Ready to administer, ready to save:

Enhancing Safety and Value with RTA Injectables

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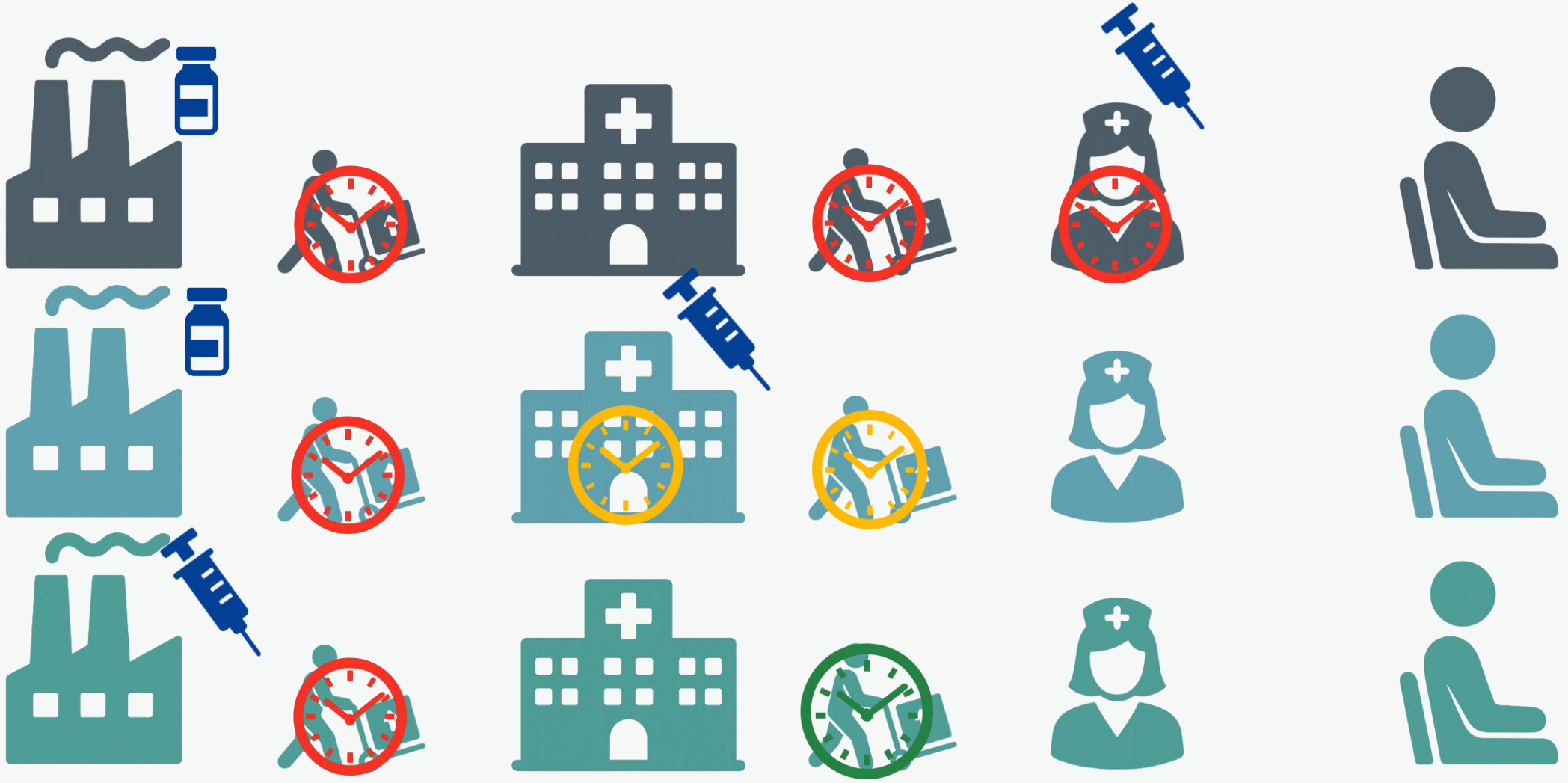
Context & Background

- The 2020 Carter Review on Transforming NHS pharmacy aseptic services highlighted critical capacity within NHS aseptic units [1].
- Lord Darzi has raised need to improve availability and speed of diagnostic services [2].
    - Increased diagnoses → increased and immediate demand for treatment.
    - More efficient and productive processes for delivering and administering care across the NHS is required.

- Capacity solution and safety net
- The difference between care *delayed* and care *delivered*.

Context & Background



For injectable medicines, which costs the NHS the most:

A) Drug acquisition

B) Preparation

C) Administration

D) Errors

For injectable medicines;

How much does England spend on secondary care injectable medicines?

A) £7 million

B) £70 million

C) £700 million

D) £7 billion

E) £70 billion

Context & Background

£7 billion

So, what does that buy?

8 Taylor Swift's Net Worth

82 F35B Jets

233 Seasons of Stranger Things

13.5 days of NHS running costs

Context & Background

- Lord Darzi's 2024 investigation into the NHS highlighted declining hospital productivity [2].
- 1 in 2 people diagnosed with cancer in their lifetime
    - Growth in demand expected at 5% year on year
    - Increasing demand for preparation of medication in anaesthetic and operating theatre settings.
- 52 steps in preparing injectable drugs→ 22 steps with RTA **(58% reduction)** [3]

- Probability of making at least one error during IV preparation was **73% which drops down to 17%** when the reconstitution step is eliminated by using RTA medications[4].

