AVICENNE project: pharmaceutical algorithms set to perform medication pharmaceutical analysis

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https://www.eahp.eu/gpis/pharmaceutical-algorithms-perform-medication-pharmaceutical-analysis

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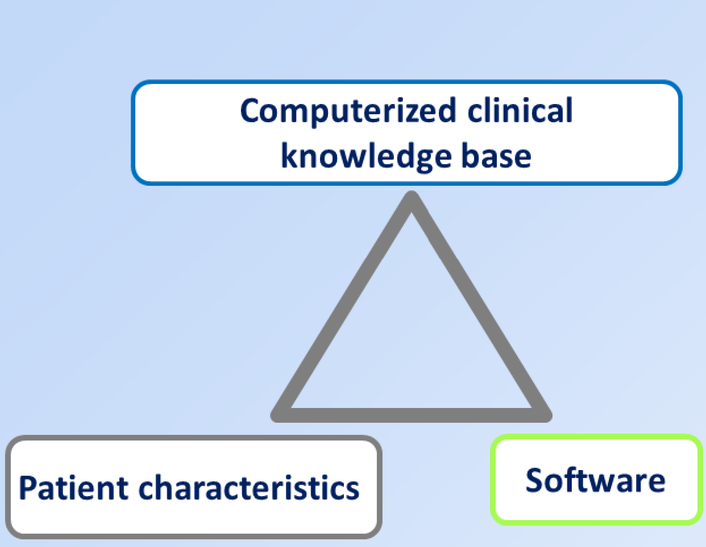
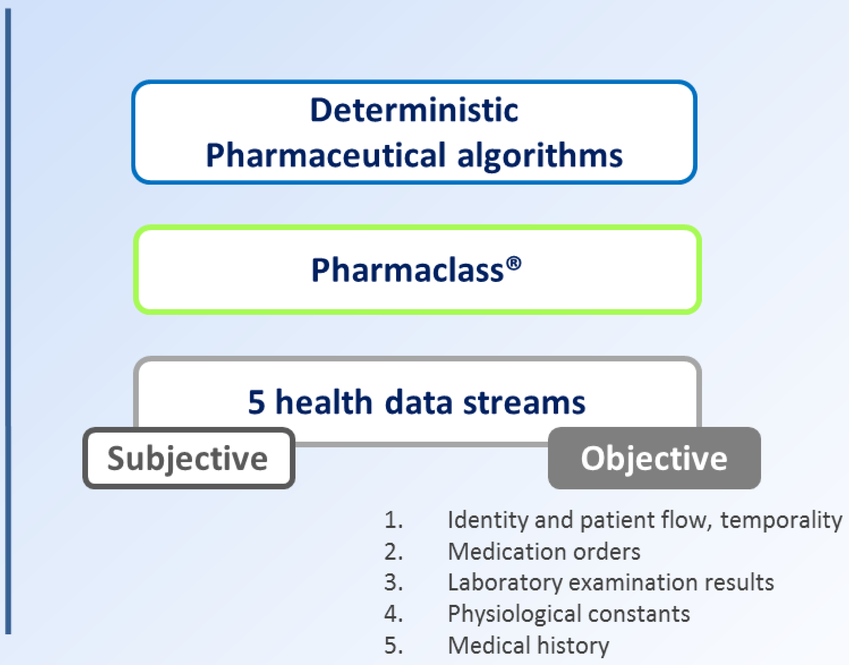
What is done?

A clinical decision support is integrated into the Health information system of a 11-health facilities group (5000 beds). It rests on the 3 following pillars:





The triple dynamic junction gives rise to the **AVICENNE Medication-related real time clinical decision support**

