Appraisal of Environmental Impact of an GP Consultation

ULS Matosinhos
Portugal

AstraZeneca

Sustainable Healthcare Coalition

Title	GP Consultation at ULS Matosinhos – Hospital Pedro Hispano, Portugal
Organisation and role	AstraZeneca UK Limited initiated and funded this work, but it was not involved in collecting and analysing the hospital data. AstraZeneca saw only the final output.
Company website	www.astrazeneca.com/
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Completion date	September 2023
Assurance	Internal assurance
Supporting information	Operational data from Unidade Local de Saúde (ULS) Matosinhos – Hospital Pedro Hispano, Portugal
Data gathering and analysis contact	Michael Collins, Partner, ERM (michael.collins@erm.com)
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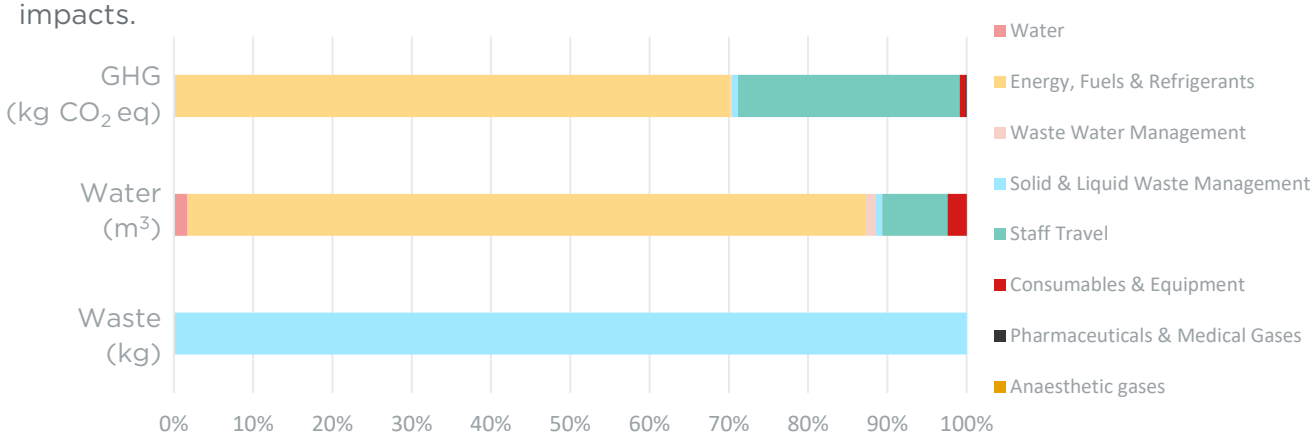
Conformance with Care Pathways: Guidance on Appraising Sustainability[1]	Adheres to the principles of the Guidance
Care pathway description	GP Consultation at ULS Matosinhos – Hospital Pedro Hispano
Environmental issues appraised	Global warming potential (IPCC, CO_2 eq, 100-year), water use, waste

This resource is supplementary material for the care pathway study of ULS Matosinhos and activities within the hospital, 'Appraisal of Environmental Impact of ULS Matosinhos.'[2] Refer to that document for a description of the assessment procedures.

Findings

This study appraised the environmental impact of a GP consultation visit at ULS Matosinhos in Portugal. The study found a greenhouse gas (GHG) emission impact of 4.05 kg CO_2 eq, water use of 2.52 m^3 and waste of 0.1 kg per patient contact for a GP consultation.

Energy, fuels and refrigerants contributed the most to the GHG emissions impact, accounting for 70%. The majority of this contribution is from fuel use. Staff travel was also identified as a hotspot for GHG emissions. It should be noted that the emission factor for staff travel was based on average commuting emissions in the UK, as local data were unavailable. A dedicated staff travel survey would provide data to enable a more accurate appraisal of staff commuting impacts.

