

HIPS: How a Health Intelligence Platform can help revolutionize Healthcare and VBHC

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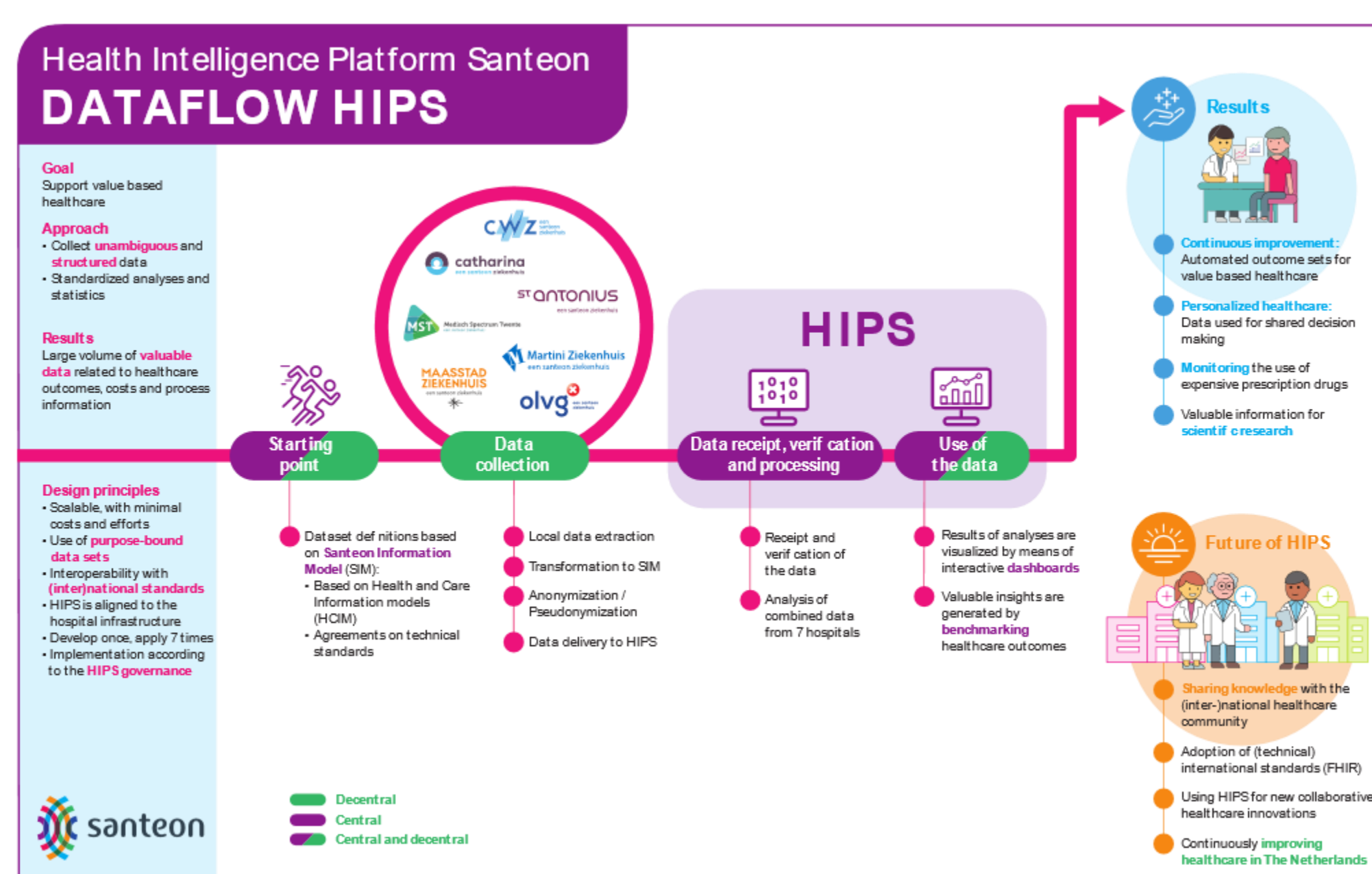
Background

Santeon was founded with the aim of improving health outcomes through continuous evaluation and open discussion between seven healthcare providers. Santeon's value-based healthcare program currently runs for 16 diseases, and aims to optimize healthcare quality and to reduce costs. To further improve our value-based healthcare program, we aimed to develop the Health Intelligence Platform Santeon (HIPS) to automated insights in care outcomes and healthcare costs.



