

# The Druggle. Improving paediatric oncology drug knowledge in real time.

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**BACKGROUND:** Paediatric oncology is a high risk environment with high risk medications and complex patients. Errors can be catastrophic and eliminating avoidable harm is a strategic focus of the Kids Cancer Centre (KCC).

A review of incidents relating to high risk medications showed that errors commonly occurred due to knowledge deficit.

Oncology pharmacists are the medication experts best placed to deliver education to specialised oncology nursing staff.

**OBJECTIVE:** To formally measure improvement in drug knowledge in real time by implementing a pharmacist led education program (called the Druggle) to target nursing staff.

**METHOD:** A Druggle was conceptualised and implemented using Plan-Do-Study-Act (PDSA) cycles over a period of 6 months. Each Druggle follows a standard format and covers 5 domains: mechanism of action, dose, drug interactions, adverse reactions and administration.



A pre and post quiz was conducted to measure the impact, with one question per domain. A retention quiz at 9 months was performed. Results were analysed by domain and by common and targeted therapy. Staff experience was measured using a star rating.

## RESULTS:

- There were 257 attendees over 28 sessions over 6 months.
- Eight common and seven targeted agents were presented.
- The median pre quiz result was 2.1/5 (42%).
- Post quiz average, 4.25/5 (85%) (p <0.01) (Fig 1).
- There was improvement in all five domains (Fig 2).

