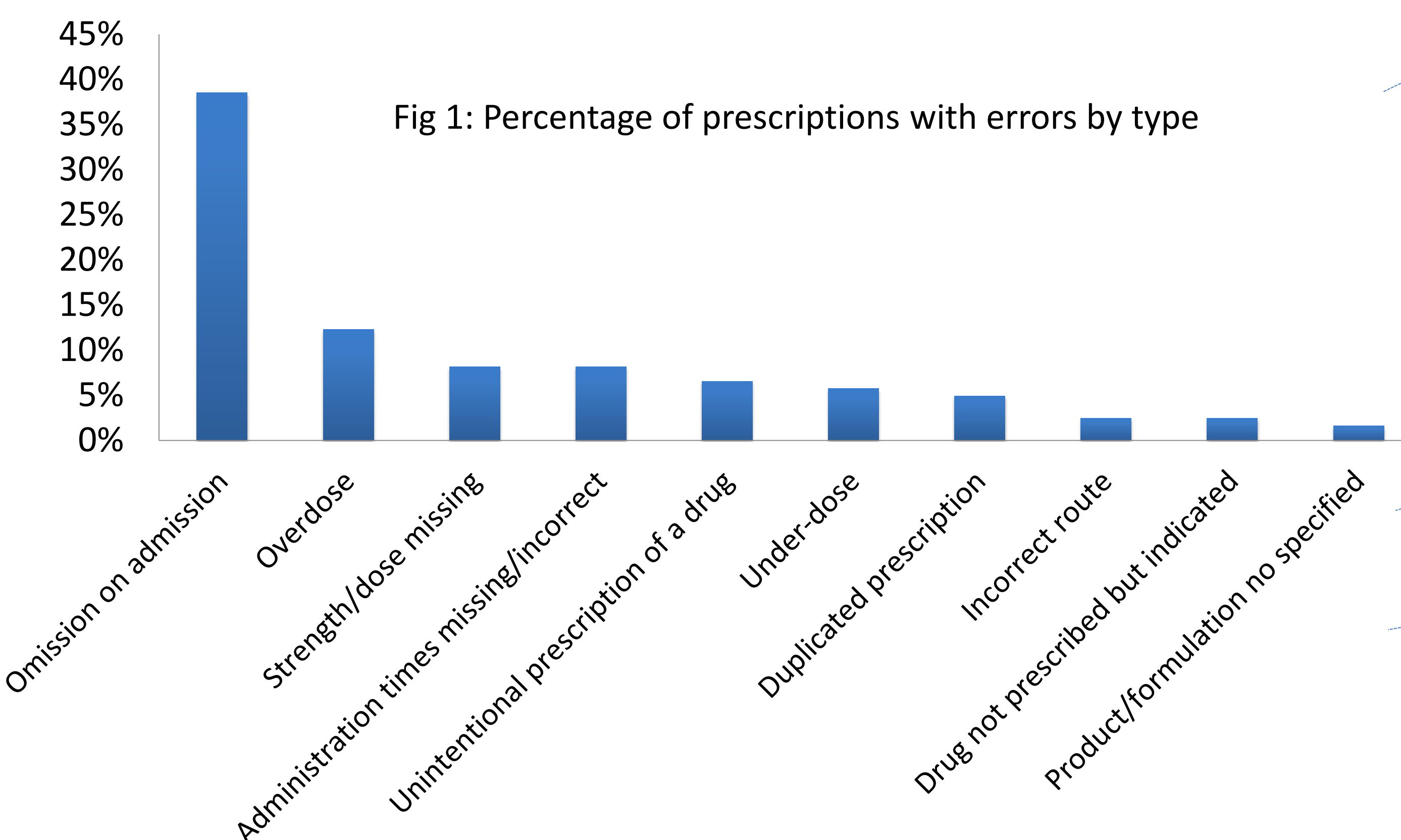


# DART: ON TARGET FOR SAFE PRESCRIBING. A MULTIDISCIPLINARY SIMULATION-BASED QUALITY IMPROVEMENT PROJECT

## The Problem:

- 1 in 10 patients experiences an adverse event in hospital, and 15% of these are medication related (1)
- We audited prescribing of all medications and high-risk medications (e.g. opiates, anticoagulants, antibiotics, insulin) over two weeks in medical patients at the John Radcliffe Hospital, Oxford. 1 in 5 prescriptions had an error
  - Nearly HALF were due to drug omissions on admission (Fig 1)
  - Nearly a THIRD were dose-related (mostly over-dosing)
  - 10% were due to incorrect/absent drug timings
  - Of high-risk drugs, antibiotic and insulin prescribing was least accurate
  - FY1 doctors prescribed the most drugs, and made the most errors



## The Campaign:

We took a multidisciplinary approach to identify the main error areas, and developed the DART campaign:

