Next Generation Health Technology Assessment to support patient-centred, societally oriented, real-time decision-making in Diabetes

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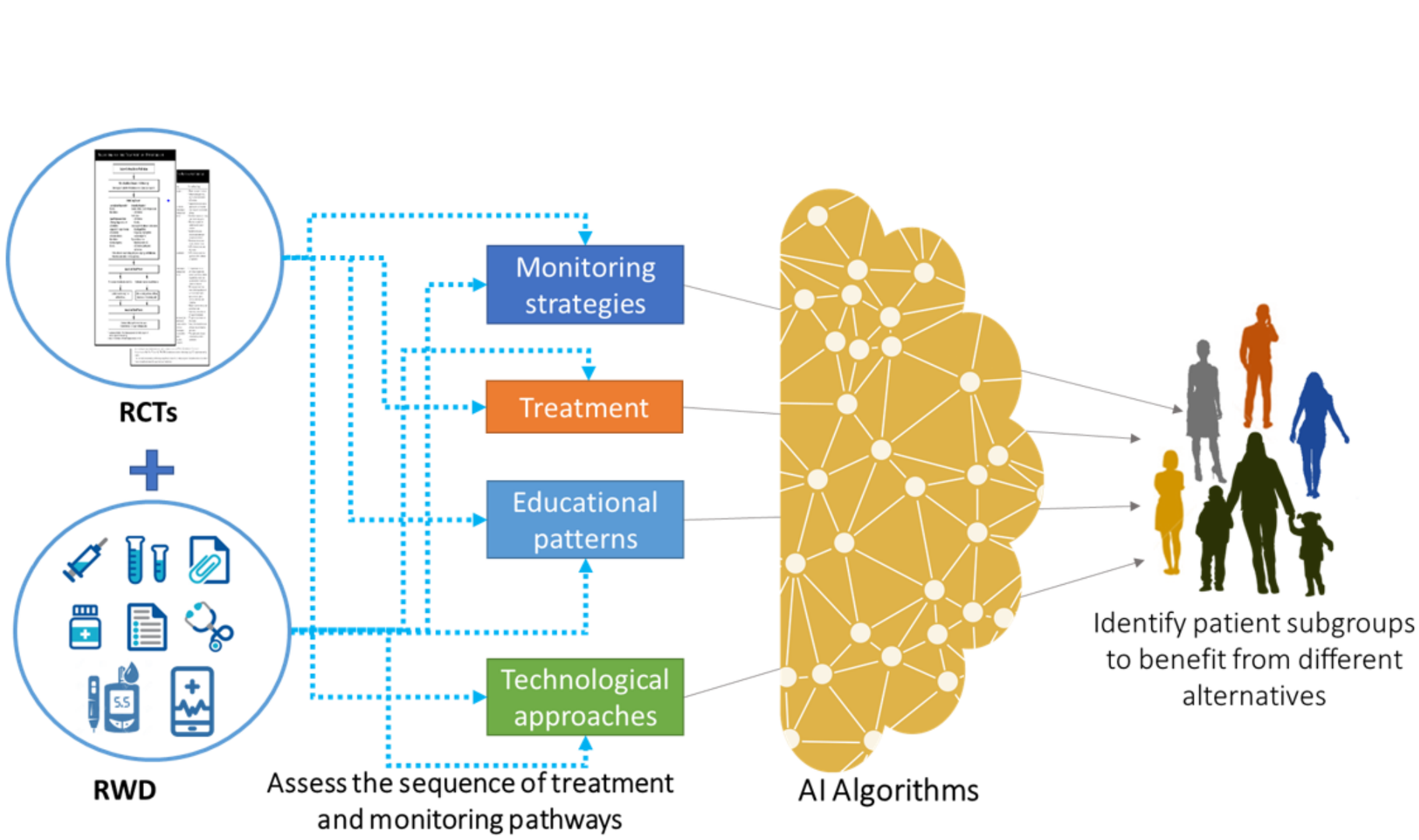
Background and Aims. The current use of Health Technology Assessment (HTA) as a supporting tool for decision-making still varies considerably across different healthcare systems in Europe thus resulting in inefficiency of actual reporting of HTA. The new H2020 project, HTx (htx-h2020.eu) aims to develop a framework for next generation HTA that supports patient-centred, societally-oriented, real-time decision-making for integrated healthcare. Four different case studies will be performed to cover different types of disease areas, technologies and treatment strategies, one of them is focused on diabetes ("CS2: The use of lifestyle interventions, medical devices and e-health technologies in T1DM and T2DM").

Methods. HTx proposes the use of methods to bring together data from different sources such as Randomized Controlled Trials (RCT) and real-world data (RWD) with classical prediction modelling and artificial intelligence algorithms to integrate existing evidence and estimate relative clinical effectiveness and cost-effectiveness in complicated treatment and monitoring pathways.



T1DM

Drugs	Multiple Dose Injection, CSII
Monitoring Devices	Glucose meters, CGMS, CSII
Technology	E-health, m-health
Age Groups	Children, adolescents, adults

T2DM

Drugs	MDI, Oral Antidiabetic Drugs
Monitoring Devices	Glucose meters, CGMS
Technology Education	E-health, lifestyle modification: physical activity, diet, sleep, etc.
Age Group	Adults

Next Generation Health Technology Assessment

Available data sources of RWD

A. Maastricht Study
Participants aged between 40 and 75 years old, 10 year follow up
The study to date has recruited ~8000 participants (25% with T2DM, 75% general population).

B. Telemonitoring study, University of Pécs Med.Sch. (Hungary)
Estimated enrolment rate of ~1000 to 1500 new patients with T1DM per year.

C. National Health Insurance Fund of Hungary
Aggregated data of patients with T1DM and T2DM.

D. Clinical Practice Research Datalink (CPRD)
EHR from GP Practices in UK with more than 11 million T1DM & T2DM patients. Representative of the UK general population in terms of age, sex and ethnicity.

E. Finnish Type 1 Diabetes Prediction and Prevention (DIPP) Study
T1DM genetic susceptible children. >17 000 children screened from birth to 15.
> 1,000 have seroconverted to positivity for multiple islet autoantibodies (ICA included), and > 500 have progressed to clinical T1DM.

F. Pediatric Diabetes Clinic, Oulu University Hospital
~ 500 children with T1DM, aged 1-20 years in regular follow- up.

G. Diabetes registry in Bulgaria
Anonymized and publicly accessible data source with T1DM and T2DM patients; owned by the National Health Insurance Fund in Bulgaria.

Conclusions. HTx will provide more accurate estimations of the differential health impact of the technologies in specific subgroups of patients with Diabetes; It will predict which treatments combinations are most beneficial and cost-effective and will facilitate tools that support patients and their healthcare providers in making personal decisions on the best treatment.

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