



www.sjdhospitalbarcelona.org

INDUSTRY

Healthcare

PROFILE

SJD Barcelona Children's Hospital, one of Europe's leading maternal and child hospitals, is pioneering digital innovation to redefine pediatric care. SJD is among the top five pediatric centers in Europe in terms of the number of patients treated and specialization, handling more than 25,000 hospital admissions, 200,000 outpatient consultations, and 115,000 emergency cases annually.

“

The Denodo Platform equips us to maintain stricter monitoring of patients admitted to the hospital's critical care units through real-time score calculations, enabling us to proactively identify complex clinical situations.”

Dr. Francesc García Cuyàs

Director of Digital Strategy and Data (CDDO)



- Amazon Redshift Ready
- Data & Analytics Software Competency
- AWS Marketplace Seller

Healing with Data: How SJD Barcelona Children's Hospital is Transforming Pediatric Care for Faster Recovery and Better Outcomes

SJD Barcelona Children's Hospital's "liquid hospital" concept, inspired by the idea of a fluid and adaptable healthcare system, underpins its approach to delivering high-quality, proactive, and patient-centric care at home.

With a mission to keep children at home as much as possible rather than in the hospital, SJD wanted to implement an advanced real-time monitoring center to enhance decision-making and proactive care.

Business Need

To optimize decision-making, it was necessary for the hospital to shift from a reactive care model to a proactive one. Given the complex structure of healthcare centers, data integration becomes even more difficult.

Additionally, due to the diverse set of applications used for hospital operations management, SJD encountered challenges in data analysis and utilization, including managing multiple data sources, the inability to access real-time patient monitoring data, and integration issues with external services such as the Salesforce-based patient portal. The hospital also needed access to previously unconsidered data types, including genetic data, to improve patient outcomes.

1. Delayed and Fragmented Data for Decision-Making

- Previously, patient vital signs were analyzed every 8-12 hours. This manual process limited the ability of healthcare professionals to calculate key clinical indicators and detect early signs of deterioration.
- Risk assessments for sepsis, bronchiolitis, and clinical decompensation were calculated manually in Excel just a few times a day, so decisions could not be made in the moment.

2. The Need for a More Proactive Care Model

- Traditional care models relied on reactive responses based on historical data rather than real-time patient monitoring to anticipate deteriorations.
- The hospital needed to shift towards predictive and proactive care, identifying at-risk patients before complications arose.

3. Data Governance and Integration Complexity

- The hospital's initial data lake could not deliver the expected results due to the lack of structured governance and clear use cases, making it difficult to extract meaningful value.
- Data from monitors (ICU, neonatal, surgery, etc.), drug administration, lab results, and patient records needed to be unified and properly governed for clinical and research applications.



HSJD's Clinical Command Center

The Solution

The hospital implemented a real-time data infrastructure with the Denodo Platform as the core semantic layer, unifying and streamlining patient data across multiple systems.

1. Real-Time Data Ingestion and AI-Driven Monitoring

- A real-time ingestion layer was established to capture and process data from the PICU, neonatal unit, and cardiology department.
- AI-driven analytics now provide live risk scores for sepsis, bronchiolitis, and clinical decompensation, enabling immediate interventions.

2. AWS and Denodo, together for Scalability and Governance

- AWS Cloud, combined with Denodo's logical data management capabilities, enabled seamless, scalable data integration across multiple hospital departments.

3. A Predictive and Proactive Healthcare Model

- Dashboards with real-time insights were implemented, enabling healthcare professionals to monitor patient conditions and anticipate risks proactively.

4. Data for Research and Collaboration

- The Denodo Platform's strong data governance, security, and privacy capabilities enabled SJD to establish data laboratories, empowering third parties, startups, and researchers to access anonymized patient data for innovative healthcare solutions.

Benefits



Immediate Clinical Insights: Risk scores are now updated every 30 seconds, compared to the previous 8-12 hour intervals, enabling healthcare professionals to instantly detect and respond to changes. The hospital's "liquid hospital" concept, inspired by the idea of a fluid and adaptable healthcare system, underpins its approach to delivering high-quality, proactive, and patient-centric care at home.



Proactive Patient Care: AI-driven alerts enable preventative interventions, helping healthcare professionals identify at-risk patients before symptoms worsen, enabling proactive rather than reactionary treatment.



Unified and Governed SJD Data Model: The Denodo Platform enables SJD to interact with a single, logical data model that is fully documented and governed, simplifying access across multiple operational and analytical systems. Additionally, it facilitates seamless data exchange using global healthcare standards, such as OMOP (OHDSI) and FHIR (HL7), without data duplication - enabling agility, security, and real-time-governed data access.



Seamless and Secure Data Access: Together with AWS, the Denodo Platform provides a single source of truth for all users, including healthcare professionals, researchers, and back-office operations - streamlining data access and ensuring data authenticity.

SJD Barcelona Children's Hospital has successfully transitioned from a reactive healthcare model to a real-time, data-driven hospital that is ready to leverage AI for advanced analytics and enhanced patient care. By combining Denodo's logical approach to data management with AI analytics, SJD is setting a new benchmark in pediatric healthcare – data is not just collected, but transformed into real-time, actionable insights that drive better patient outcomes.



Visit www.denodo.com | Email info@denodo.com | Discover community.denodo.com

available in
aws marketplace