• Logistics, in the healthcare sector, could help in order to promote the quality of services and to encourage the sustainability, especially from an economic perspective.
• Automation of hospitals medication management, thanks to multiple innovative technologies that are emerged, demonstrated advantages towards manual systems, to overcome the critical issues of traditional logistics and manual dispensing test.
• The advantages achievable have a double nature: automation brings managerial benefits (i.e. complete traceability of drugs, control of the stock, reduction of expired drugs), but also clinical benefits (i.e. error reduction, better patient safety).
• Despite literature on benefits exists, no multidimensional evidence on automation of hospital medication management is available. In addition, all the stakeholders (pharmacists, nurses, clinicians, decision makers, biomedical engineers or IT Specialists) have different perceptions and experiences concerning technologies.

**Results**

The HTA involved 129 healthcare professionals (pharmacists, nurses, decision makers and other professionals), in 6 European Countries (Belgium, France, Germany, Italy, Netherlands, United Kingdom) in 2021.
Professionals are divided by their professional role and their actual use of automation. In particular, the study involved: 46 pharmacists, 40 nurses, 19 biomedical engineers and IT specialists and 24 decision makers.
The professionals were also stratified considering:
- 77 already automation users
- 52 potential automation users

**Efficacy and Safety**
Results from efficacy and safety questionnaires showed that the presence of automation resulted in a decrease in medication administration errors (-1.14; 0.95; 1.57; 0.89, respectively for Scenario 1, 2, 3, and 4, p-value < 0.001) and consequently in adverse events (-1.67; 1.23; 1.36; 2.17, respectively for Scenario 1, 2, 3 and 4, p-value < 0.001).

**Equity, social and ethical aspects**
Healthcare professionals appreciate the impact on the patients’ clinical pathway efficiency (0.71; 0.79; 1.07; 1.43, respectively for Scenario 1, 2, 3 and 4, p-value < 0.001) due to the decrease in errors occurrence rate and the impact on the trust between healthcare professionals and patients (-0.17; 0.88; 1.07; 1.25, respectively for Scenario 1, 2, 3 and 4, p-value < 0.001), due to an increase in terms of patient safety.

**Legal impact**
The most appreciated item was represented by the impact on drugs thefts from hospital stocks, especially in the wards (-1.88; 1.52; 2.12; 2.37, respectively for Scenario 1, 2, 3, and 4, with a p-value < 0.001).

**Conclusions**

- **Safety** is the most important and prioritized HTA dimension, followed by effectiveness, organizational and economic impact. Benefits related to automation were recognized in all domains, but it is often unclear the incremental benefits of the integrated automated solutions in comparison with the presence of single technologies. Positive economic impact was registered in case of full automation.

- Organizational impact is positive with a trade-off in the first year due to internal efforts in the learning curve. Benefits are overall well recognized with gaps for some categories of healthcare professionals.

- In conclusion, the study underlines the importance of promoting studies and supporting technology introduction to facilitate the Change Management in all the European hospitals.

**References**

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**Materials and Methods**

A structured literature review, the 9 Domains of EunetHTA Core Model were deployed using validated questionnaires (with 7 item-Likert scale).

Differences among groups and scenarios were studied using ANOVA test. All analyses were conducted considering a level of significance equal to 0.05 and were performed with the assistance of the IBM SPSS® software (version 22.0).

The economic assessment was performed using: Activity-Based Costing analysis, Cost-Effectiveness Analysis and Budget Impact Analysis.