities
PN	Pain
MH	Mental health
EHCM	**European Health Care Module**
HO	Use of inpatient and day care
AM	Use of ambulatory and home care
MD	Medicine use
PA	Preventive services
UN	Unmet needs for health care
EHDM	**European Health Determi...**
BM	Weight and height
PE	Physical activity / exercise
DH	Dietary habits
SK	Smoking
AL	Alcohol consumption
SS	Social support

EHES
Measuring the Health of Europeans

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HEALTH INTERVIEW SURVEYS

Towards international harmonization of methods and instruments

European Health Interview Survey (EHIS wave 3) Methodological manual

Re-edition | 2020 edition

Cost & Pharma Data

$y = 0{,}0013x^{1{,}2158}$
$R^2 = 0{,}7378$

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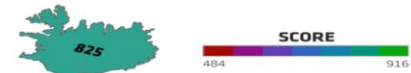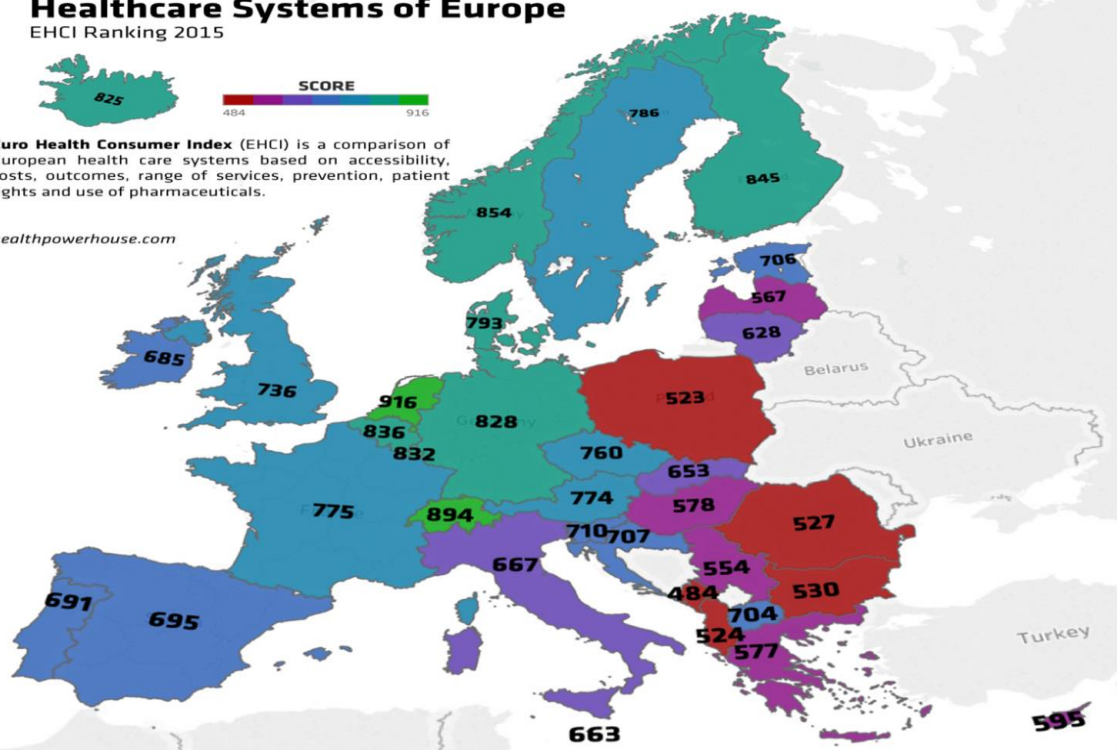
Healthcare Systems of Europe — EHCI Ranking 2015

