BEDSIDE CHECK OF MEDICATION APPROPRIATENESS (BED-CMA) AS A RISK-BASED TOOL FOR BEDSIDE CLINICAL PHARMACY SERVICES: A PROOF OF CONCEPT STUDY AT THE TRAUMA SURGERY WARD

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BACKGROUND AND IMPORTANCE

Bedside clinical pharmacy is **not possible** full-time and hospital-wide in many European countries due to **limited resources**

- not possible to review pharmacotherapy of every patient
- patients at risk for adverse drug events might be missed

Clinical rules

- use structural information in the electronic health record
- can identify potential risky situations

→ help bedside clinical pharmacists to **prioritize** and **structure** their work

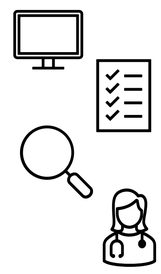
AIM

To evaluate the impact of a **risk-based** clinical pharmacy service (BED-CMA) on **potential inappropriate prescriptions (PIPs)** at the trauma surgery ward

METHODS

15 clinical rules were implemented in the electronic health record *(Table 1)*

→ screening for inappropriate prescriptions
→ alerts on structured worklist
→ review by bedside clinical pharmacist
→ recommendations to trauma surgeon



Study design: interrupted time series analysis

- outcome: proportion residual PIPs per day

$$= \frac{number\ of\ PIPs\ after\ 24h}{number\ of\ initial\ PIPs\ (at\ t0)}$$

- pre-intervention: standard of care clinical pharmacy services (0.3 FTE)
- post-intervention: pharmacist + BED-CMA
  - **A:** basic training + 0.3 FTE
  - **B:** advanced training + 1h daily

Table 1. Examples of clinical rules implemented at the trauma surgery ward

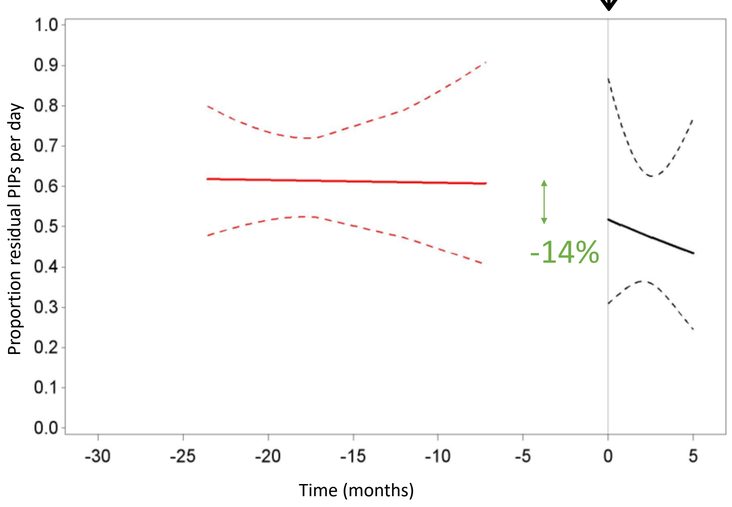
Anticoagulation therapy	Immobile or surgery patients not receiving thrombosis prophylaxis
	Not restarting of oral anticoagulation 72h after surgery
Antimicrobial therapy	Excessive duration of perioperative antibiotic prophylaxis
	Liver function abnormalities associated with rifampicin treatment
	Non-therapeutic vancomycin concentrations
Analgesic therapy	Treatment with opioids without a prescription for paracetamol

RESULTS

INTERVENTION A

Pre-intervention: Median 67% residual PIPs/day

Post-intervention A: Median 45% residual PIPs/day



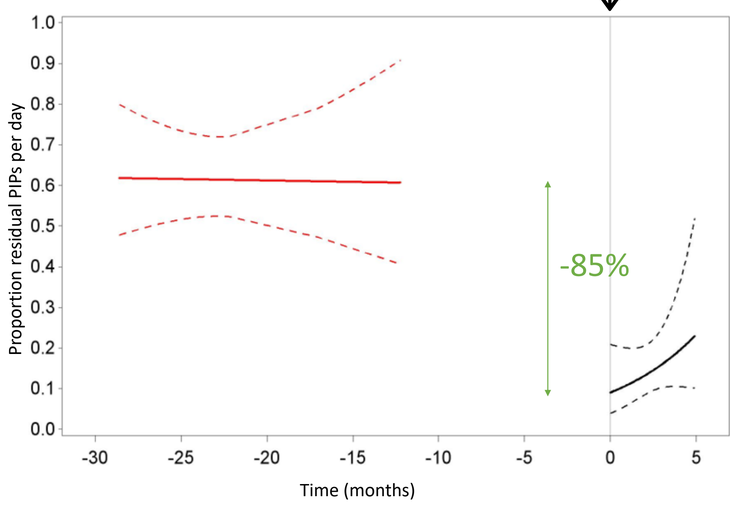
Immediate relative reduction in proportion residual PIPs/day of 14% due to implementation of BED-CMA

19% (46/238) of alerts led to recommendation
→ 67% acceptance within 24h

INTERVENTION B

Pre-intervention: Median 67% residual PIPs/day

Post-intervention B: Median 0% residual PIPs/day



Immediate relative reduction in proportion residual PIPs/day of 85% due to implementation of BED-CMA

56% (167/299) of alerts led to recommendation
→ 84% acceptance within 24h

CONCLUSION AND RELEVANCE

↑ **efficiency** clinical pharmacist
Effective approach to perform clinical pharmacy services
Advanced training and **daily follow-up** of alerts are 2 requirements to be considered