

Abstract

Care with head and heart, for patients and planet

A mixed methods bachelor thesis against medication wastage in Dutch ambulance services

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Background Within the Dutch regional ambulance service Ambulance Amsterdam B.V. (AA), medication is discarded monthly due to passed expiry dates. Medication wastage is a problem across the healthcare sector, with negative impacts on the environment, climate, and human health, as climate change is the single biggest health threat facing humanity.

Objective Gaining knowledge and insights into the scale and causes of medication wastage within Ambulance Amsterdam (AA) and to identify possible and practically implementable solutions. This analysis considers the perspectives of various stakeholders, specifically focusing on the BSc Allied Medical Care ambulance professional (Medisch Hulpverlener acute zorg (MH), in Dutch).

Method From January to April 2024, medication wastage due to passed expiry dates was counted at all AA stations and the logistical centre. Additionally, semi-structured interviews were conducted with six stakeholders within AA, including three MHs, and with two stakeholders from the clinical pharmacy of Amsterdam UMC, location VUmc (AUMC VUmc). The interview topic list covered five themes: medication wastage in general, causes and effects, solutions, prerequisites, and other relevant topics. Within the theme of solutions, specific attention was given to circularity strategies: Refuse, Rethink, Reduce, and Reuse.

Results Over four months, a total of 1,785 units of medication were recorded as wastage across AA due to passed expiry dates. Four additional minor causes of medication wastage were identified. According to participants, the consequences of medication waste include environmental damage, medication scarcity, and financial impacts. Suggested solutions included reducing the variety of medications within AA (Refuse), minimizing onboard medication stock in ambulances (Reduce), revising the logistical process (Rethink), and redispensing unused medication (Reuse). Specific solutions for certain medications and smaller causes of wastage were also identified.

Discussion/conclusion The estimated annual medication wastage within AA amounts to 6,334 units, valued at €11,119.27. Due to multiple factors affecting the reliability of the medication count and the focus on only one cause of waste, this figure may significantly underestimate total wastage. Theoretical saturation was reached during the stakeholder interviews within AA. Solutions aligned with circularity strategies Refuse, Reduce, and Rethink appear promising. Medication redispensing (Reuse) is currently not feasible within AA. Raising awareness within AA, collaborating with the clinical pharmacy at AUMC VUmc, and ensuring patient safety and care quality are prerequisites for all proposed solutions.

Recommendations Implement the aforementioned promising solutions and address smaller causes of medication waste. Increase awareness about sustainability and medication waste within AA.