Case Study

Quality, equality, and efficiency in territorial planning at the ***Catalan Health Service (CatSalut)***

Big Data models with Machine Learning have also proven to be very powerful in the analysis of basic structured data such as the minimum basic data set (MBDS).

Executive summary

The Catalan Health Service (CatSalut) implements a strategy with Amalfi Analytics for the care of persons with mental health disorders and addictions which enables an increase of 25% of the budget.

It requires the analysis of processes and nursing in each region, given the priority to reverse the hospital admission model to community and ambulatory care.

"Technical Support is a limited resource and to have the autonomy to conduct análisis is something I value very highly. It is compulsory to be more efficient and Amalfi turns it into an easy task."

Montse Bustins, Manager, Demand Analysis and Activity Division, CatSalut

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The challenge

CatSalut did not have any visibility of patient fluxes between regions. The team were conscious there was unjustified mobility between centers and, although they could conduct statistical analysis after the fact, these would not allow to foresee or plan, and they also required an excessive investment in time.

The analysis of eating disorders was selected for the pilot of this solution.

The specific requirements for the project were:

Complement traditional indicators

- Percentage of assigned persons.
- Percentage of serviced persons.
- Table by region (Comunidad Autónoma).
- Age, gender, DRG diagrams, and other indicators, obtained in a ruled way.

With current and complete information, processing the MBDS as and when they became available, and to do so with all data.

This would allow to anticipate and correct any patient anomalous fluxes, providing each territory with the resources matching their needs.

Another requirement was not to need support from the IT team in order to use the system. The various MBDS were available in a shared folder, within the security perimeter within the national health service and with the usual access management.

The solution ALOE©

Apply innovative models based on Big Data technology to MBDS

Advanced Big Data models have proven to be especially useful when applied to management of *small data*. Amalfi has developed a product with leading development teams from Universitat Politècnica de Catalunya (UPC) and with teh expertise of the Demand Analysis and Activity Division of CatSalut.

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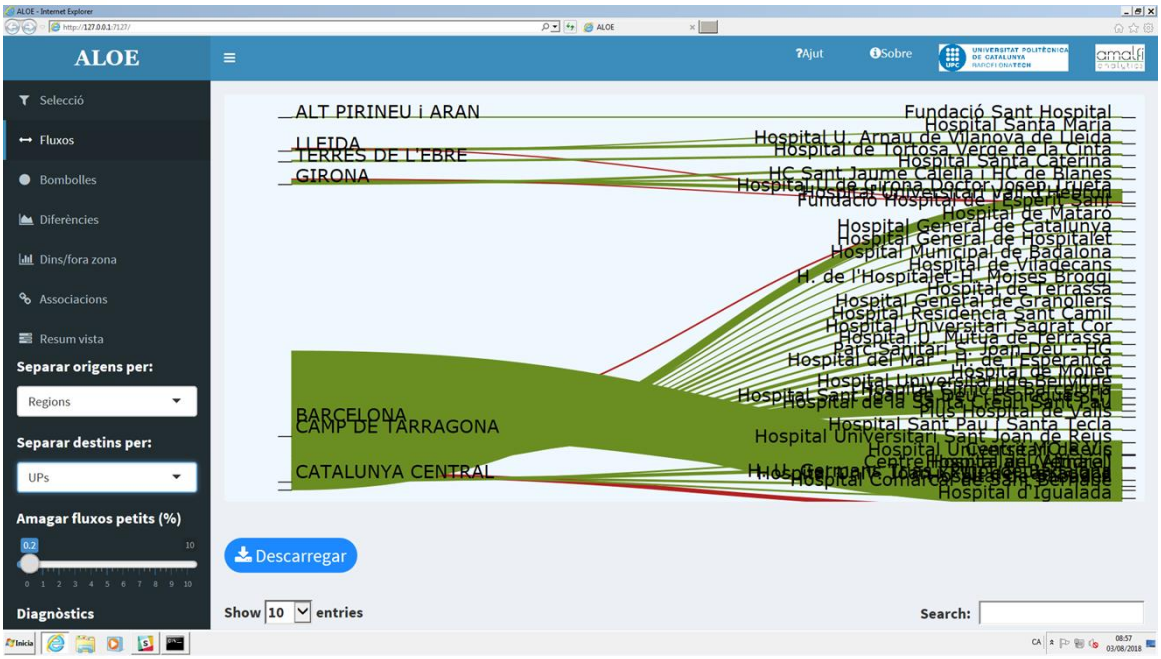
The basic product

An application that allows to analyze patient fluxes and their profiles from all perspectives within the MBDS.



The pilot used the MBDS from acute hospital admissions, nursing care and mental health, in order to obtain all eating disorder cases treated at any level during the previous year.

The person responsible of the pilot analyzed, in a completely autonomous way, every level, identifying anomalous fluxes and detecting differential patterns between patients depending on whether they were treated in their assigned area or elsewhere.

Results

First objective: efficiency

Results have been very well received, since the process of requesting – and depending on – IT and technical resources to analyze patient fluxes has been reduced by 80%.