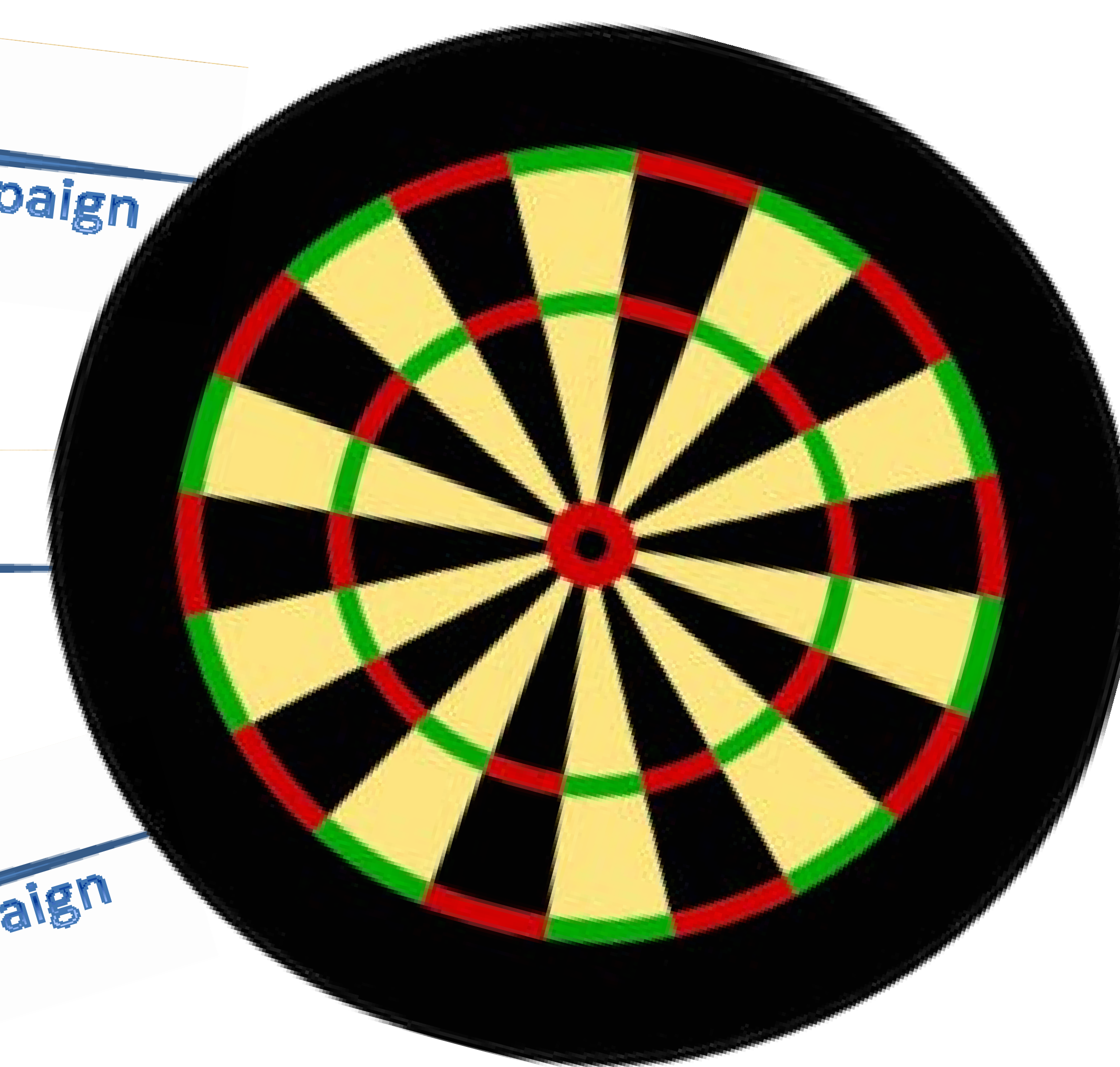
**Stay on target!**

- DOCUMENTATION** - Drug prescribing decisions should be documented
- ALLERGIES** - Allergies should be noted, with reaction, on drug charts
- REGULAR MEDICATIONS** - The Oxfordshire Care Summary provides access about regular medications and doses.
- TIME CRITICAL MEDICINES** - Antibiotics and time critical drugs should be given as appropriate with stat doses.

## 1) Simulation

## 2) Teaching

## 3) Campaign



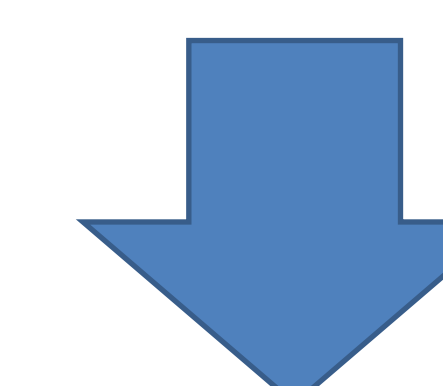
## Feedback:

### Simulation:

- Twenty-three (13 doctors, 6 nurses, 4 pharmacists) attended the simulation sessions.
- 96% of those attending felt the scenario highlighted important areas of prescribing.
- 78% said they would alter their practice as a result of the session.
- Qualitative feedback noted the utility of witnessing the effect of interprofessional communication on prescribing errors, and understanding the role of their colleagues in medicine safety.