Context & Background

- 19 million errors occur annually in secondary care. These extended hospital stays are estimated to cost **£14.8 million** annually, contribute to over 1,000 deaths, and directly result in 85 fatalities.[4]
- RTA products for commonly used antibiotics alone could release over **4,000** whole-time equivalent nurses[1], supporting efforts to address the NHS's **40,000** nursing vacancies[5].
- Shift 1 'hospital to community': annual **£346 million saving** by freeing up one million hospital bed days[1].
- Higher initial acquisition cost with licensed RTA products vs. standard ampoules/vials.
- Reluctance from suppliers to introduce more licensed RTA products to the market.

For injectable medicines;

How long does it take to prepare a syringe, on average, from an ampoule at ward level?

A) 10 seconds

B) 40 seconds

C) 70 seconds

D) 100 seconds

Ampoules
40.3 seconds
6.7 minutes

Prefilled Syringe
16.9 seconds
2.8 minutes

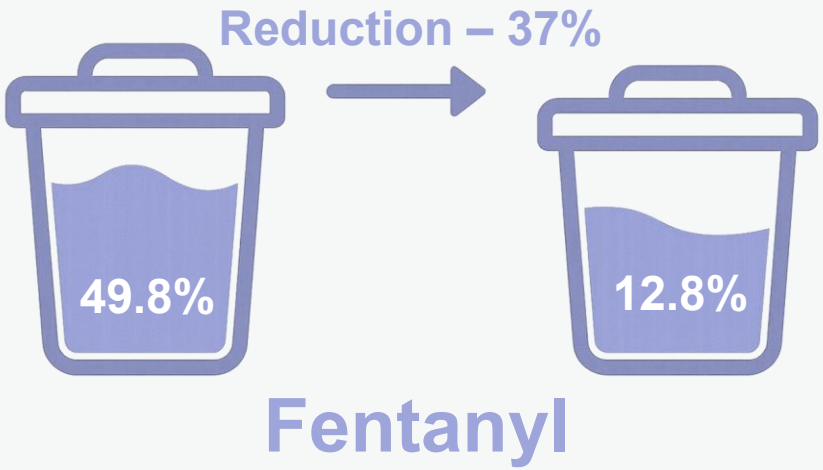
Which drug had the highest percentage waste?

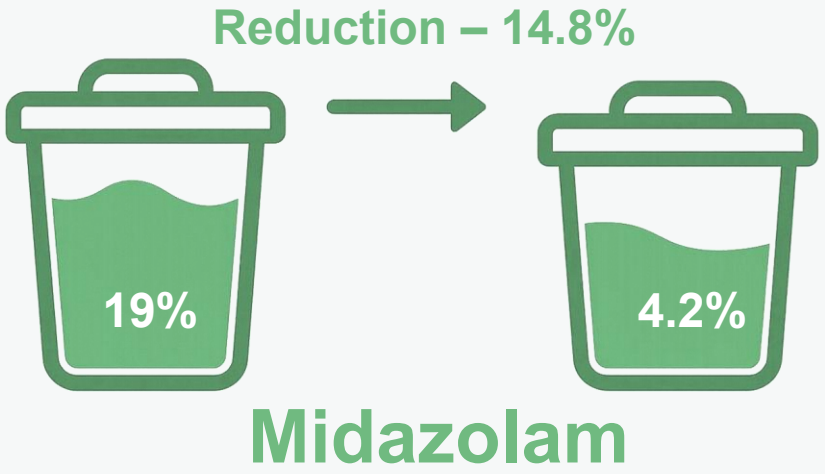
A) Midazolam

B) Atropine

C) Fentanyl

Analysis: Wastage





Sustainability

- In 2015/16 alone, £33.3 million was spent on removal of medication waste in the NHS[6].
- Lord Darzi's investigation highlighted the importance of a 'greener NHS'[7].
- In October 2020, the NHS committed to achieving carbon net zero[8].
- Switching to licensed RTA use can support this goal by reducing medication waste, healthcare professional time, consumables and ADE.

Analysis: preventable Adverse Drug Events (pADE)

- pADE cost estimation is complex.
- Published research into cost of pADE is limited.
- Average cost per ADE, average infusions per bed days rate, risk stratification model, error rate.
- Sensitivity analysis showed wastage had a higher impact compared to pADE.

  E.g. benefits seen even when:
  - Wastage of atropine amps reduced down to 65%
  - Wastage of midazolam vials reduced down to 8%

Summary

- Current research is limited – our paper lays the foundation for future investigation.

- While licensed RTA products carry a higher upfront cost, the savings from:
  - reduction in ADE
  - Lower consumable use
  - Freed-up healthcare professional time

  Far outweigh the initial higher purchasing costs.

- Switching to licensed RTA products would catalyse development of a greater range of products by commercial manufacturers.

What is the biggest barrier you face in adopting RTA products?

Stakeholders

Different perspectives, different priorities

Cost efficiency
Initial acquisition cost
Hidden costs

Patient safety and error rates
Time spent

Supply chain reliability
Scalable solutions
Sustainability

Who in the room is already collecting data on this – and what can we learn from you?

For commercial manufacturers in the room:

What do you need from healthcare providers or regulators to make RTA products more viable?