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The Kidney transplantation application (KiTapp): A visualization and contextualization tool in a kidney graft patients' cohort

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Kidney Transplantation

- Treatment of choice for ESRD (End-stage renal disease)
 - Follow-up reveals many complications
 - Rejection, cancer...
- Can we anticipate complications?**

Precision Medicine

- Optimization of medical care for a specific patient
- Smart use of all stored data
- Contextualization amongst his/her peers
 - Goal of targeted therapies – personalized monitoring

Age = 64 Sex = Male
BMI = 24.5

KiTapp

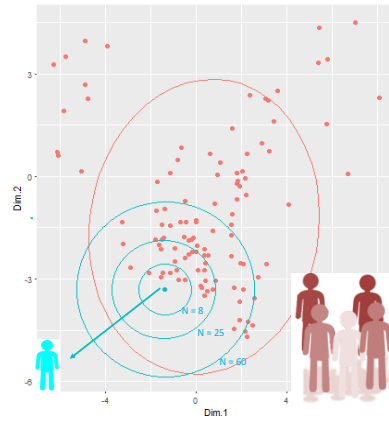
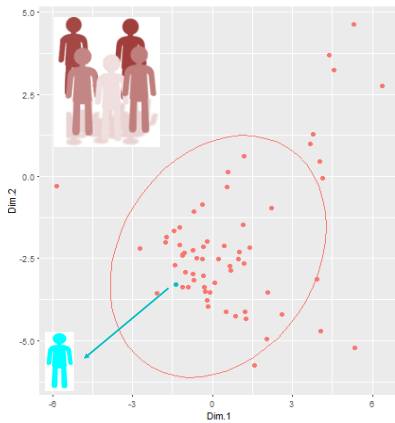
Referential contextualization :
Comparison with predefined groups

Populational contextualization :
Selection by filters or nearest neighbors

“DIVAT” Cohort
N=1500 patients

Expertise	Referential	Nearest neighbors	Filters
Clinical	++	+	+
Statistical	++	++	+
Computational	+	+	++

Example of a high risk population : patients >75 years old
64 patients



Population selected with filters :

- Age +/- 5 years
- Same sex
- BMI +/- 2



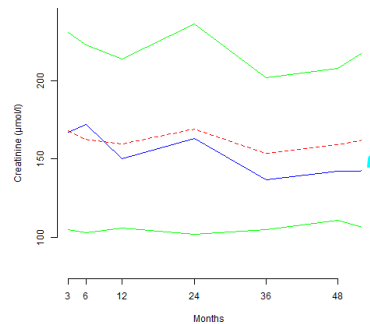
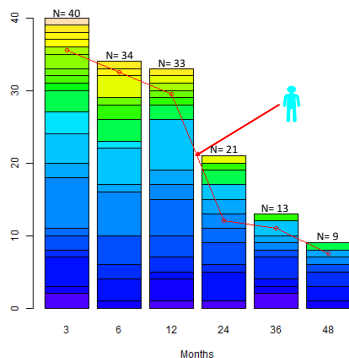
FAMD (Factorial Analysis of Mixed Data)

- Patient of interest
- Compared patients

Distribution of Tacrolimus doses on a period of 4 years for the old population. Our patient

Low High

Not all individuals have data at each visit.



Creatinine overtime for the patient of interest compared to the selected population.

- Patient
- Mean
- Standard deviation

Clinical ambition: support clinical decision by facilitating access to big data in a actionable manner
Technological ambition: software and algorithms developed here could be applicable to various chronic medical conditions