

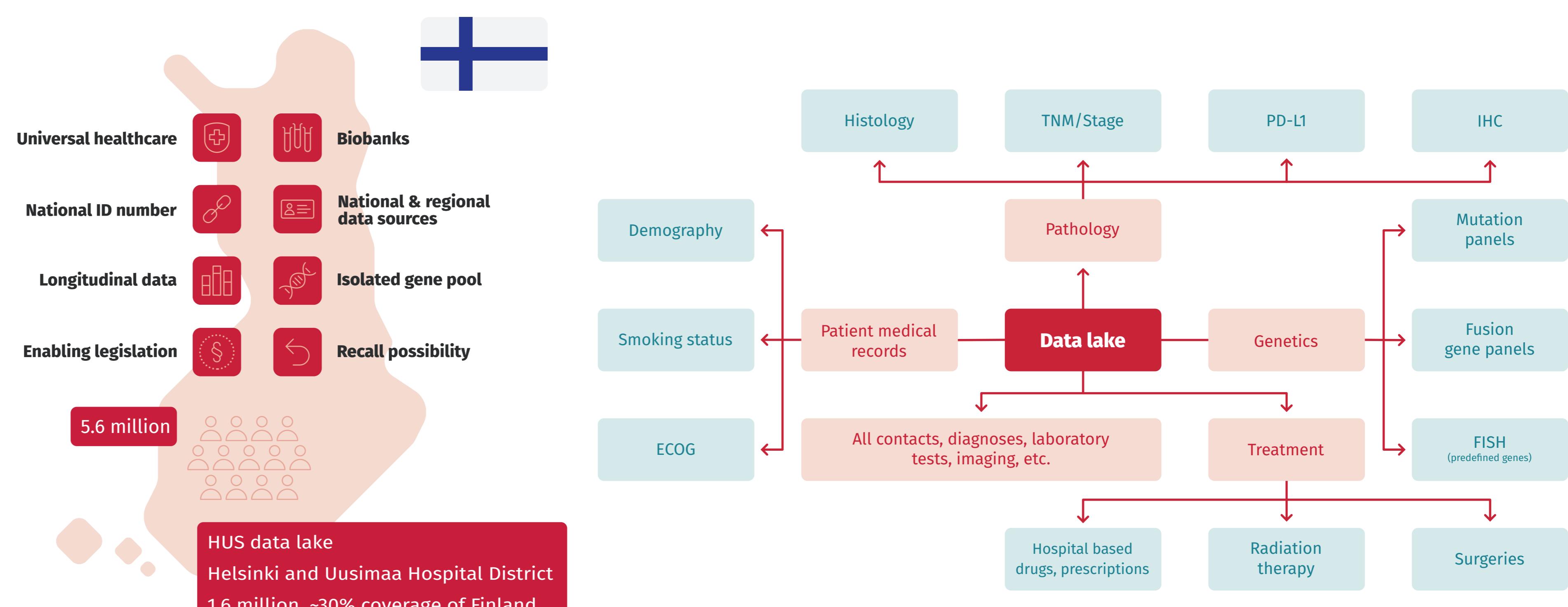
# REAL-WORLD EVIDENCE STUDY ON HEALTH CARE RESOURCE UTILIZATION (HCRU) AMONG CANCER PATIENTS IN THE HELSINKI AND UUSIMAA (HUS) REGION, FINLAND

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## CORE DATASET

- The Collaboration Research (CORE) initiative by Medaffcon, is a retrospective registry-based cohort investigation in Helsinki and Uusimaa region (HUS) data lake.
- It includes existing data generated during routine clinical practice and available in HUS data lake.
- All patients with cancer diagnosis (C00-C99\*, \*\* indicates any character) starting from 2015 are included in the cohort and the dataset is updated continuously.
- In addition to all diagnoses, healthcare contacts (outpatient and inpatient contacts), laboratory measures, pathological tests and results, procedures and operations, hospital medications and prescriptions, radiological tests and results from the baseline and follow-up period, the dataset also includes all relevant data prior to cancer diagnosis (for example for the assessment of baseline characteristics and comorbidities).