Methods

All seven hospitals with two different electronic health record systems participated in developing HIPS. Five hospitals had HiX (Chipsoft) and two had Epic at their disposal, all with their own implementation and use of heterogeneous data standards. To successfully exchange data between the seven hospitals and HIPS an information model based on (inter)national standards (Health and Care Clinical Information Models and Fast Health Interoperability Resources) was designed. Subsequently, to extract, anonymize and transfer the data from the hospitals to the central platform, modular software

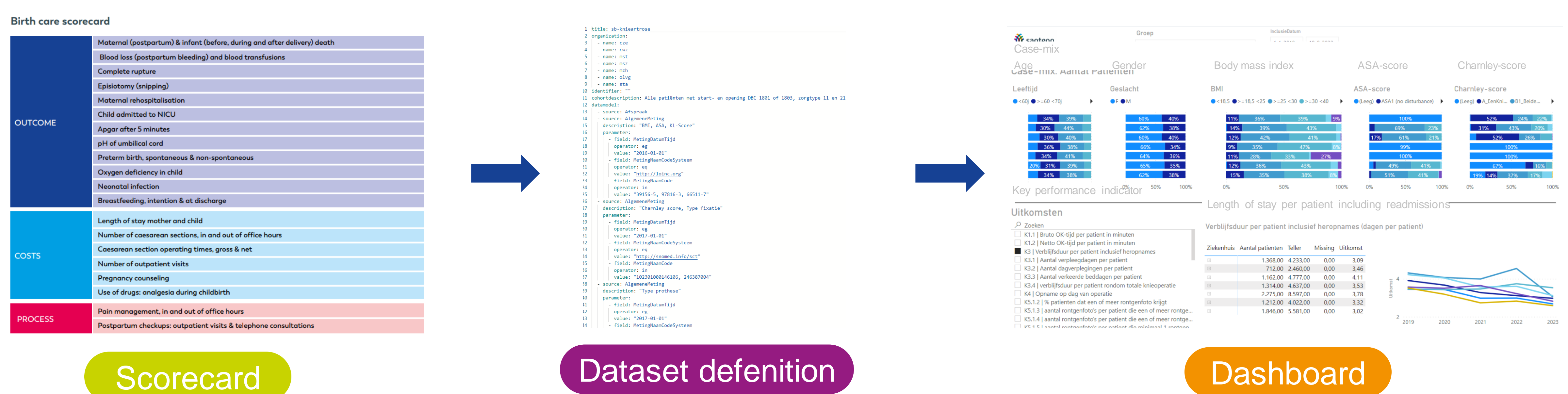


called the "dataset generator" was developed using Go Lang. On HIPS the data was stored in a Microsoft Azure cloud environment. Using automatic pipelines, key performance indicators (KPIs) were calculated using R.

These KPIs were then presented in dynamic PowerBI reports and discussed in multidisciplinary teams.

Results

The information model consisted of 18 resources. The model was able to support all our value-based health care use cases and to harmonize the different standards used by the participating hospitals. To date, all seven hospitals are (demand-driven and frequently) uploading data to the platform. Currently, reports for eight use cases are available for healthcare professionals. For further analyses, data-analyst from the seven hospitals can excise the data by login on to a virtual desktop. Thanks to the Health Intelligence Platform Santeon our healthcare professionals get short term feedback on their treatments and outcomes through interactive dashboards. Comparing data has become much more efficient due to the fact that all the hospitals provide harmonized data in a standardized format and data is processed in a uniform way. In a proof of concept, we also developed a patients' like me dashboard for breast cancer. In addition, we are able to report on the quality of the data through dashboards which are also available for the participating hospitals.



Conclusion

We developed a Health Intelligence Platform that is able to automatically extract, harmonize and anonymize data from primary data resources within seven hospitals and to transfer, process and visualize the data into interactive dashboards for healthcare professionals without any manual step needed. Results are encouraging and justify further scale-up where we aim to have 25 value-based healthcare trajectories in 2025. In the near future, the patient level data on HIPS will be further used for shared decision making and health technology assessments to prove the added value of our value-based healthcare program.



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