

70,5

TOWARDS CIRCULAR ENDOSCOPY

A HUMAN-CENTERED DESIGN APPROACH TO WASTE SEGREGATION IN COLONOSCOPY PROCEDURES



PROBLEM

RESOURCE INTENSIVE PRACTICE

PRODUCTS WASTED

COLONOSCOPY WASTE FOR 1 PROCEDURE

PROCEDURE

PER PROCEDURE

8-10 L
Insufflation gas
Siau et al. (2021)

0,7 L
Sterile water
Siau et al. (2021)

1.5 kg
Solid waste
Siau et al. (2021),
Siddhi et al. (2021),
De Jong et al. (2023)

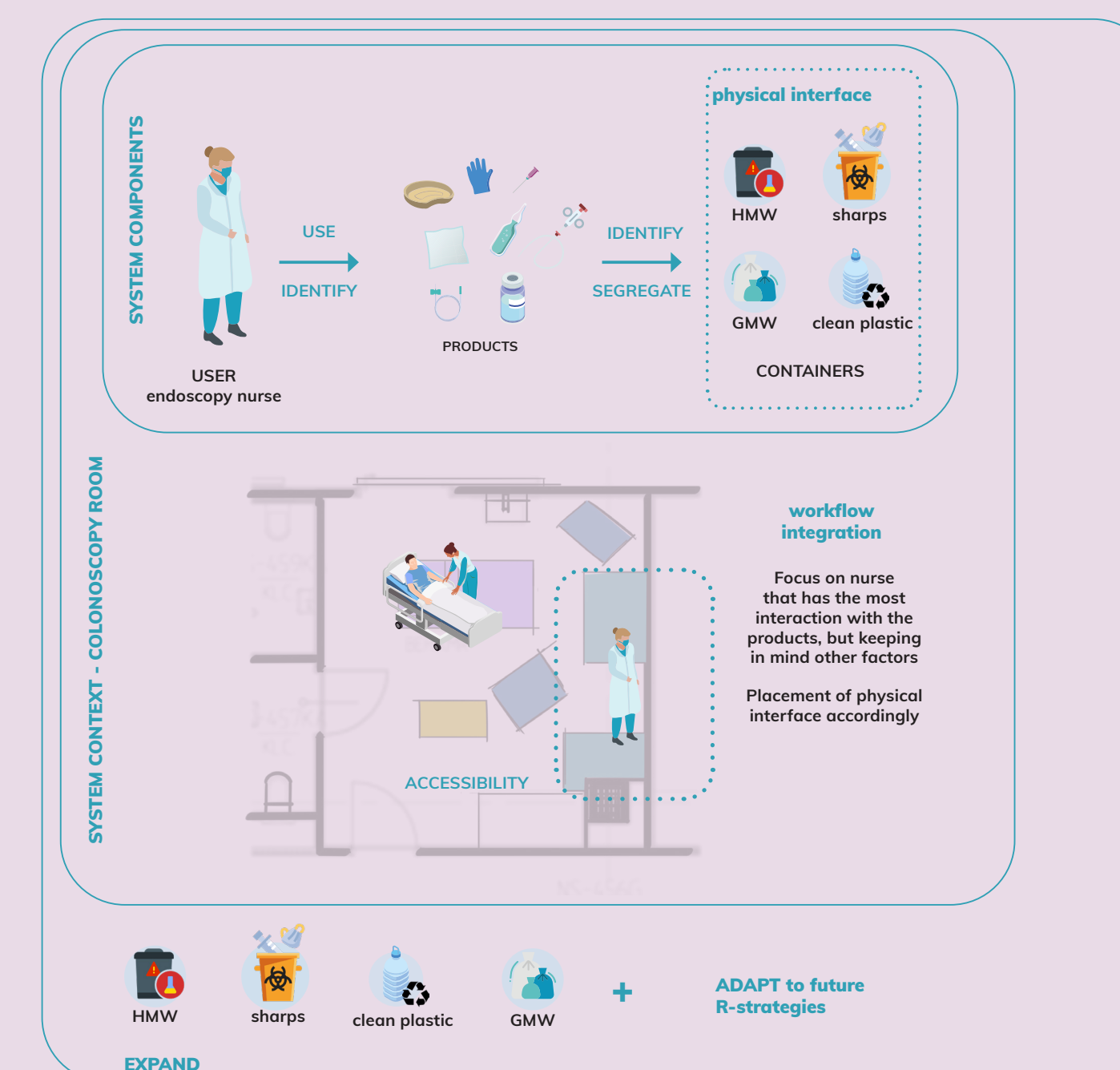
PRODUCT-SPECIFIC

0.29 kg CO₂e
per biopsy pot
Donnelly (2022)

0.31-0.47 kg CO₂
per forceps
López-Muñoz et al. (2023)

24-47x more CO₂ emissions
single use vs reusable
endoscopes
Sebastian et al. (2023)

0,58
KG



INTERVENTION

OPTIMIZED WASTE SEGREGATION SYSTEM IN COLONOSCOPY ROOMS

INCREASED PLASTIC RECYCLING POTENTIAL

40%

REDUCTION IN INCINERATED MEDICAL WASTE

16%

INCREASED AWARENESS IN STAFF

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