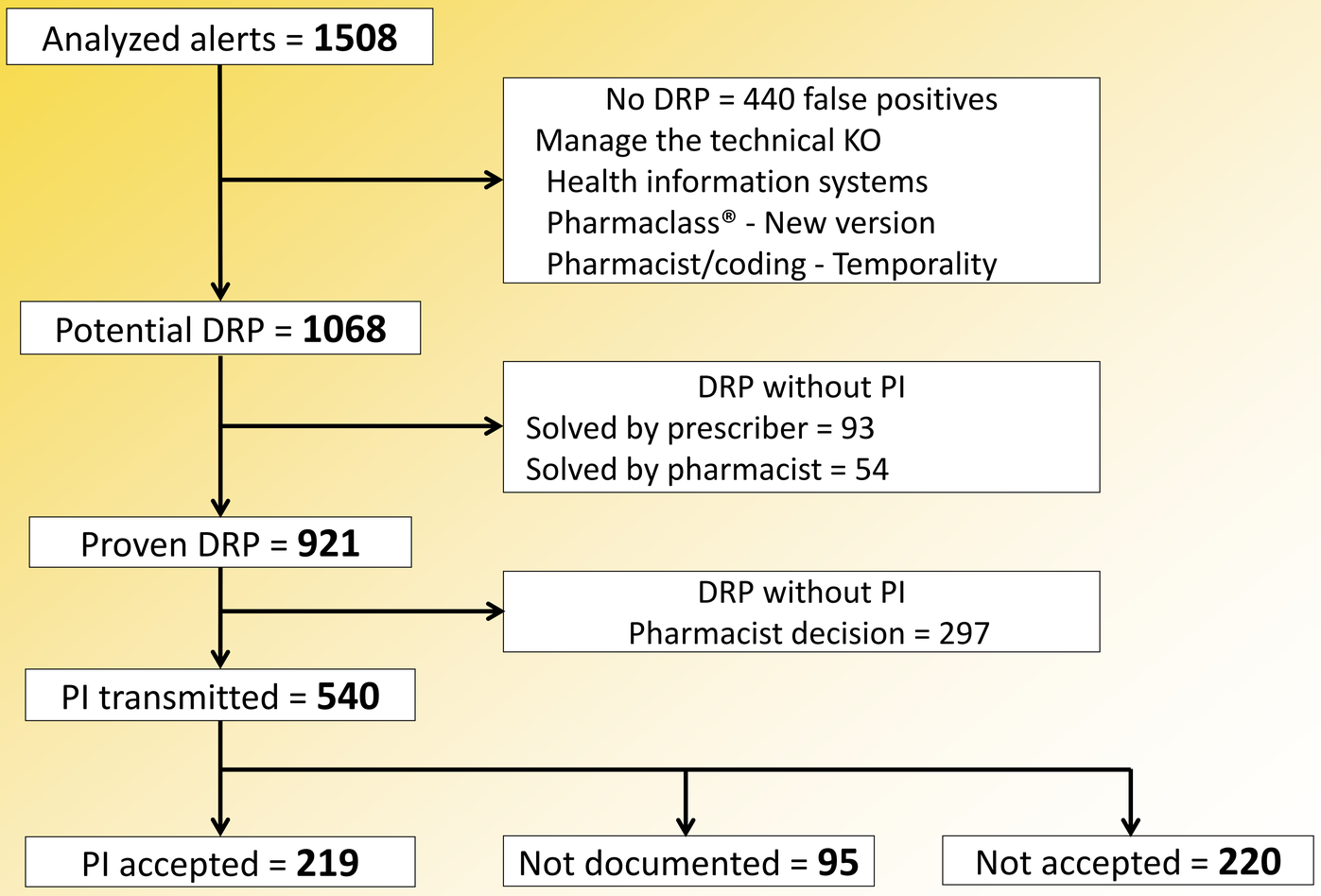
Pharmaceutical algorithms (PA) are conceptualized to improve the Drug related problems (DRP) detection and resolution.
They are structured with 5 elements:

- ❖ elementary equation which defines a specific DRP
- ❖ computerized encoded rule of the equation in Pharmaclass®
- ❖ DRP type, cause and consequence
- ❖ DRP resolution strategy
- ❖ pharmaceutical intervention

AVICENNE issue alerts analyzed by a pharmacist during a 9-months test period from january to september 2019

What is achieved?

71 PA were encoded into Pharmaclass®: 40 are targeting serious adverse drug events
1508 alerts were analyzed during the 125 days data collection period
540 Pharmaceutical interventions (PI) were transmitted to the prescribers



Why is it done?

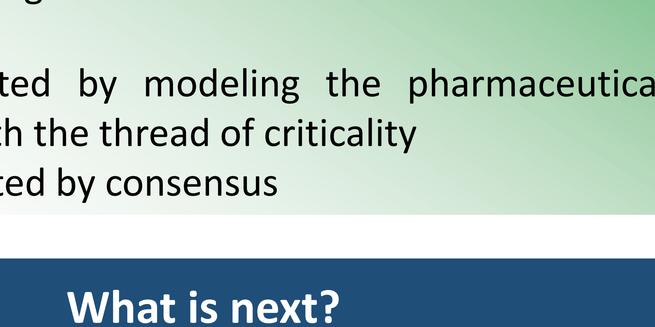
Annually drug iatrogenia costs $42 billion to health systems in the whole world
The WHO aims to reduce medication-related harm by 50% within 5 years in his 3rd patient safety challenge
According to EAHP statements all prescriptions should be reviewed by a hospital pharmacist
In France, 10 000 to 30 000 deaths per year are linked to medication

The pharmaceutical analysis practice is highly variable. It remains a challenge to promote as a safety barrier to prevent medication harm

The AVICENNE project targets digitalization of the pharmaceutical analysis for more quality in the daily practice

The pharmaceutical analysis target

	Production		Impact		
	One pharmacist	Team pharmacists	Physician	Patient	Society
DRP detection	Comprehensive	Consensual	Accepted	Clinical	Economical
PI formulation	Relevant		Amended order		
	Personalized				



How is it done?

Health data are lacking of semantic interoperability. Pharmaclass® overcomes this problem. It is able to query in real time the data from the different health information systems in the 2 experimentation facilities

A defined corpus of PA integrates guidelines on DRP resolution strategies

PA were created by modeling the pharmaceutical experiment with the thread of criticality
PA were validated by consensus

What is next?

Clinical pharmacy societies should host, share and update a national corpus of Pharmaceutical algorithms
Its educational interest has to be exploited

V. Luyet, V. Jordan von Gunten , P. Turini , J. Beney. MEDISCREEN: implementation of a tool for detecting patients at risk of adverse drug events via the electronic medical record. https://www.eahp.eu/24-NP-011
C.L. Tolley, S.P. Slight, A.K. Husband, N. Watson, D.W. Bates. Improving medication-related clinical decision support. Am J Health Syst Pharm. 2018 Feb 15;75(4):239-246. doi: 10.2146/ajhp16083