DRUG WASTE OF READY-TO-ADMINISTER SYRINGES IN THE INTENSIVE CARE UNIT: ASEPTICALLY PREPARED SYRINGES VERSUS PREFILLED STERILISED SYRINGES

Thomas G. van Gelder, Arief Lalmohamed, Kim D. Dorst-Mooiman, Jan C. Dekker, Marcel J. Schinkel, Maaike A. Sikma, Esther V. Uijtendaal, Toine C.G. Egberts

UMC Utrecht

Abstract Number: 3PC-004

Aim

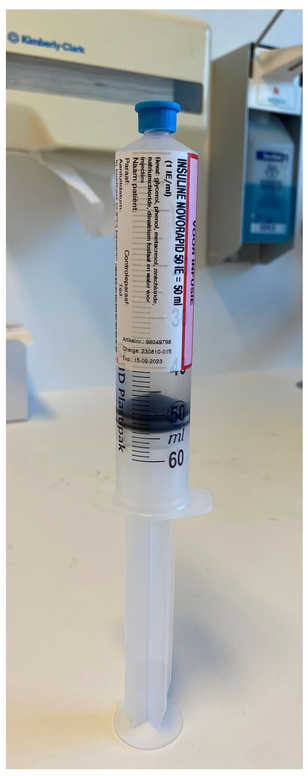
Can the introduction of ready-to-administer (RTA) **sterilised** syringes reduce drug waste in the intensive care unit?

Definitions

- RTA aseptic syringes
  - Prepared by hospital pharmacy through aseptic batchwise filling
- RTA sterilised syringes
  - Prepared by large-scale compounding pharmacy, followed by terminal sterilisation

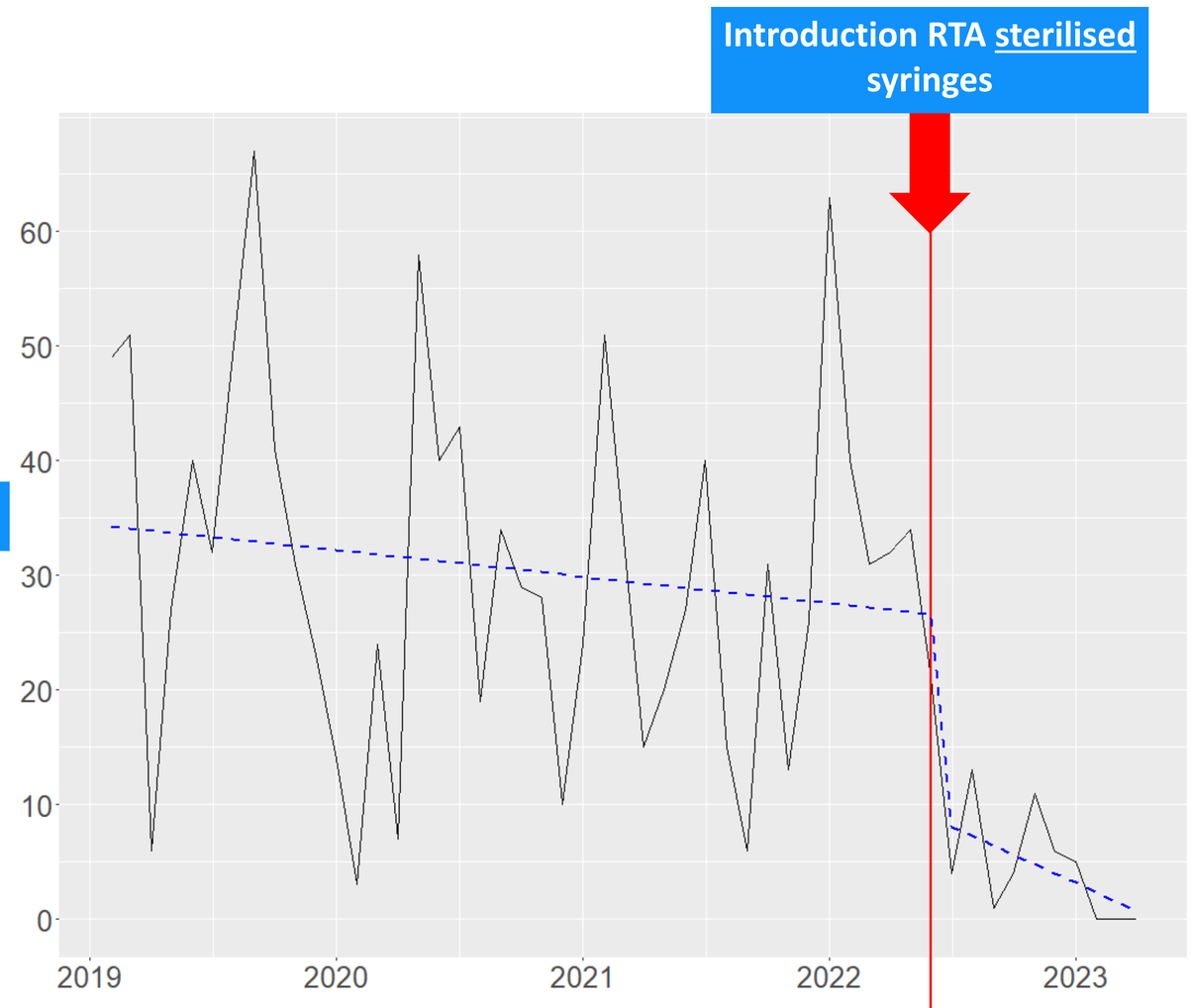
Setting and methods

- 32-bed Intensive Care Unit
- 8 year data collection on amount dispensed and amount wasted due to expiry
- July 2022: Three RTA aseptic syringes replaced by sterilised syringes:
  - Midazolam 50 mg = 50 ml
  - Morphine 50 mg = 50 ml
  - Potassium chloride 60 mmol = 60ml



RTA ASEPTIC SYRINGES

Shelf-life: 31 days



RTA STERILISED SYRINGES

Shelf-life: Up to 36 months

DRUG	BEFORE < February 2019 – DISPENSED	EXPIRED	WASTE %	JULY 2022	> AFTER - April 2023 DISPENSED	EXPIRED	WASTE %
Midazolam	24,706	6874	28		3761	203	5
Morphine	11,300	4384	29		1520	97	6
Potassium chloride	11,912	3528	30		1988	43	2
Total	**47,918**	**14,786**	**31**		**7269**	**343**	**5**

CONCLUSION

- Significant reduction in drug waste after introduction of RTA sterilised syringes
- Main strength: valid data
- Future perspectives:
  - Replacing more aseptic syringes by sterilised syringes
  - Life cycle assessment of RTA syringes

University Medical Center Utrecht
Correspondence: t.g.vangelder-2@umcutrecht.nl
Published in: European Journal of Pharmaceutical Sciences, Volume 191, 1 December 2023.