Euro Health Consumer Index (EHCI) is a comparison of European health care systems based on accessibility, costs, outcomes, range of services, prevention, patient rights and use of pharmaceuticals.
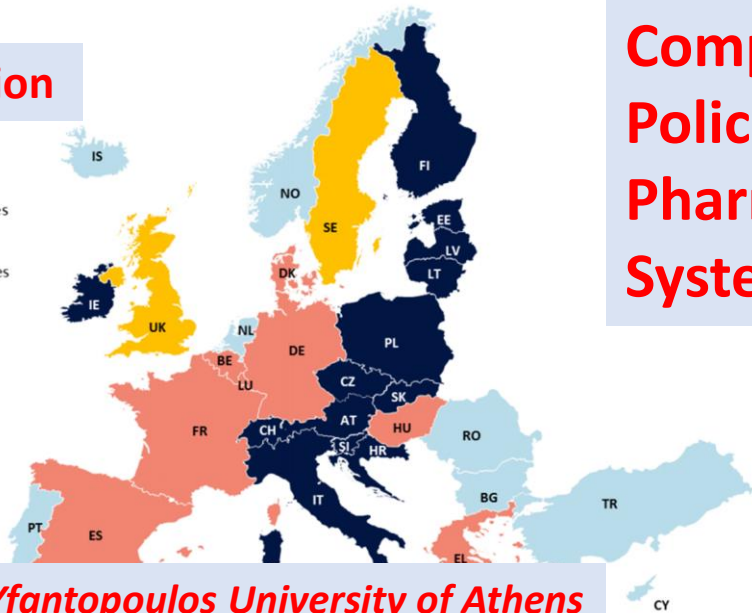
healthpowerhouse.com

E-Regulation — Regular revisions required by law in EPR

E- Prescription — Types of medicines regulated by EPR
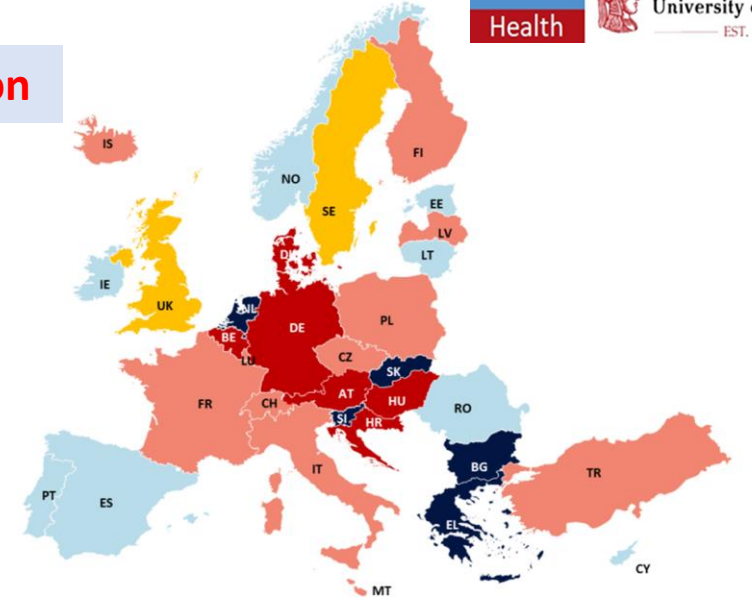
Pricing & Procurement — Calculation method of reference prices in EPR