## BACKGROUND

In Finland, there were 39 199 new cancer cases diagnosed in 2023, and a total of 334 024 patients diagnosed with cancer were alive at the end of 2023 (1). The age-standardized cancer incidence in women increased on average by 1.0% per year 2007 – 2019, while in men, the incidence remained unchanged 2004–2019. Projecting into the future, the incidence of cancer will increase moderately from 2021 to 2040, with an average annual increase of 0.3% for women and 0.2% for men.

The healthcare expenditure associated with cancer care is increasing. This is partly due to the aging population structure but also due to advances in the interventions and increased cancer drug expenditure (2). Certain indications have witnessed radical changes in the treatment landscape in the past decade with immune-oncological (IO) drugs and targeted treatments changing the care in breast cancer, lung cancer, melanoma and other indications, whereas other areas have not seen any large changes in treatments and presumably modest or no changes in outcomes (3).

In Finland, the HCRU costs in cancer care have climbed 20% between 2014 and 2020 (4,5), with a doubling in medicine costs, both in hospital administered (94%) and pharmacy distributed (98%) drugs (4). The cancer types adding to the highest HCRU costs in 2021 were cancers of the breast, male genital organs and lymphoid and haematopoietic tissue (4).

## RESULTS

- The first-year inpatient contacts and related costs were highest among patients with myeloma, colorectal cancer and lung cancer, and lowest among patients with melanoma and breast cancer (Figures 1 and 2).
- In all the cancers studied, the HCRU due to inpatient contacts was lower in 2023 when compared to 2015.