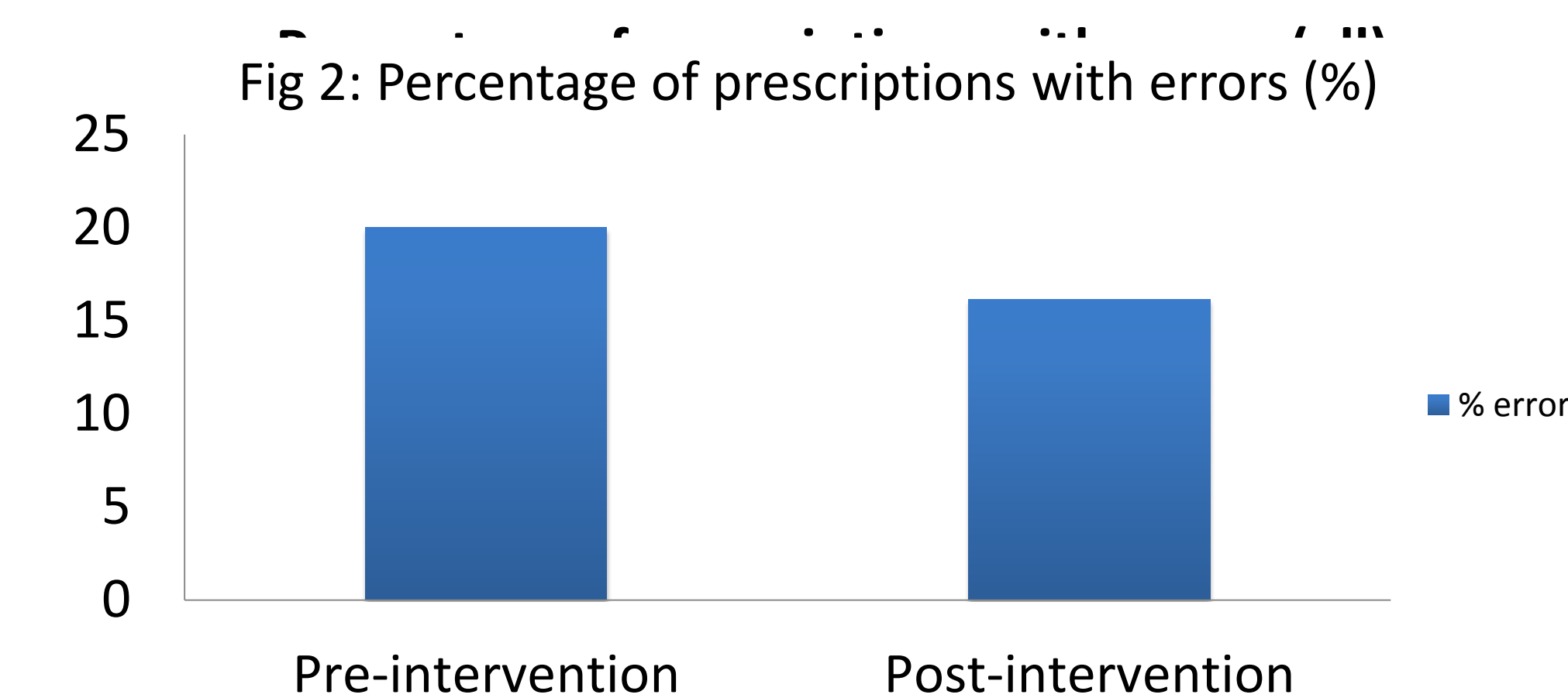
### Teaching

- Fifty FY1 doctors attended.
- 89% thought session was well presented (remainder – 'neutral/don't know')
- 85% thought session contained useful information

