



THE COST OF ANTIBIOTIC-ASSOCIATED DIARRHEA (AAD) IN HOSPITALIZED PATIENTS

Determining the cost of AAD

A cost model was developed for determining the cost of AAD from a societal, healthcare payer and hospital perspective using complementary top-down and bottom-up approaches.

Data collection

Data for the top-down and bottom-up models were obtained as part of a study investigating the prevalence of AAD in **743 patients on antibiotics therapy** admitted to internal medicine wards in 4 Belgian hospitals. Data collected included:

| Hospital invoices for AAD and non-AAD patients;

Additional resource use specifically attributable to the occurrence of AAD (medical acts, lab tests, drugs, number of days in isolation, extra nursing time for treatment of diarrhea);

Admission/discharge dates for included patients.

Length of stay differences were calculated from the admission/discharge dates comparing AAD to non-AAD patients. For the bottom-up analysis, the cost of hospitalization was calculated by assigning unit costs to the registered additional resource use applicable for the Belgian context based on local health-economic evaluation guidelines. A literature review was performed to determine the cost per day of isolation for the hospital perspective.

Statistical analyses

Length of stay and total invoice cost differences between AAD and non-AAD patients were corrected for confounders using logistic regression analysis, including age, number of AB treatments, type of ward and known risk factors for development of diarrhea after exclusion of outlier results.

For patients hospitalized with AAD Top-down & bottom-up costing

- + 3.1 (1.4) days of hospitalization (mean (SD))
- + 51 (5-154) min AAD care nurse activity per day of AAD
- + 14.1% of patients in isolation for 7 (3.7) days

Additional cost for AAD patients

Perspective	Top-down	Bottom-up
T-W HCP	+811 (367)€	+ 1,253 €
Society	-NA-	+ 2,133 €
Hospital	-NA-	+ 274 €

Additional cost for CDAAD* patients

Perspective Bottom-up Literature + 8,350 €

(2,596-18,879)

Bottom-up costing

The additional cost of AAD or CDAAD was calculated from individual resource use registered specifically in AAD or CDAAD patients.

Top-down costing

The additional cost of AAD or CDAAD was calculated by comparing the total cost for an AAD or CDAAD patient to the total cost of a patient not experiencing AAD based on the total hospital invoice.

Perspectives

Costs were calculated from different perspectives:



Healthcare payer (HCP) perspective Includes costs specifically for the patient and insurers.



Societal perspective

Next to HCP costs, additionally includes costs for society, like absenteeism.



Hospital perspective

Includes hospital specific costs only, like nurse effort and cost for isolation.

The results from this study clearly demonstrate the significant impact of the occurrence of AAD on hospitalization cost.