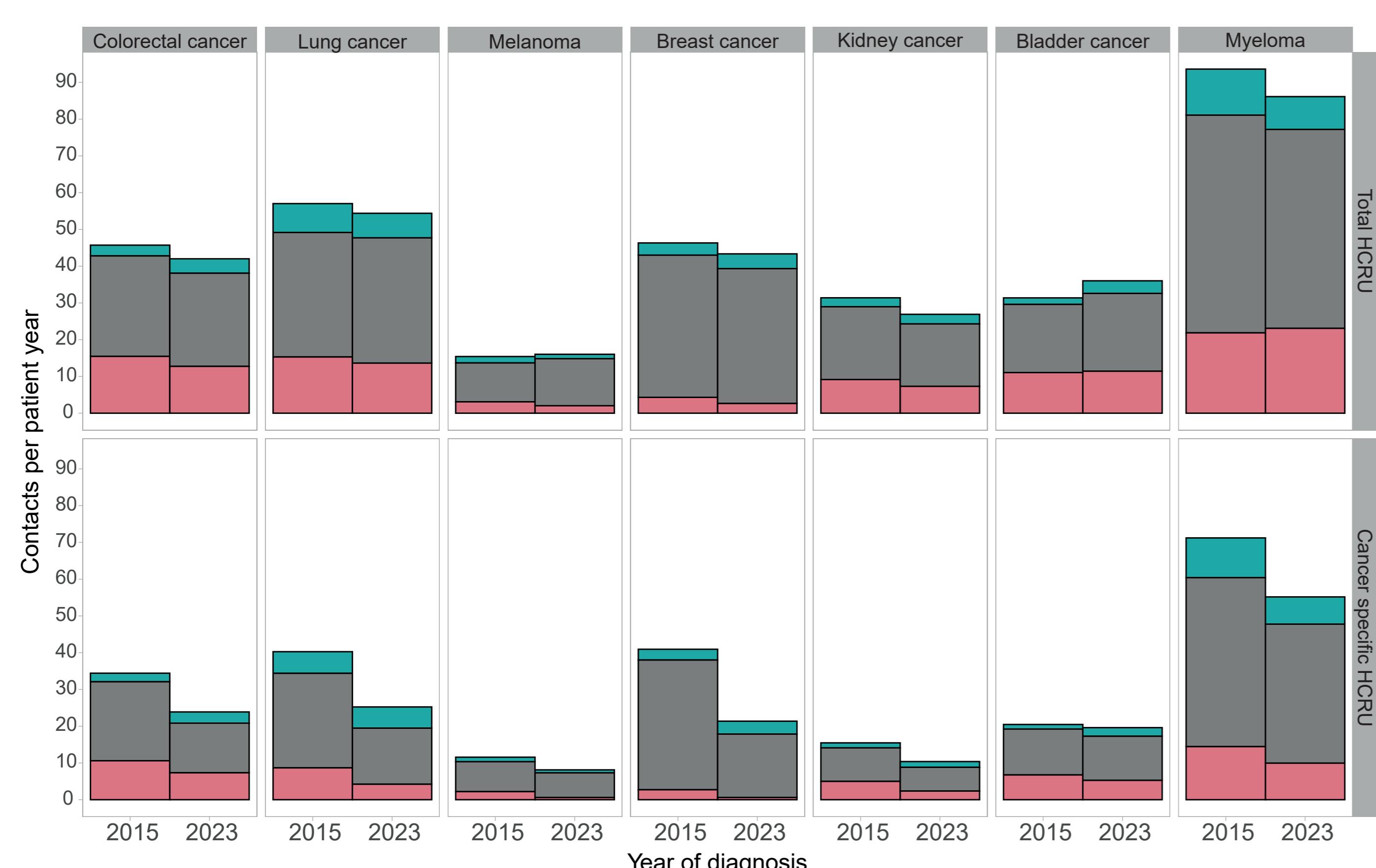


Figure 1. First-year HCRU (contacts) in 2015 vs. 2023 in HUS region

## OBJECTIVES

In this real-world evidence study we estimated the health care resource utilization (HCRU) among cancer patients in the Helsinki and Uusimaa region (HUS), Finland, an area with a population of 1.6 million inhabitants (30% of the Finnish population). Specifically, we looked at changes in the first year HCRU in 2015 vs. 2023 due to inpatient contacts among patients with myeloma, melanoma, and lung, colorectal, breast, kidney, and bladder cancer.

## METHODS

The electronic health records of all patients with an ICD-10 diagnosis for cancer (C\*) were collected from the HUS region. A total of 107 630 incident patients were identified between 2015–2023 and followed for one year after diagnosis. The collected data included diagnoses, contacts, pathology, in-hospital treatments, prescriptions, radiology, and deaths. Inpatient contacts recorded with a cancer diagnosis (C\*) were extracted from all healthcare contacts and priced according to the national specialty-specific unit costs. The number of inpatient contacts and related costs were analysed with mean cumulative functions.

