

Introduction

In our hospital, **1,100 anti-infectious eye drops** are prepared each year as hospital preparations **from injectable commercial specialties** (ceftazidime, amphotericin B, etc.).
Their preparation is not automated, and involves **many manual and repetitive steps**.

Objective

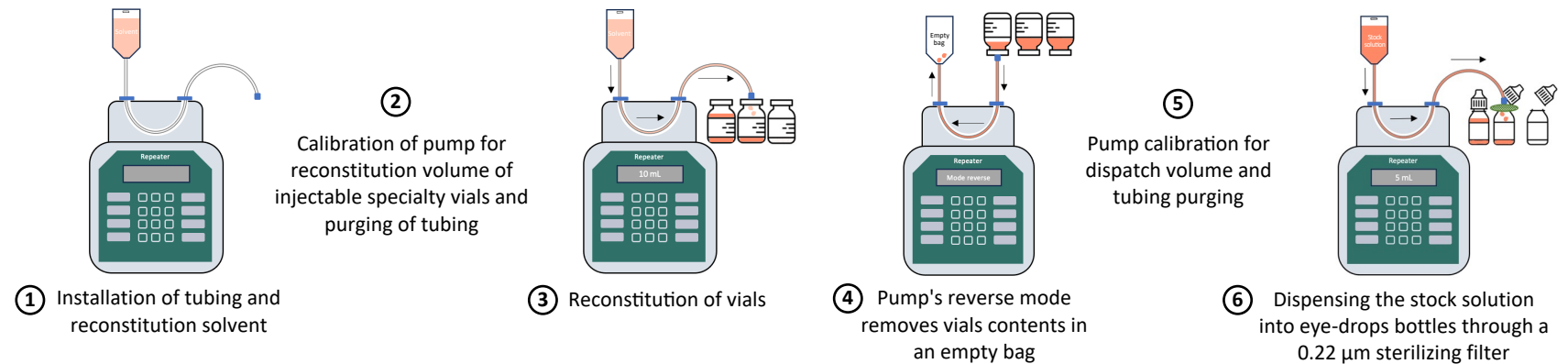
Validate the use of the Repeater® peristaltic pump (Baxter) **to automate** all stages of eye drop preparation: **from reconstitution to distribution**.

Materials and methods

Pump qualification: gravimetric measurements of volumes of 5 and 10 mL of water delivered by the pump (10 repetitions for each). Verification of two parameters:
→ **Accuracy:** deviations from true values within $\pm 2\%$
→ **Precision:** coefficients of variation $< 5\%$

Production of a test batch of 30 eye drops of amphotericin B at 5g/L, verification of three parameters:
→ **Mass uniformity** of eye drop vials
→ **Amphotericin B concentration** (by HPLC)
→ **Sterility** (inoculation on agar plates)

Eye drops **preparation procedure: aseptic preparation** in a class A isolator



Results

Pump qualification (5 and 10 mL delivered) :

- **Accuracy** ✓
Deviations from true values: -0,2% et -0,6%
- **Precision** ✓
Coefficients of variation: 0,26% et 0,14%

Production of the test batch (30 eye drops of amphotericin B) :

- Validation of the operating procedure ✓
- Mass uniformity ✓
- Sterility ✓
- Amphotericin B concentration: 4,91 g/L ($\pm 0,05$) ✓



Conclusion

➔ **preparation time** (pump installation, calibrations, etc.)

Elimination of manual steps, **automation of preparation:**

- ➔ **Improving the quality of life at work for PPH**
- ➔ **batches size** → **preparations frequency**

Procedure validated for 3 types of eye drops (amphotericin B, vancomycin and ceftazidime) → 15 batches released in the last 6 months