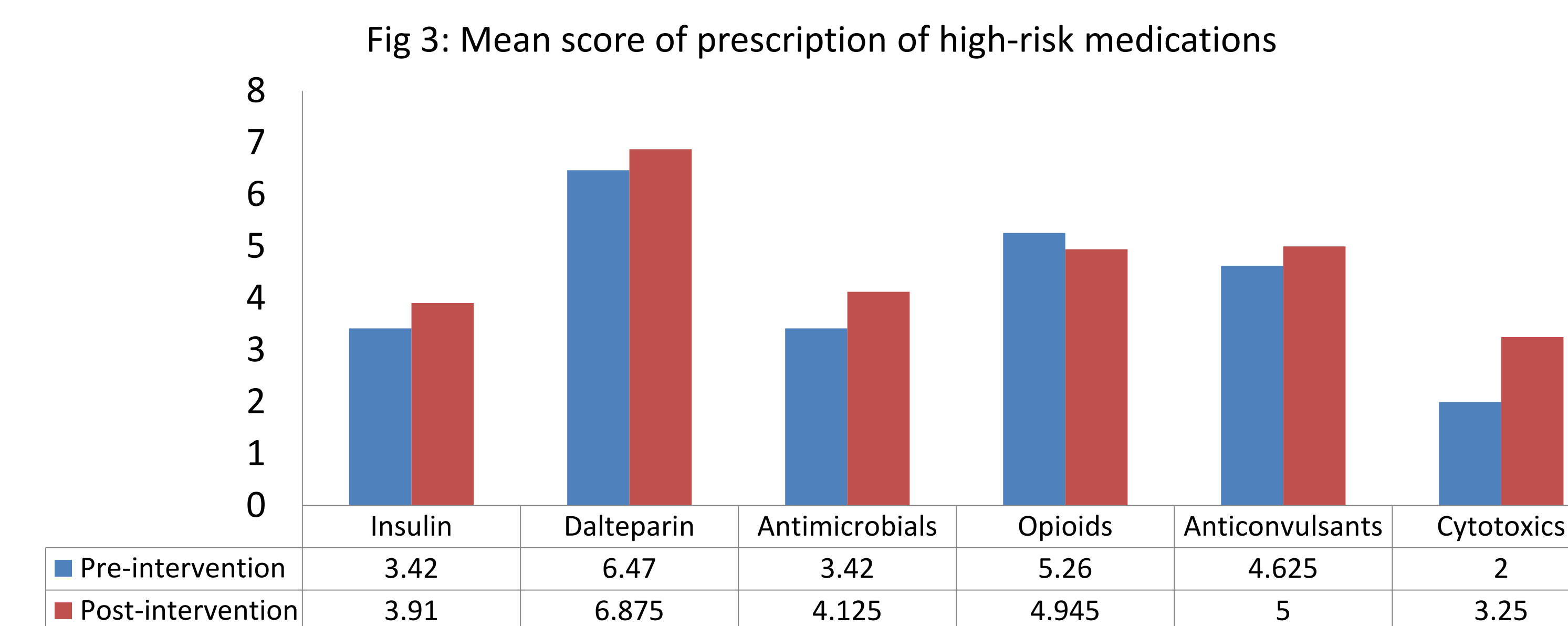


## The Outcome:

Following the interventions described a repeat audit was performed to close the cycle. The error rate decreased from 20% to 16%. (Fig 2)



As in the first audit prescriptions were scored against criteria such as dose, correct route, timings recorded etc. The maximum score for Insulin = 6, anticoagulants = 7, antimicrobials = 5, opioids = 6, anticonvulsants = 5 and cytotoxics = 4. The results of the mean score received in the first round of the audit and the second round are shown below (Fig 3).



## Delivery:

- Trust-wide campaign** – emailing Medicine listserver promoting DART and the Oxfordshire Care Summary, posters in EAU and medical wards, laminated cards for lanyard holders.
- FY1 teaching** – Pharmacist-led scenario-based FY1 teaching involving practical prescribing tasks.
- Pharmacist teaching** – by pharmacists, for pharmacists, about how to improve prescribing safety using a DART approach.
- Multi-disciplinary simulation** with high-fidelity model – we ran four one-hour sessions inviting nurses, doctors and pharmacists to attend. The session involved a fifteen-minute teach-in about DART, followed by a simulation with a model based on a genuine prescribing scenario, with subsequent group feedback.



### Pharmacist's DART

- DOCUMENTATION** - Are the prescriptions clear? Do they need rewriting? Document any discrepancies.