- The largest relative reduction in the first year HCRU due to inpatient contacts was observed among patients with breast cancer (78% reduction in both contacts and costs) and melanoma (73% in contacts and 72% in costs) (Table 1).
- The smallest reduction was observed among patients with bladder cancer (22% in contacts and 16% in costs) (Table 1). A reduction in outpatient contacts was also observed.
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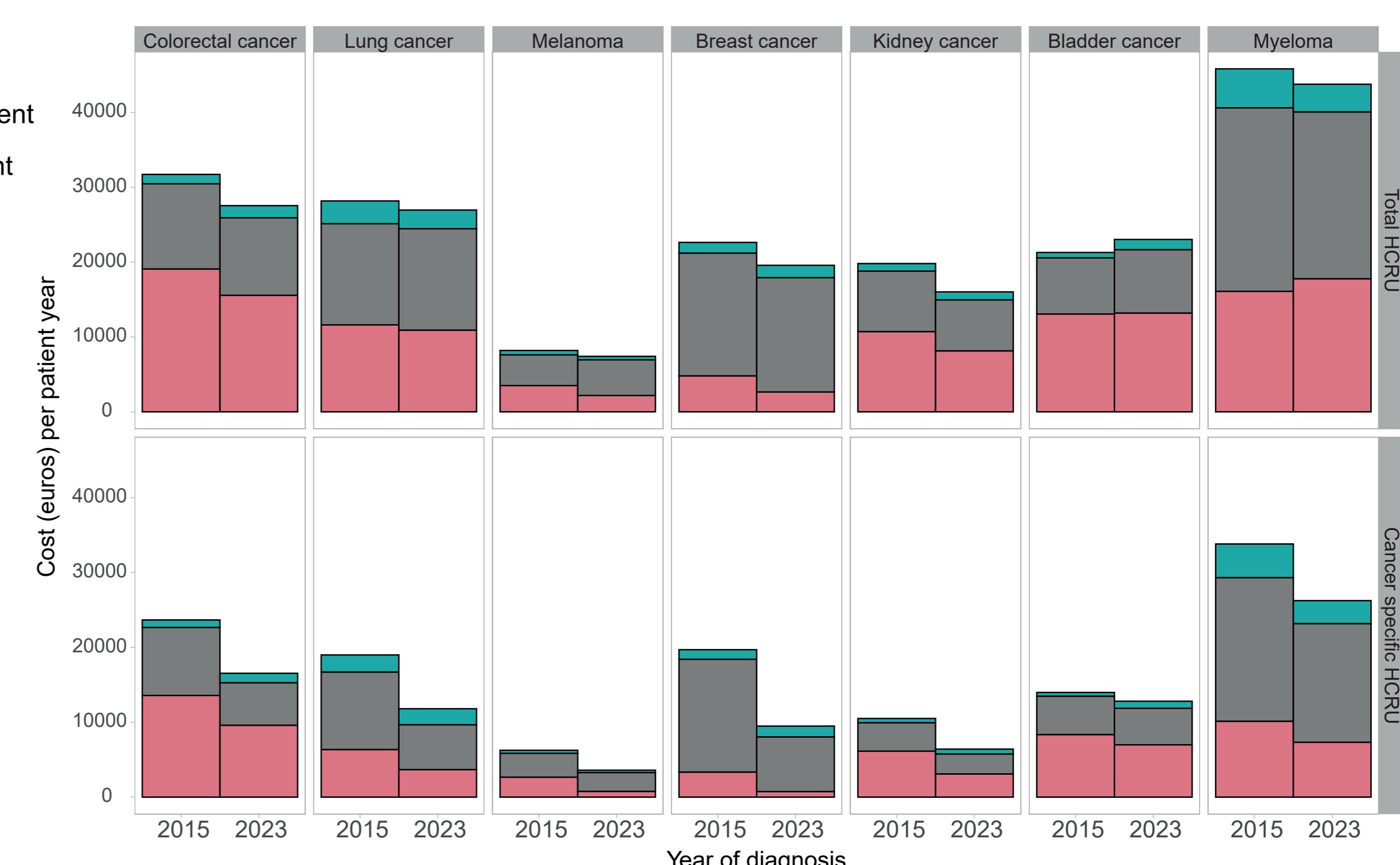


Figure 2. First-year HCRU (costs) in 2015 vs. 2023 in HUS region

## CONCLUSIONS

In this study, which is part of the Collaboration Research (CORE) initiative by Medaffcon, we show an overall decrease in the first year HCRU due to inpatient contacts among cancer patients in the HUS region.

Advances in cancer treatments and evolving clinical practices have streamlined patient care, leading to a marked reduction in inpatient contacts and associated costs across most cancer types.

The reduction in inpatient contacts is likely related to a shift in the organization of care, where outpatient contacts have replaced inpatient contacts, however a reduction was also observed in outpatient contacts in most indications. Further, as more oncological treatments have become available to patients through the pharmacy channel, the need for hospital care has changed. Other potential factors reducing inpatient contacts may include improved side effect management, with more effective and tolerable treatments becoming available.

From a patient centered perspective the reduction in the time spent at hospital wards is likely related to an opportunity for cancer patients to spend more time on other meaningful activities.

Continuous evaluation of treatment practices and resource utilization should guide healthcare planning and policy, ensuring that efficiency gains—such as reduced inpatient contacts—translate into improved patient outcomes and sustainable cancer care.

Cancer type	Costs (€) of inpatient contacts			Costs (€) of outpatient contacts		
	2015	2023	difference (%)	2015	2023	difference (%)
Breast (C50*)	3323	737	-77.9	8487	6864	-19.1
Melanoma (C43*)	2654	756	-71.5	2769	2392	-13.6
Kidney (C64*)	6137	3088	-49.7	3253	2579	-20.7
Lung (C34*)	6347	3664	-42.3	7225	5713	-20.9
Colorectal (C18-C20*)	13575	9588	-29.4	7748	5552	-28.3
Myeloma (C90.0)	10121	7321	-27.7	18210	15681	-13.9
Bladder (C67*)	8340	6986	-16.2	4150	4745	+14.3

Table 1. Reduction in first-year disease-specific HCRU (costs, €) due to inpatient and outpatient contacts

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