Visual analytics applied to the monitoring of high-cost medicines used in Rheumatology, in a hospital of high complexity in Latin America.

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Introduction: Rheumatology diseases generate a great social and economic impact because of the costs derived from the medications required for their treatment. Access to medicines, such as biological ones, is hindered by reduced levels of coverage, financial fragility of health systems, limitations in distribution and problems of access to services. Currently, **in the Military Hospital,** patients with prescription of high-cost rheumatology medications are monitored, through the manual and periodic calculation of indicators that does not guarantee efficient monitoring of this group of patients.

Objectives: To develop a visualization and monitoring software from the administrative database of prescription medications that allows, in real time and automatically, to characterize the population with rheumatic disease that has been prescribed high-cost medications, and follow up in terms of sociodemographic variables, diagnosis, type of medication, dose and associated costs, and variations in time, in order to support decision making in a hospital of high complexity in Latin America.

Methodology: The tool was developed by an interdisciplinary group of computing engineers, rheumatologists and economists. The architecture of the proposed solution was described in terms of the C4 model, which illustrates the software architecture in relation to the context, containers, components and code.
Results: A tool was developed Based on database of medical records (Oracle), with a module charged of extraction and transformation of data(SQL&Python), an finally, a visual analytics interactive environment to navigate, summarize and analyze this data to support decision making (HTML5, JS,d3, Vegalite).image 1 (image of one of the software visualizations)

Conclusions:
A high interactive web software was developed in order to improve the monitoring and decision making of rheumatologist that allows to monitor in real time patients with rheumatic conditions with high-cost medications.

Trends in biologic prescription by month and associated cost