

# CARBON FOOTPRINT, PATIENTS' JOURNEYS TIME AND COST IMPACT THROUGH THE CLEANROOM'S IMPLEMENTATION IN THE RURAL HOSPITAL

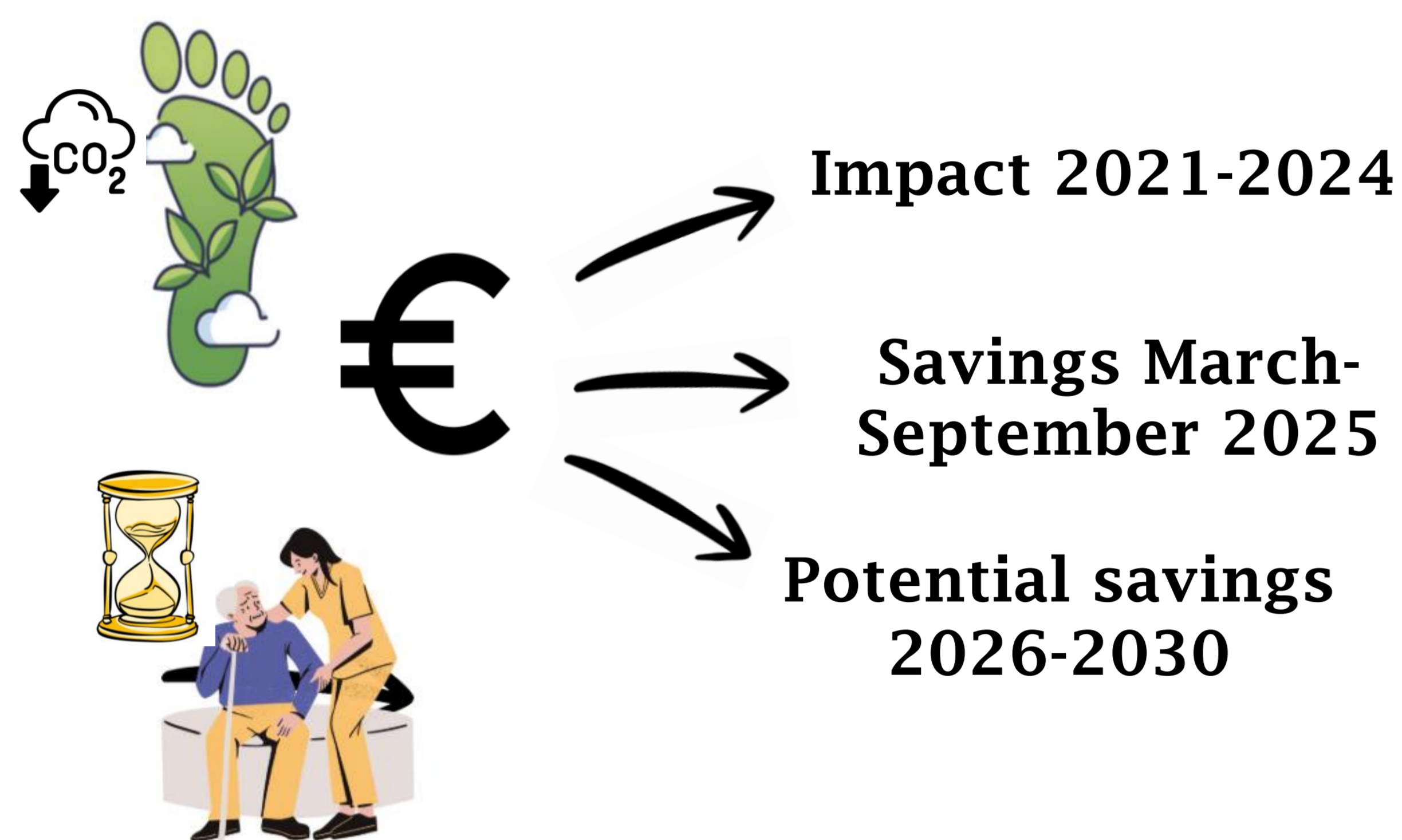
<sup>1</sup> Anna Gironella-Torrent, <sup>2</sup> Robert Morales-Llombart, <sup>1</sup> Sílvia Cazalilla Chica, <sup>1</sup> Grañó Llordés M, <sup>1</sup> Patricia Moutinho Gonçalves, <sup>1</sup> Rocío González Troncoso, <sup>1</sup> Eduardo Sanjurjo Golpe, <sup>1,3</sup> F Torres-Bondia

<sup>1</sup> Hospital Comarcal del Pallars, Department of Pharmacy, Tremp, Spain, <sup>2</sup> Regió Sanitaria del Alt Pirineu i Aran (CatSalut), Tremp, Spain, <sup>3</sup> Hospital Universitari de Santa Maria, Departament of Pharmacy, Lleida, Spain

## Background and Importance

Previously, rural patients traveled at least two hours per day on rough roads to receive chemotherapy administration in urban hospitals, generating a carbon footprint impact, high costs for the Public Regional Health Area (PRHA) and indirectly contributing to rural depopulation. In March 2025, a new cleanroom was inaugurated at the rural hospital, reducing travel, emissions, and patient burden.

