

OPTIMISATION OF DRUG DOSAGE

BY CDARS-ASSISTED RENAL FUNCTION SCREENING

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Background

- Appropriately dosed medications are imperative to **improve patient outcomes** and **minimise adverse drug reactions**
- **Pharmacists play important roles** in advising appropriate drug dosage in patients with renal impairment.

Objective

1. To evaluate the **effectiveness** of pharmacist-initiated renal dosage intervention
2. To assess the **efficiency** of pharmacist-led **Clinical Data Analysis and Reporting System, CDARS**-assisted renal function Screening (CAS)

Methodology

Prospective, controlled before-and-after study

Patients (n=14,051) prescribed with drugs requiring renal dosage adjustment (e.g. **antimicrobials, anticoagulants and oral hypoglycaemics**) were screened compared with controls (n=686)

Intervention: **Serum creatinine, patients' demographic details, and targeted drug details** captured from CDARS were exported and filtered efficiently to produce valid cases for renal screening.

Control (effectiveness): cases that fall within **pre-CAS period** without intervention

Control (efficiency): **Manual on-the-spot** renal dose checking was performed **for individual patient**

For sub-optimally dosed cases, pharmacists **recommended dosage adjustment** to physicians.

Follow up within 24 to 48 hours post-intervention for assessing acceptance.

Key Findings

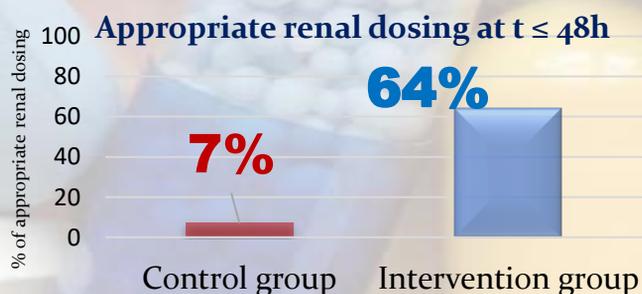
EFFECTIVENESS

- **Corrected renal dosage** was **more likely to be prescribed** in pharmacist-intervened group at $t \leq 48$ hours ($p < 0.05$) compared to control

Pharmacist Intervention

Optimised Renal Dosing

Intervention acceptance



EFFICIENCY

- Significantly **less time per day** was required **by CAS** (M = 49.2 minutes, SD = 11.0 minutes) **than on-the-spot verifying** (M = 474.2 minutes, SD = 193.6 minutes), $t(48) = 10.43$, $p < 0.05$.

✓ **CAS only needs 10.9% of time**

CASE 1



- 84y, male
- Prescribed IV Ertapenem 1g Q24H
- SCr 474; CrCl 7.3
- Recommend 0.5g Q24H, accepted

CASE 2



- 85y, female
- Prescribed PO Dabigatran 110mg BD
- SCr 230; CrCl 14.7
- Recommend switching to clinical alternative, accepted

Conclusion

- ✓ Pharmacist-initiated interventions **effectively ensured** appropriate renal dosage prescribing
- ✓ CAS **was significantly more efficient** than on-the-spot checking