PSQ1022: Use of linked data sources in dynamic dashboards to visualize hospital practice differences in medication use and outcomes

van Breeschoten J., Ismail R.K., Wouters M.W.J.M, de Boer A., van den Eertwegh A.J., van Dartel M., van Loosen C.T., Hilarius D.L

What was done?

In the Dutch Institute for Clinical Auditing (DICA) medicines project, administrative data on the use of expensive drugs from hospital pharmacies were linked to clinical data from national quality registries and hospital declaration data.

Why was it done?

New anti-cancer drugs obtain approval based on limited numbers of highly selected patients and mostly surrogate outcomes. The external validity of RCTs is limited, leading to a gap of knowledge in the real-world effectiveness of expensive drugs in clinical practice.

How was it done?

Different existing sources of data were linked to provide insights

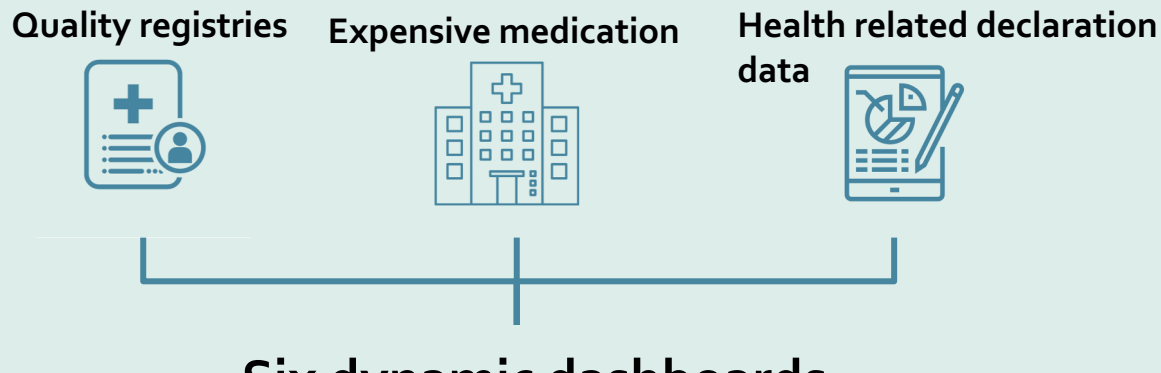

Figure 1. Data sources used in the DICA medicines program

What was achieved?

Hospital pharmacists and medical specialists gained insight into their hospitals expensive drugs use, the costs and treatment patterns in patient groups, compared to other hospitals. By relating outcomes to a benchmark of all participating hospitals, we were able to report results based on a relatively large population.

Impressions of the dashboards are shown in the figures below. Dashboards include the time-to-next treatment **(Figure 2)**, a Sankey diagram of the therapy flow **(Figure 3)**, boxplots of the cycles per patient **(Figure 4)** and a head-to-head comparison of treatments **(Figure 5)**.

Head-to-head comparison

Figure 5. Barchart of the costs over time

Time to next treatment

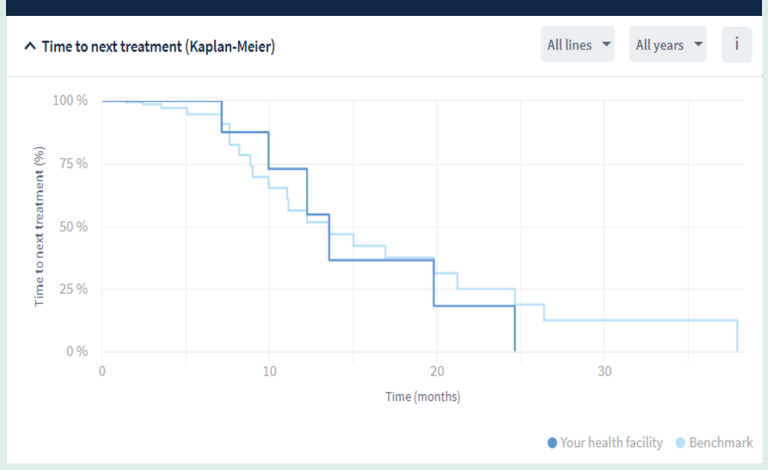

Figure 2. Kaplan-Meier estimates of the time to next treatment

Therapy flow

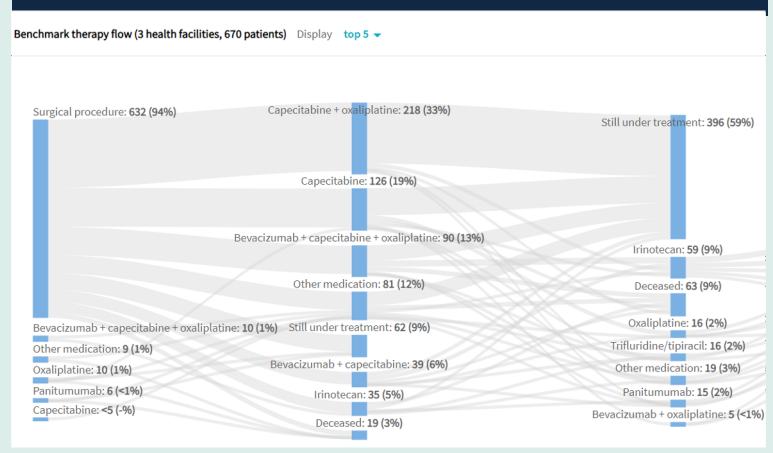

Figure 3. Sankey diagram showing the therapy flow of patients

Cycles per patient

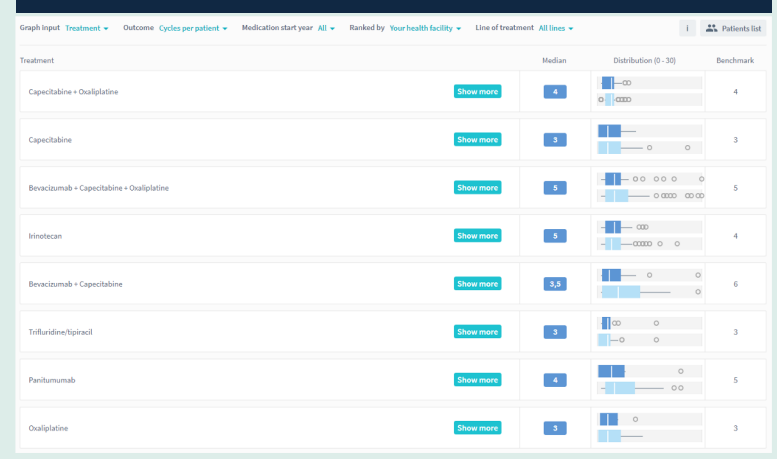

Figure 4. Boxplots with the number of cycles per patient

What is next?

- The DICA medicines project is an example of good practice as it uses **available data sources without any additional registration burden**.
- The project could serve as a **blueprint for other clinical healthcare settings** to link available sources of data.
- In the future, the dashboards will be extended with PROMs data.
- The focus of the program will be to include all hospitals in the Netherlands and to extend the dashboards with more features.

Contact data

Contact us on j.vanbreeschoten@dica.nl or r.ismail@dica.nl.