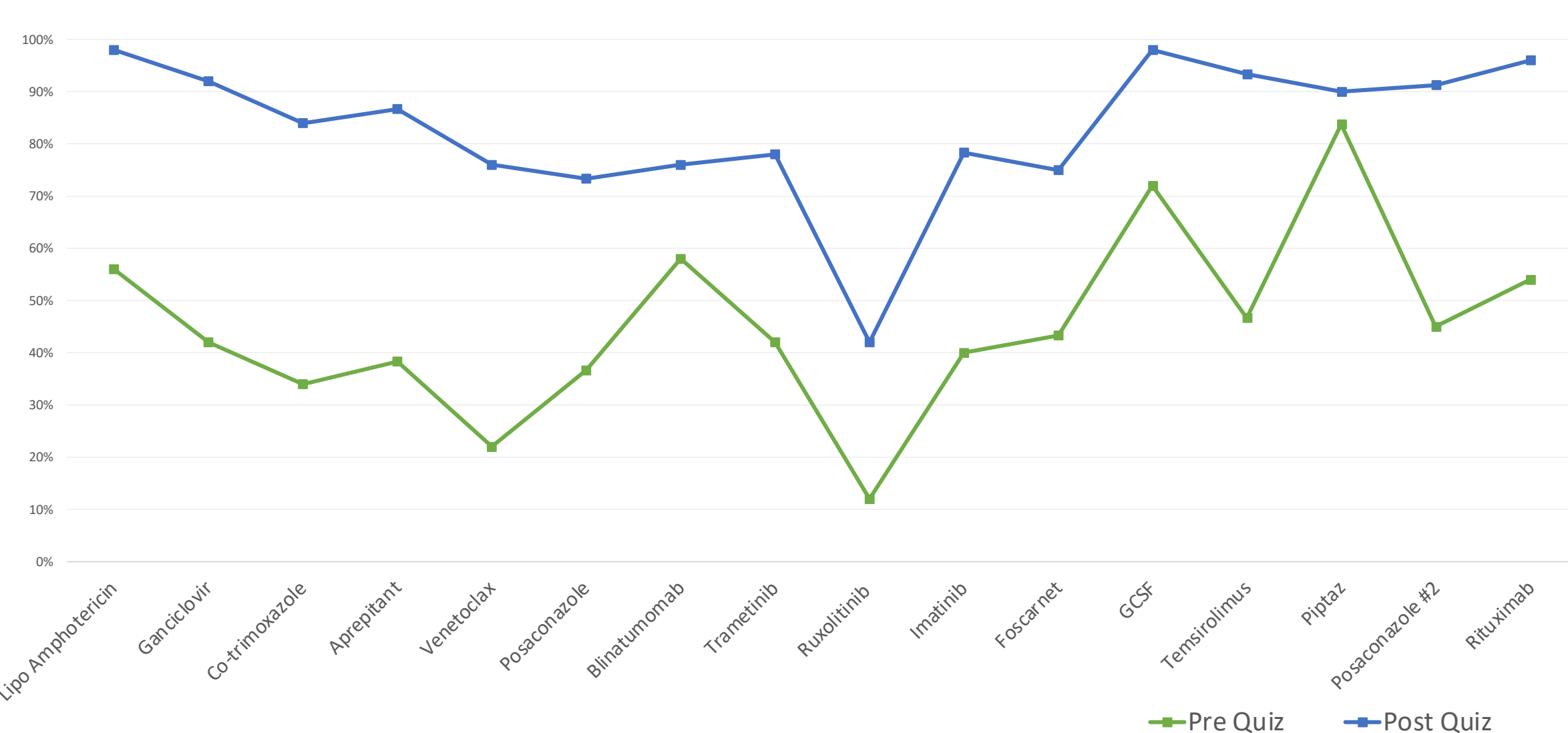


Figure 1: Comparison of pre and post quiz analysed by drug

## EVALUATION:

- Knowledge retention overall at 9 months was 19/29 (68%).
- Nursing staff performed better with common drugs 81% compared to 49% for targeted (p <0.01).
- Knowledge retention was lower in each domain for targeted therapy compared to commonly used medications (Fig 3).

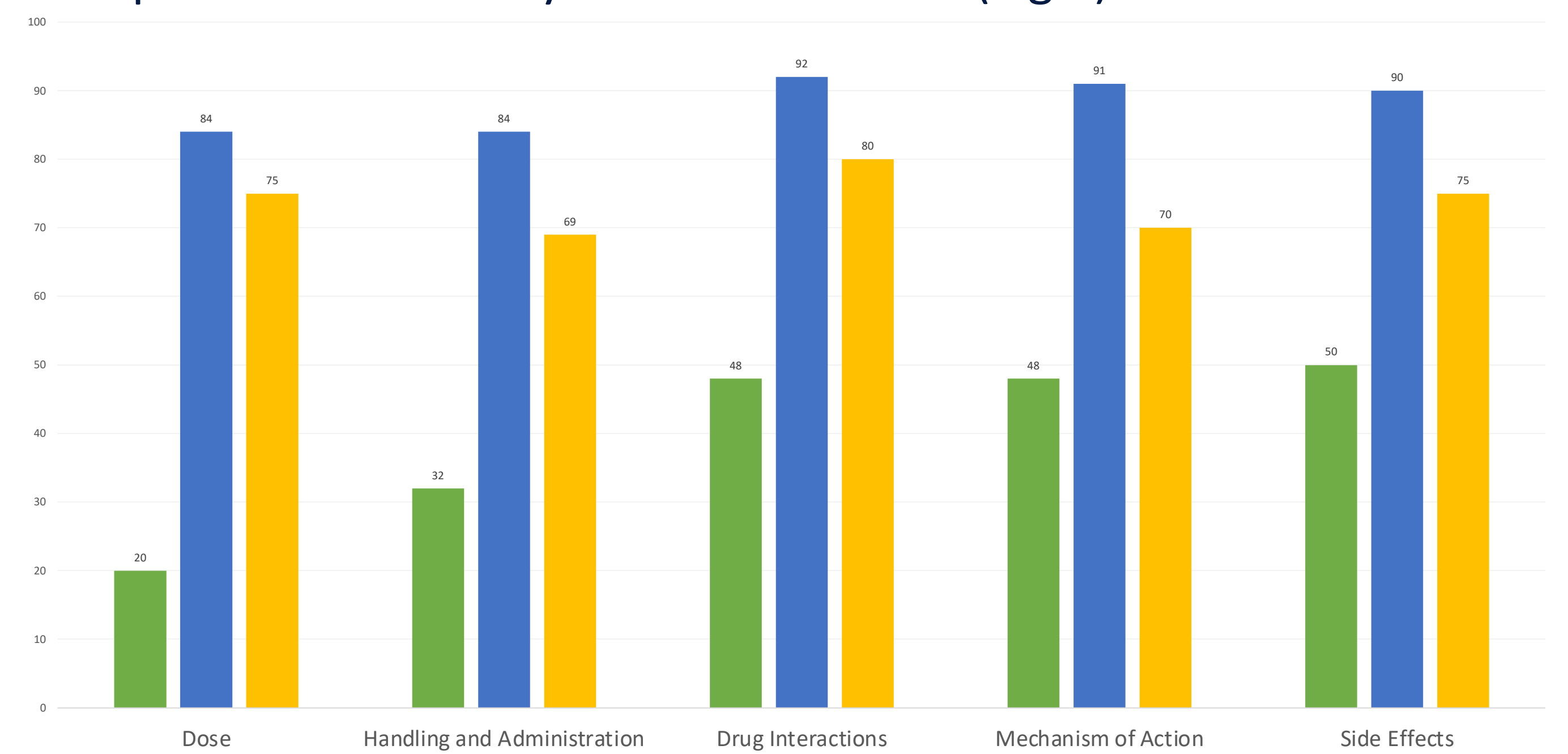


Figure 2: Comparison of pre, post and retention quiz analysed by domain

- Overall Star Rating was 2.8/3.
- Poorer pre quiz outcomes resulted in a lower star rating.
- Lower pre quiz results and star rating were seen in targeted therapy.