Comparative Policies on Pharmaceutical Systems

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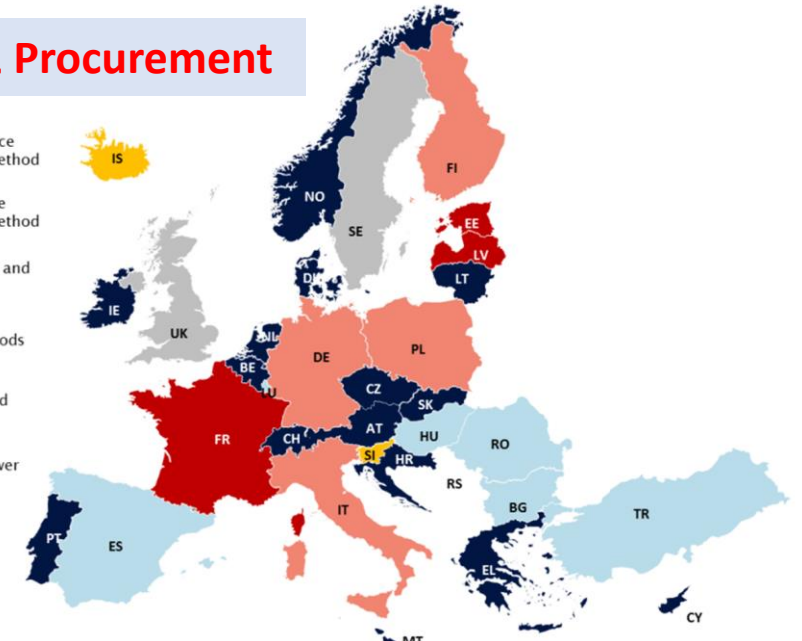
Key Messages: Move Towards Data Driven Decisions
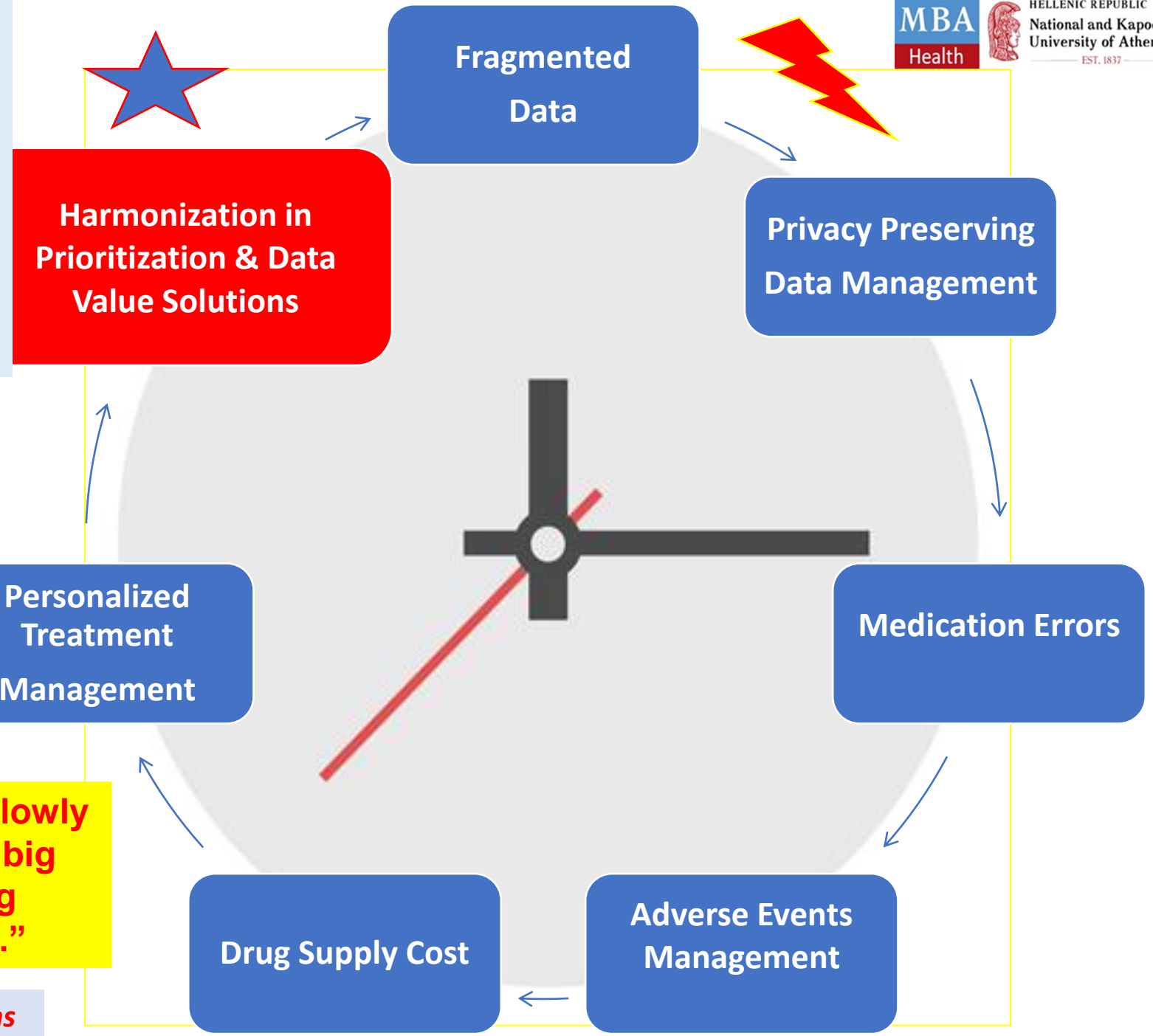
Thanks for your Attention
Email : yfantopoulos@gmail.com

Take Away

"We are moving slowly into an era where big data is the starting point, not the end."

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Fragmented Data

Harmonization in Prioritization & Data Value Solutions

Privacy Preserving Data Management

Personalized Treatment Management

Medication Errors

Drug Supply Cost

Adverse Events Management