



The European Institute For
Innovation Through Health Data

**WE NEED TO MAKE MORE
USE OF HEALTH DATA!**

**Prof Dipak Kalra
President of i~HD**

A patient is diagnosed with having a raised blood pressure

- Which blood pressure treatment is the best one to start with?
- There are several kinds of blood pressure lowering treatment a doctor could choose from



Thiazide or thiazide-like diuretics



Angiotensin-converting enzyme inhibitors,
angiotensin receptor blockers



Dihydropyridine or non-dihydropyridine
calcium channel blockers



- Which kind is most likely to protect a patient from complications, like having heart attack, a stroke or developing heart failure?

The challenge with finding out

- All of these drugs have some benefit
- The difference between them is small
- It may take many years for a patient develop a complication from raised blood pressure
- So, a large number of patients need to be studied over a long period to discover if one of these drug categories is better than the others

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Comprehensive comparative effectiveness and safety of first-line antihypertensive drug classes: a systematic, multinational, large-scale analysis

[Prof Marc A Suchard, MD](#)   • [Martijn J Schuemie, PhD](#) • [Prof Harlan M Krumholz, MD](#) • [Seng Chan You, MD](#) • [RuiJun Chen, MD](#) • [Nicole Pratt, PhD](#) • et al. [Show all authors](#)

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The best choice?



Thiazide or thiazide-like diuretics



Angiotensin-converting enzyme inhibitors,
angiotensin receptor blockers



Dihydropyridine or non-dihydropyridine
calcium channel blockers



What made this research possible?

- 4.9 million records of patients treated for high blood pressure
- 9 large patient data bases in the US, Japan, South Korea and Germany
- Able to look back at the records over several years
- Able to extract data on 55 health and disease facts about each patient

- It would have taken 22,000 conventional clinical trials to generate this much data!
- The research took months rather than many years!
- Low cost of conducting that research

Some other research findings from “big data” research

>700 million patient records

new cancer risk prediction

200 new clinical measurements

better cardiac prevention

8,000 leukaemia outcomes

stronger case for treating elderly

174,000 prescriptions

quality of respiratory treatments

How have research results been used by health services?

- Demonstrated health improvements through using data
- in one healthcare system

33% decrease in heart disease deaths

50% decrease in HIV deaths

50% decrease in septicaemia deaths

67% decrease in pressure ulcers

We need to conduct more research from health data

How do diseases and treatments interact?

Which treatment gives the best results?

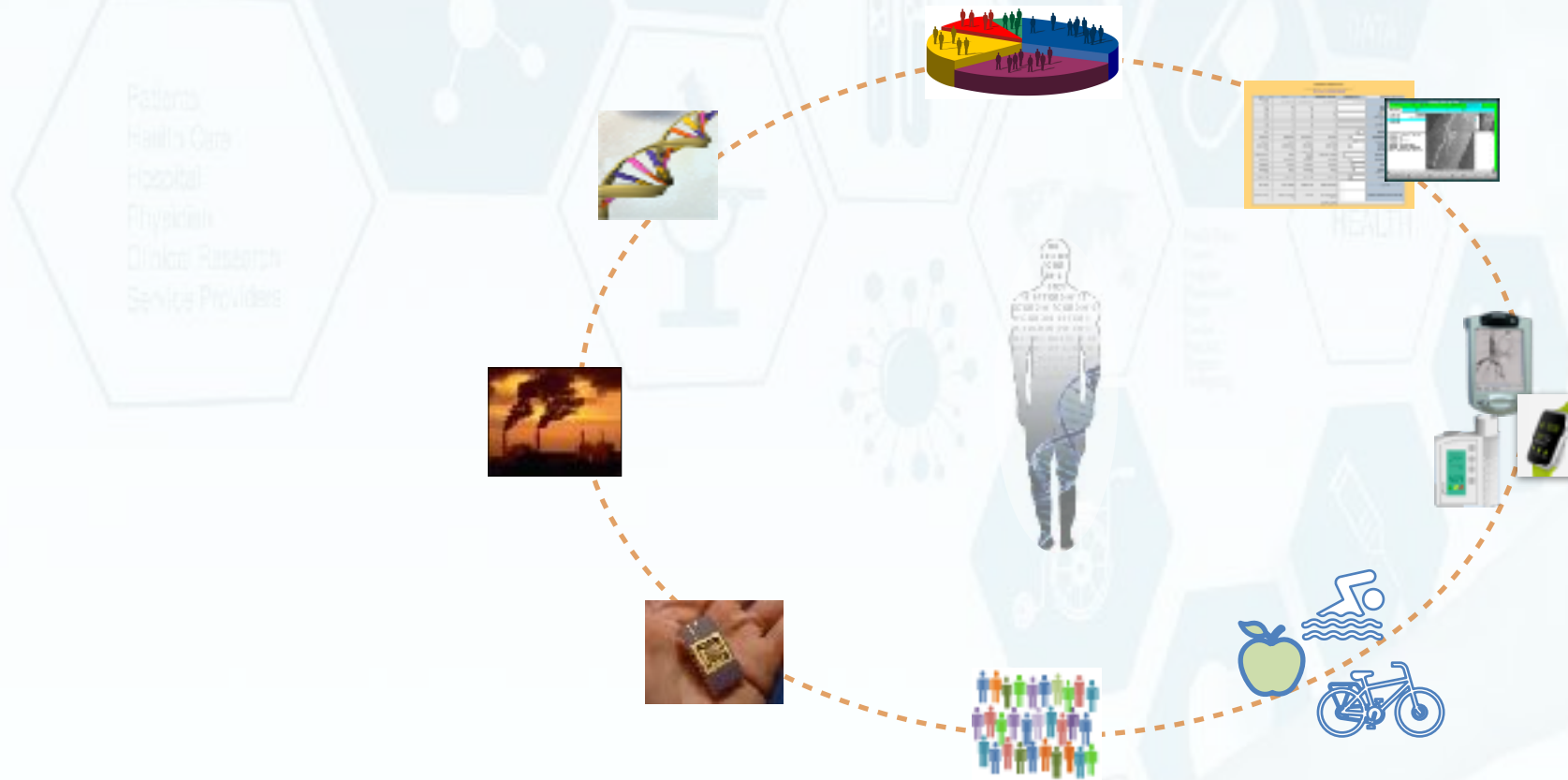
Is this new medicine safe?

Who should we screen for which diseases?

How are new viruses transmitted, treated?

... and to discover how we can best prevent illness and maintain health

Many kinds of health data are useful for research



**All this data brings opportunities for large scale research
to uncover new knowledge about disease + insights into health
= better ways to improve health**

If we are to scale up health data research, by many organisations, across many countries

We all need trust

- Data protection regulations prioritise the **rights of the individual** to privacy
- Clinical research can bring important benefits **to society**
- Many surveys indicate **patients are in favour** of their data being re-used for research
- **We need to find the right balance between protecting the individual and benefits for the individual - and society**
- **We can only succeed if we engage everyone in this mission!**

Patients
Health Care
Hospital
Physicians
Clinical Research
Service Providers



Data **saves** lives.eu