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BURDEN-WP6

Impact of AMR and appropriate treatment in ICU- acquired infections

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Impact of AMR and appropriate treatment in ICU- acquired infections (WP6)



- Objectives
 - To assess attributable mortality, excess LoS and costs related to AMR in ICU-acquired blood stream infections and pneumonia
 - To assess the impact of the delay in appropriate anti-infectious treatment on the outcome of infected patients in ICU
- Methods
 - use existing data from HELICS-ICU
 - limited number of variables to be added to HELICS-ICU
- Data shared with WP8

Impact of AMR and appropriate treatment in ICU- acquired infections (WP6)



- Deliverable 6.1: distribution of adapted HELICS-ICU protocol and software for ICUs and national coordinating centres
 - Due: Dec 2007, delayed (HR problems, departure CS)
 - Foreseen:
 - protocol finalised: April 2008
 - adapted software + distribution : July 1,2008
 - Start data collection : July 2008

WP6 : Costs (1)

- For this study, costs of AMR = costs associated with increased LoS
- Perspective of the hospital; time-frame: one year
- Top-down costing, using existing financial data

- Cost of one hospital-day / one ICU-day:
 - annual accounting costs (standard) / n days
 - Level: hospital
 - Level: ICU (if available)

WP6 : Costs (2)

Top-down costing of one hospital (ICU) – day

- + Simple, can use existing data
- + Cost estimate of AMR relevant for reporting hospital
- Underlying assumption : all patients consume similar amount of resources
- Comparability between hospitals limited

WP6 : Costs (3)

For units with separate ICU accounting data:

- Ask breakdown of total costs using standard cost-block method
 - Staff
 - Consumables
 - Clinical support services
 - Non clinical support services (direct ICU)
 - Capital equipment
 - Estate
- Comparisons across cost-blocks (eg staff, consumables) less dependant of local accounting systems

Appropriateness of treatment (1)

Case definition

Appropriateness of treatment: all isolated microorganisms have shown sufficient in vitro susceptibility to at least one anti-infectious agent administered

- Treatment must also be timely
 - administered within 24 h of *clinical* diagnosis

Appropriateness of treatment (2) Assessment

- Only microbiologically confirmed / documented infections (May 2007 meeting)
- At least ICU-acquired pneumonia, blood stream infections
- Assessed subjectively by treating physician
 - validation possible for those units collecting data on AM use / susceptibility

Appropriateness of treatment (3)

Selection of causative organism(s) in case of (co)-infection with non-constantly pathogens organisms

Special rules:

- Intra-abdominal infections, mixed flora, select:
 - fungi or quantitatively dominant Gram(-)
 - If semi-quantitative id: more resistant Gram(-) or fungus
- Pulmonary infection, intra-abd infection:
 - *Enterococcus* only if no more plausible pathogen
- Lung isolation of *Candida Species*
 - Consider colonization, unless in other sites/immunodepressed
- *Staphylococcus* other than ***aureus***
 - Non pathogen unless found in isolation in repeated hemocultures

So: Kumar, Crit Care Med 2006, adapted by Dr Lepaepe

Summary: new variables to be added to HELICS-ICU for BURDEN WP6

Hospital level

- Total annual accounting cost in the last year
- Total hospital-days in the last year

ICU-level

- Total accounting cost (ICU) in the last year (optional)
- Total ICU-days in the last year

Patient level

- Hospital admission data
- Date of discharge or end of follow-up
- Status at discharge of hospital

Infection level

- Appropriateness of treatment