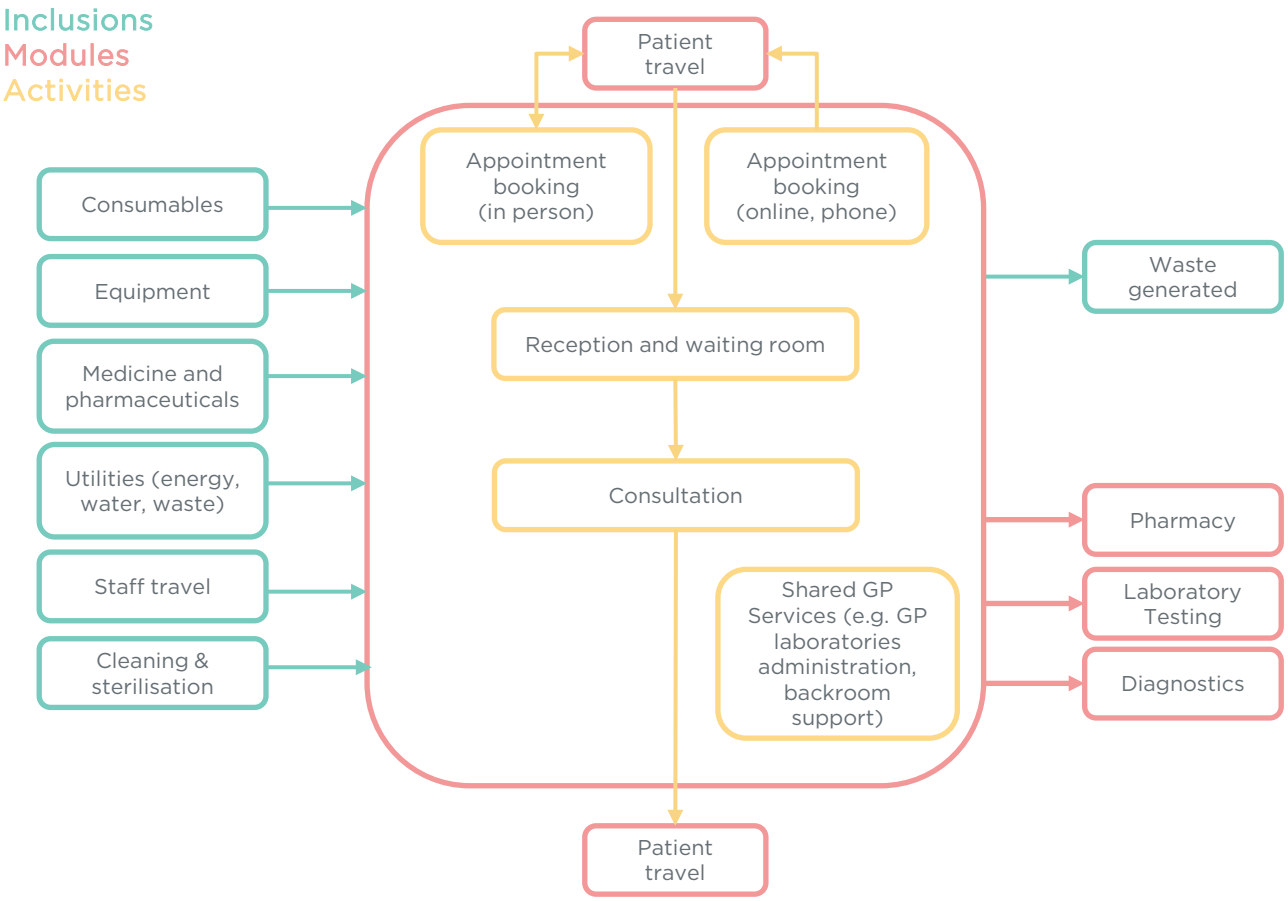


[1] Care Pathways: Guidance on Appraising Sustainability. (SHC, 2023). https://shcoalition.org/sustainable-care-pathways-guidance

[2] Appraisal of Environmental Impact of ULS Matosinhos, (SHC, 2025), https://shcoalition.org/wp-content/uploads/2025/07/AppraisalOfHospitalActivities_Portugal.pdf

Scope

- This assessment appraises the environmental impact of a GP consultation at ULS Matosinhos.
- The functional unit of the system studied is an average GP consultation in 2021.
- The scope includes appointment booking (in person or online/phone) and the consultation. The scope does not include pharmacy, laboratory testing or diagnostics.



Data

The following data were collected for all relevant activities for 2021, and are described in the diagram:

- Utilities data (fuels, electricity renewable or not, water use, refrigerant use and waste generated)
- Department consumables, such as gloves, surgical masks, gels
- Pharmaceutical products, including painkillers, inhalers and vaccines
- Equipment, such as electrocardiogram (ECG) machines, perfusion pump systems and blood pressure monitors
- Staff travel
- Linen use and cleaning and facilities cleaning

The environmental impact of the GP consultations for 2021 was modelled and then divided by the total annual patient contacts. The hospital's utilities data were provided and allocated to the primary healthcare department based on floor space.

Results

- Results are the environmental impact of a GP consultation at ULS Matosinhos.

Module	GHG kg CO_2 eq	Water m^3		Waste kg
		Direct	Indirect	
Water	0.00	0.01	0.04	-
Energy & fuels	2.73	-	1.99	-
Refrigerant	0.12	-	0.17	-
Waste water management	0.01	-	0.03	-
Solid/ liquid waste management	0.03	-	0.02	0.11
Staff travel	1.13	-	0.21	-
Consumables	0.03	-	0.06	-
Equipment	0.00	-	0.00	-
Pharmaceuticals and medical gases	0.01	-	0.00	-
Anaesthetic gases	0.00	-	0.00	-
Total	**4.05**	**0.01**	**2.52**	**0.11**

Acknowledgements

This document has been developed collaboratively with ULS Matosinhos and the Sustainable Healthcare Coalition. The coalition comprises a range of organisations within the healthcare sector, including pharmaceutical and medical device companies, trade bodies, procurement, government organisations and other stakeholders. The Sustainable Healthcare Coalition operates with the aim of facilitating the journey towards good health and wellbeing on a finite planet, through open-minded collaboration across public and private healthcare.