## Aim and Objectives

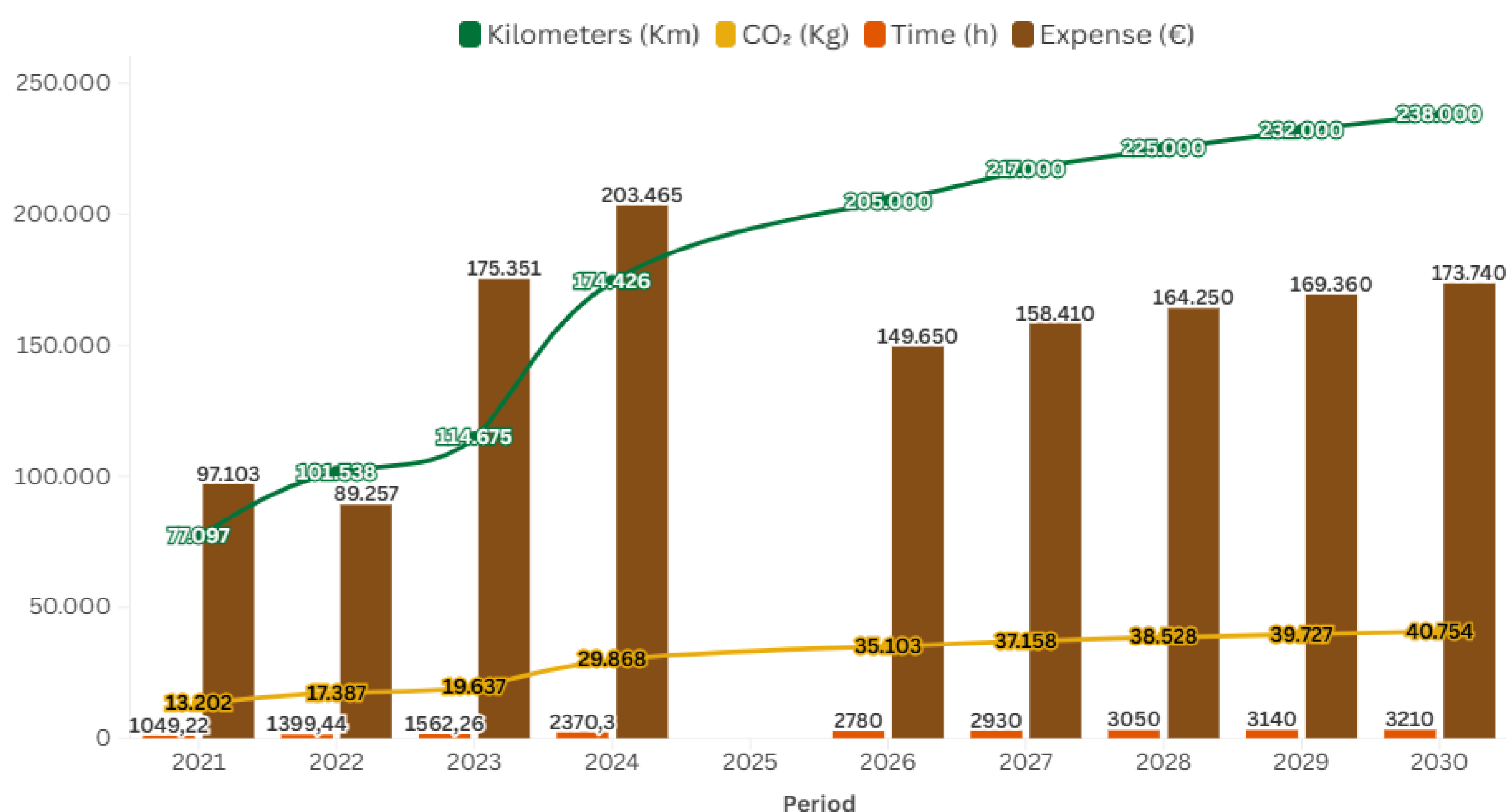
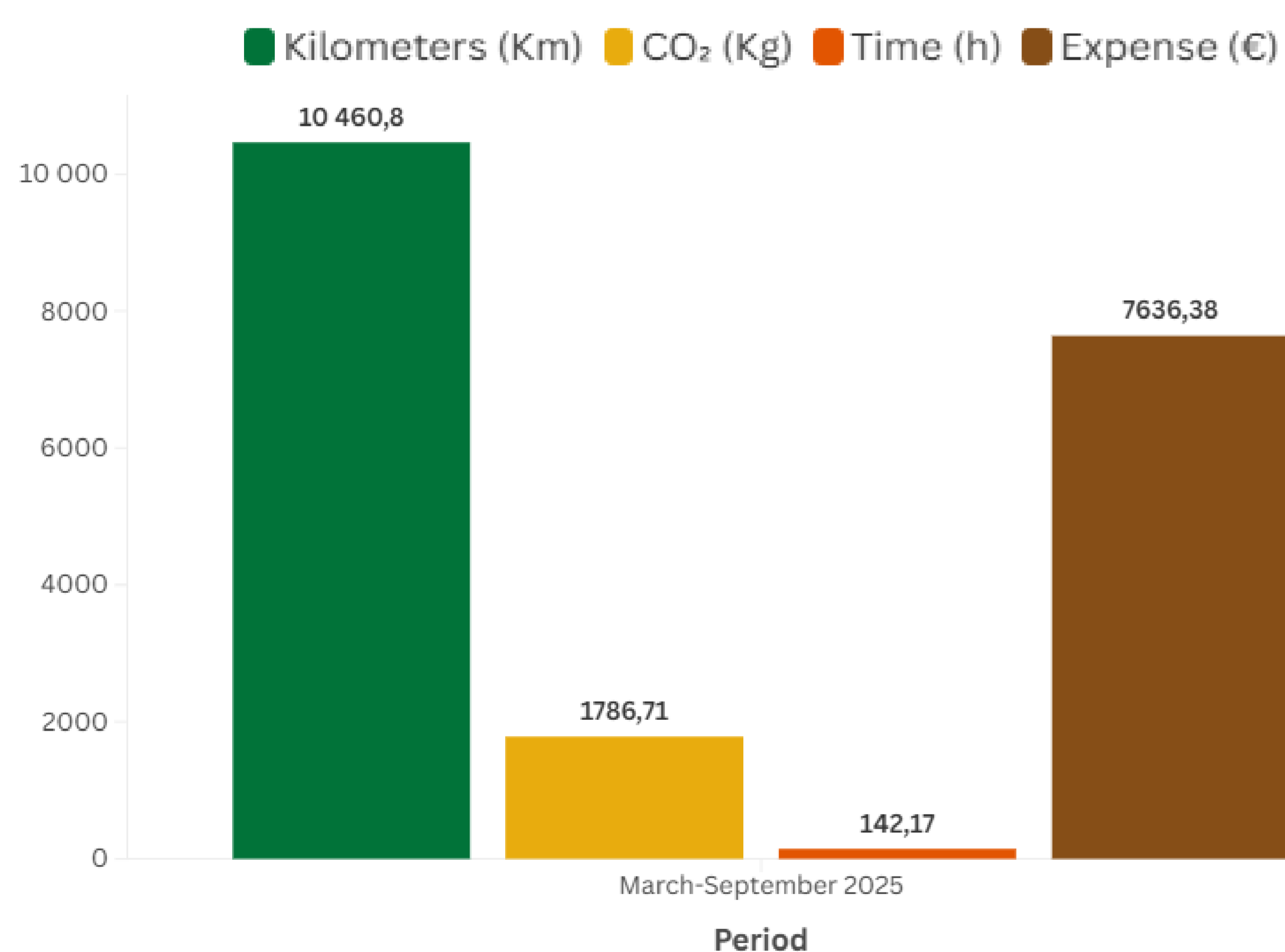


## Materials and Methods

Retrospective study based on patients  $\geq 18$  years from 281 villages between 2021-2024. Metastatic melanoma, osteosarcoma, germinal, neuroendocrine and neurologic tumor diagnoses excluded.

- Carbon dioxide (CO<sub>2</sub>) driving emissions calculation: 8% gasoline (134g CO<sub>2</sub>/km) and 92% gasoil taxis (174g CO<sub>2</sub>/km)
- Time: Travelled hours between 13 urban Hospitals and the rural one
- Expense: 0.73€/km

## Results



## Conclusion and Relevance

Local preparation and administration of chemotherapy at the rural hospital significantly reduce CO<sub>2</sub> emissions, as well as patient travel time and associated costs. The implementation of an onco-hematological unit improves patients' quality of life and facilitates family-work balances.

As life expectancy rises and early cancer detection improves, an expanding patient population is likely to benefit from this approach.

## References and/or acknowledgements

1. Generalitat de Catalunya. (2024). Guia de càlcul d'emissions de gasos amb efecte d'hivernacle (GEH) [Internet]. 17 June 2024. Available at the [website](#).