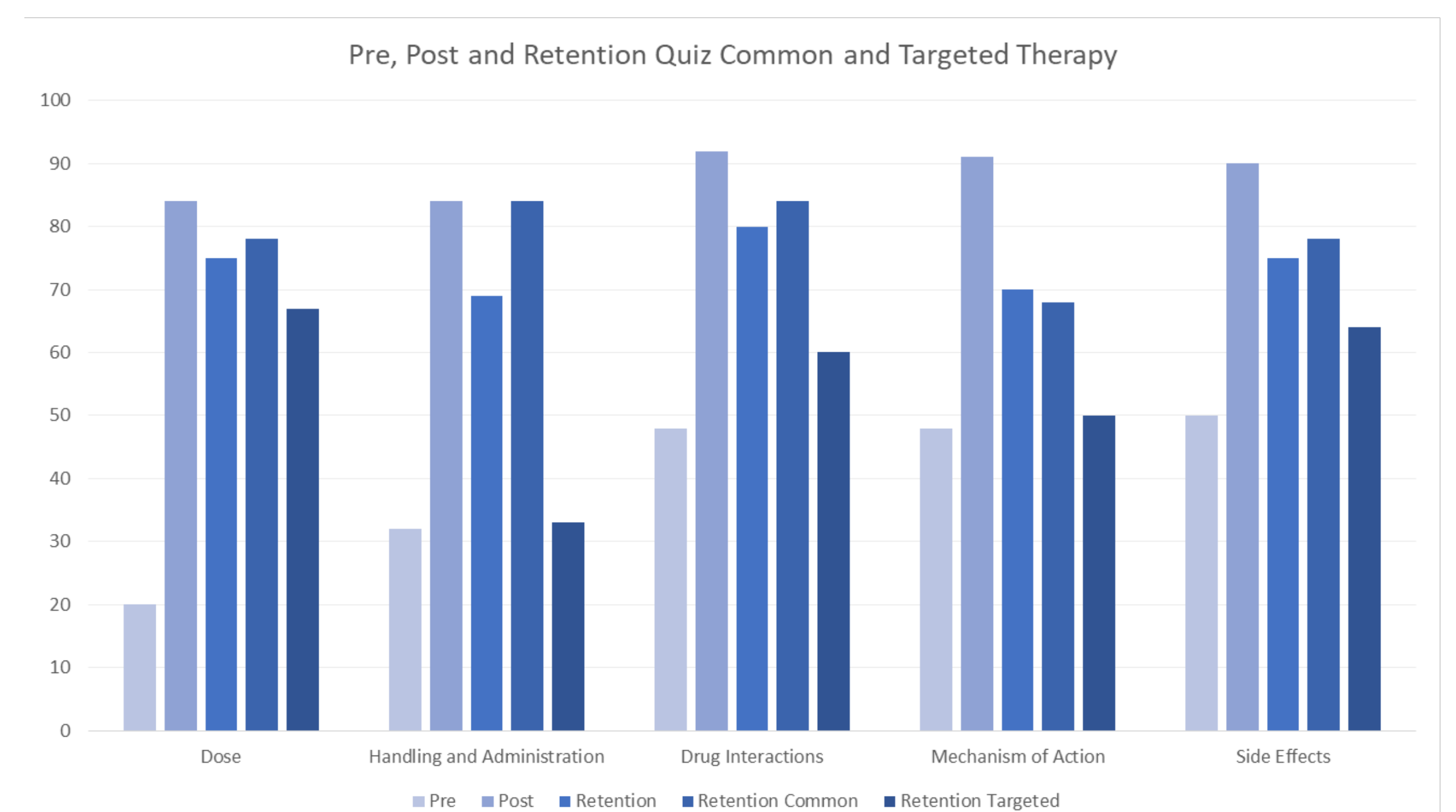


Figure 3: Comparison of pre, post and retention quiz analysed by domain including retention quiz results separated by common and targeted drugs

**Discussion:** The short structured, reproducible format of the pharmacist-led druggle improved nursing drug knowledge in real time. The 5 key domains allowed consistency in the delivery and met staff expectation. The Druggle methodology is transferable within disciplines for commonly prescribed drugs. Using a standardised metric to determine impact and a follow up knowledge retention quiz improved drug knowledge in real time. Improvement was maintained was over 9 months.

Clinical staff delivering targeted therapy require in depth education focused on safe and timely delivery of high risk medications.