- ALLERGIES** - Is the allergy status recorded? Have you confirmed nature of allergy and time of onset?
- REGULAR MEDICATIONS** - Are all regular medications prescribed? Have discrepancies been resolved?
- TIME CRITICAL MEDICINES** - Do I need to order this medicine urgently? See Time Critical Medicines Guidance.

### Doctor's DART

- DOCUMENTATION** - Complete the prescription CLEARLY so that it can be GIVEN SAFELY. Clearly document changes to medications in the medical notes.
- ALLERGIES** - Is the patient allergic to the drug? Have I checked?
- REGULAR MEDICATIONS** - Do I know their regular medications? - Find out via OxCs.
- TIME CRITICAL MEDICINES** - Does this medication need to be given STAT? Ask nursing staff!

### Nurse's DART

- DOCUMENTATION** - Is the prescription clear? If not ask the Doctor to re-write it. Document administration clearly including reasons for omissions or delays.
- ALLERGIES** - Is the patient allergic to the drug? Ask them every time you administer a medication.
- REGULAR MEDICATIONS** - Is the patient missing any of their regular medication? Tell the doctor/pharmacist about omissions.
- TIME CRITICAL MEDICINES** Does this medication need to be given STAT? Time Critical Guidance on the intranet.

(1) de Vries EN1, Ramrattan MA, Smorenburg SM, Gouma DJ, Boermeester MA. The incidence and nature of in-hospital adverse events: a systematic review. Qual Saf Health Care. 2008 Jun;17(3):216-23. doi: 10.1136/qshc.2007.023622.