

## **User-Centered Design in Health Care: Design and Testing of a new Dosing Cup for Liquid Medication.**

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Prior studies have found that dosing errors occur frequently when using dosing cups to dispense liquid medication. This project aims at determining which design features of such cups support users to administer liquid medication easily and correctly. A user-centered design approach with regard to medical standards was followed to address this issue. Task and risk analyses were performed followed by an ethnographic study in which users were observed while working with various types of dosing cups. Results were used to create first design solutions and to conduct an expert brainstorming to identify essential design features. Based on the results, two prototypes were developed and evaluated in an expert review. Finally, the better design was compared to three existing cups in an experimental study in which each participant had to decant small, medium and high volumes of liquid. The cups were tested for accuracy, user experience, advantages, disadvantages and overall acceptance. Results show that specific design features can help to improve dosing accuracy and user acceptance. Those features in combination with instructions for use constitute the final results of our project.