EFFECT OF A DAY-2 INTERVENTION BY AN ANTIMICROBIAL STEWARDSHIP TEAM ON AN UROLOGY WARD IN A DUTCH REGIONAL HOSPITAL, COMPARED TO AN ACADEMIC HOSPITAL.

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Background

A day-2 intervention by an antimicrobial stewardship-team (A-team) is an intervention by an A-team member and a bed-side physician concerning a patient using antimicrobials for at least 48 hours. In an academic hospital this case-audit led to a reduction of antimicrobial use and length of stay (LOS). We evaluated the effect of a similar intervention on the urology ward of a regional hospital.

Materials / methods

In this observational study with a historic cohort control a day-2 intervention was carried out from December 2016 to December 2017 in a regional hospital in the Netherlands. The main endpoint was the number of day-2 antimicrobial case-audits and its effect on antimicrobial use, measured as Defined Daily Doses (DDD), and LOS. Data were compared to a cohort from June 2014 to December 2016. Secondary endpoints were intervention type and compliance to the interventions. For analysis unpaired t-tests, chi square tests and Kaplan-Meier survival plots were applied as appropriate.

Patient characteristics

	Intervention group (N=126)	Control group (N = 438)	p-value
Male	67%	71%	0.51
Mean age	66.8 (± 2.8) years	69.2 (± 1.26) years	0.18

Included patients and the control group patients' characteristics and their respective p-values. 95% Confidence intervals are shown in brackets.

Antimicrobial use

	Intervention group (N=126)	Control group (N = 438)	Difference	p-value
DDD	11.5 (± 1.6)	14.3 (± 0.6)	-19.2%	0.05

Antibiotic consumption compared between the intervention group and the historic control cohort. Consumption is presented as mean DDDs per patient, the difference between the intervention and control in percentages and 95% CI in brackets.
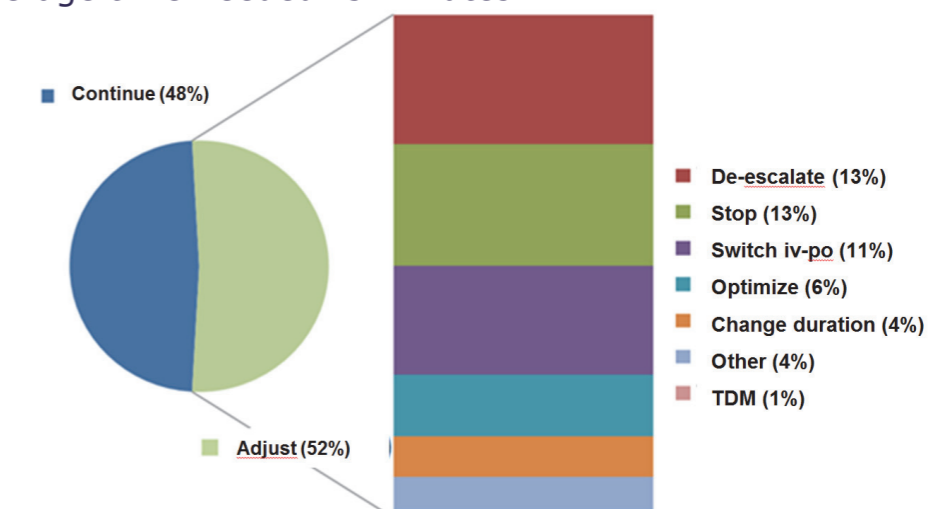
Length of stay

	Intervention group (N=126)	Control group (N = 438)	Difference	p-value
LOS	6.1 (± 0.8)	7.4 (± 0.6)	-1.3 days	0.028

Control:
Intervention:
Log-Rank: p = 0.028
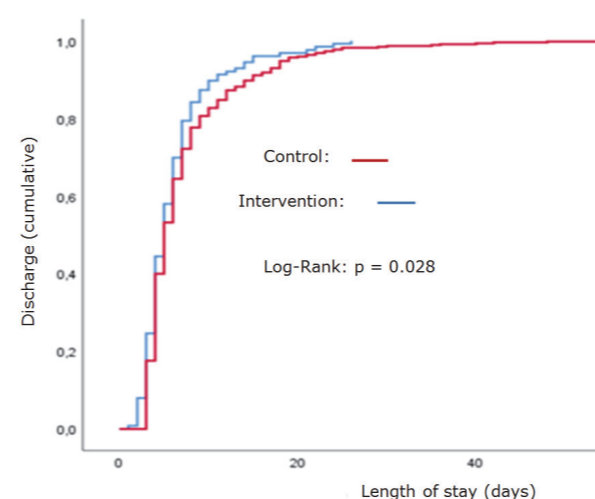
Kaplan–Meier plots of length of stay (LOS). Percentages of patients' days of discharge. Intervention patients compared to the historic cohort.

Interventions

143 interventions for 126 patients.
100% consensus between A-team member and physician.
94% (n=135) compliance.
Average time needed: 5 minutes.

- Continue (48%)
- Adjust (52%)
- De-escalate (13%)
- Stop (13%)
- Switch iv-po (11%)
- Optimize (6%)
- Change duration (4%)
- Other (4%)
- TDM (1%)

Distribution of interventions performed. Percentages refer to the total number of interventions performed (n=143).

Academic Hospital

The relative proportion of modifications matched previously published data from a pilot study at an academic referral hospital. However, initial therapy was continued in this study twice as often as in the academic setting. Both LOS and antimicrobial consumption were significantly reduced also in this setting

Conclusions

A day-2 intervention on an urology ward in a regional hospital leads to alteration of therapy in 52% of the consultations. Reduction in LOS and antimicrobial use were similar to an academic