

IMPLEMENTATION IN A PHARMACY SERVICE OF A BIG DATA ANALYSIS PROGRAMME FOR SUCCESSFUL TREATMENT



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What was done?

The Pharmacy Service of a university hospital has implemented Konstanz Information Miner (KNIME) data analysis and develop successful treatment project to **optimize the stock management** of several medicines.

Why was it done?

The growing technological development of pharmacy services involves the coexistence of traditional warehouses with automated medicine dispensing systems controlled by different computer programs. The information is split into different systems and data bases giving rise to possible errors due to the greater complexity. This is a threat but also an opportunity for the hospital pharmacist to lead the development, review, and improvement of medicine use processes and the use of health technologies to improve quality of care, patients' safety and reduce costs. KNIME data analysis covered the need of our Pharmacy Service to blend data from any source in a single file simplifying the process.

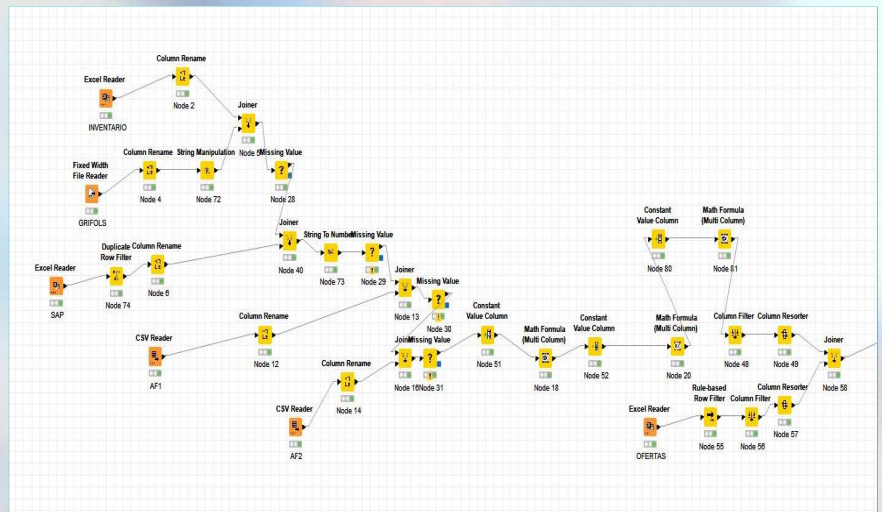
How was it done?

An initial algorithm was designed by the union of 7 files and can be executed at any time to obtain the updated data.

What has been achieved?

This file provides up-to-date information about the stocks, stock-outs, consumptions, orders and purchasing data of all medicines (average price, laboratory, date and number of orders, units to be received).

In addition, KNIME calculated the coverage time in days and months from weekly and monthly consumption, and the current stock in the warehouses, obtaining a global vision of highest turnaround pharmaceuticals drugs.



The program also allows to link and merge data of the list for shortages of medicines, supply disruptions and restocking time, and to improve the storing, delivering and administering of **COVID-19 vaccines**.

KNIME program has been especially important in our Pharmacy Service to get better care outcomes and more precise medication ordering, which allows significantly higher patient safety.

What's next?

KNIME is a tool that could be successfully implemented and appropriately generalized as recommended to all Pharmacy Services that use different data sources and want to have a **generalized view of the information**.

KNIME represents an advance in the stock and purchase management of medicines specialties to work **more efficiently**, which improve patient care and safety. Digital medication management also contributes to greener pharmacies by preventing unnecessary overstocking and thus excessive disposal arising from expired medications.