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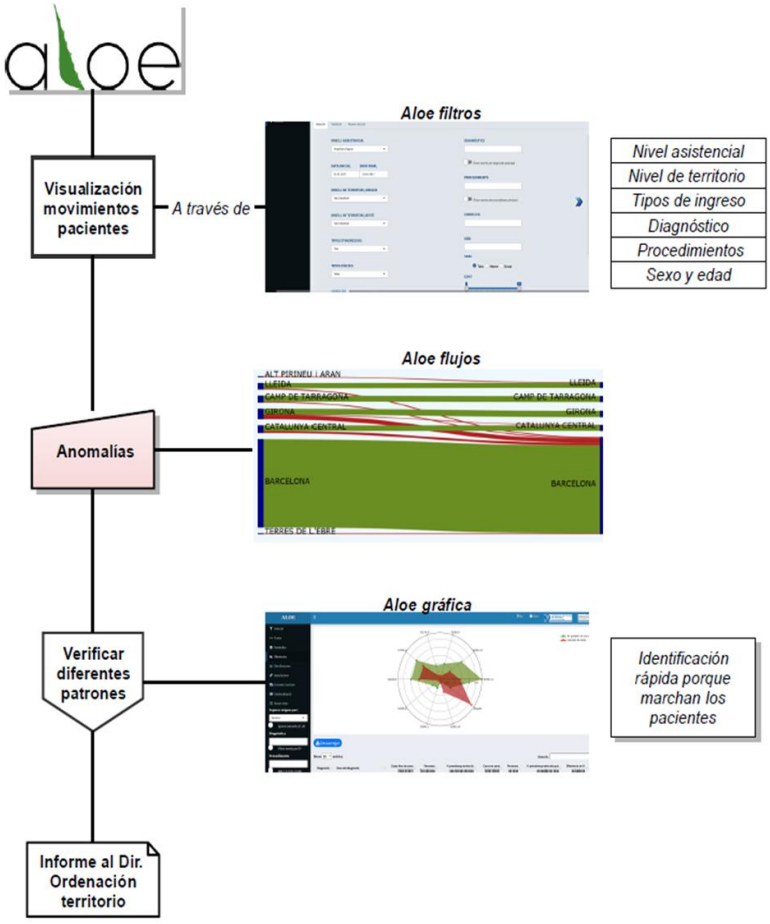
“With Amalfi, weeks’ delays to obtain data have disappeared, as well as having to repeatedly ask technicians for processed tables.”

Montse Bustins, Manager, Demand Analysis and Activity Division, CatSalut



Second objective: quality

Quality problems have been detected and solved thanks to the quick identification of anomalies, and the team has been able to suggest corrective measures without delay.
After the initial pilot, the team will quantify healthcare results and the mid- and long-term economic impact.

It is expected to see a reduction in anomalous cases of up to 15%.

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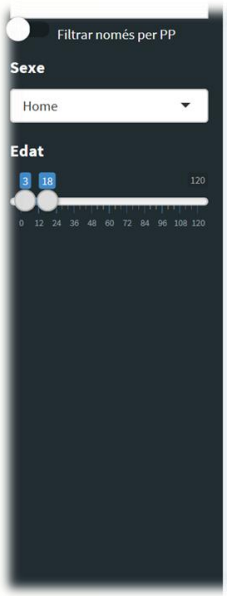
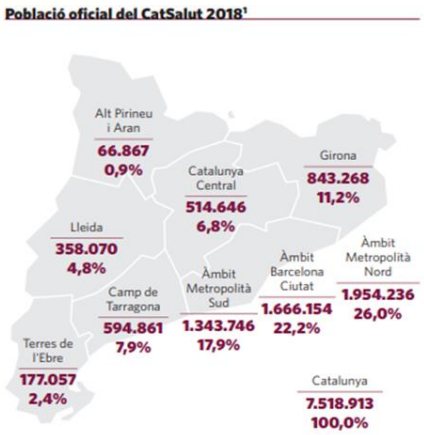


Primari	Nom del Diagnòstic Primari	(total 1421)	zona (total 1403)	en zona	de zona (total 18)	fora de zona	que marxen de zona
299.00	Trastorns autístics, estat actual o actiu	579	572	569	7	6	1.21
299.80	Altres trastorns generalitzats del desenvolupament especificats, estat actual o actiu	499	492	490	7	7	1.4
299.90	Trastorns generalitzats del desenvolupament no especificats, estat actual o actiu	190	187	186	3	3	1.58
314.01	Trastorn per dèficit d'atenció amb hiperactivitat	33	33	32	0	0	0
299.91	Trastorns generalitzats del desenvolupament no especificats, estat residual	22	22	22	0	0	0
299.81	Altres trastorns generalitzats del desenvolupament especificats, estat residual	15	15	15	0	0	0
299.01	Trastorns autístics, estat residual	12	12	12	0	0	0
299.0	Trastorns autístics	6	6	6	0	0	0
299.8	Altres trastorns generalitzats del desenvolupament especificats	4	4	4	0	0	0

Third objective: equality

Having a global vision means being better informed, which facilitates decision making for resource allocation.

This impact is expected to be long term, but it is expected to be very positive.



Return on investment is guaranteed in the short term simply by the reduced requirement of technician time for the most critical programs.

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