OpGen®

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an OpGen group company

Cost reduction in Intensive Care Unit with faster antibiotic stewardship

❯ The problem of rising costs in today's Intensive Care Unit

- each night in the ICU costs about 3,000 €[1]
- rising hospital costs due to longer patients stays in the ICU especially for infected people[2]
- high bacterial infection rates in today's ICUs: around 4% of ICU patients are infected and 70% of them are treated with at least
- 1 antibiotic leading to mortality risk in approximately 30% of patients.[3]
- this leads to rising costs for hospitals when patients are treated with inappropriate antibiotics[4]

❯ The role of antibiotic treatment in rising hospital costs

- Antimicrobial resistance is a burden in today's hospital management: already around 4.95 Million deaths from AMR infections globally[5]
- problem of AMR will get worse: by 2050: around 10 Million deaths worldwide due to antimicrobial resistance[5]
- increasing AMR will affect hospital management and rising hospital costs
- increased costs of longer length of stay is the most significant cost factor in healthcare-associated infection e.g. hospital length of stay (range 1-20 days) due to AMR infections[6]
- problem of inadequate initial antibiotic therapy increases hospital length of stay --> right initial therapy can reduce average weighted length of stay (LOS) by 4.7 days[7]

❯ Reducing antibiotic treatment duration will reduce in-hospital and ICU length of stay, and the likelihood of antibiotic-caused adverse events while resulting in optimized therapy, improved outcomes, and reduced costs·

Save costs with the unyvero solution

- faster results help with early adpation of therapy
- reducing costs for hospital
- reducing length of stay[7]

- Random access with easy workflow
- Multiple Sample Types
- 24/7 Results

Save Hospital Costs with shorter ICU stays with the Unyvero Solution

Our solution: Fast & Simple Antibiotic Therapy after 4 to 5 hours [8]

Unyvero reduced the use of inappropriate antibiotic therapy by 45.1%

Unyvero gives results on pathogens and resistances of a broad menu of most important pathogens in 4-5 hours, instead of 72 hours with culture

Unyvero shortened inappropriate antibiotic therapy by 39 hours, and reduced overall therapy duration by 22.54 %

3 times higher probability of avoiding inappropriate antibiotic therapy in the patient group diagnosed by Unyvero[8]

unyvero

> Reducing Antibiotic treatment duration, in-hospital and ICU length of stay, and the likelihood of antibiotic-caused adverse events while resulting in optimized therapy, improved outcomes, and reduced costs.

Cost Impact of the Unyvero Solution [9]

Average LOS was reduced by 2.26 days using Unyvero

€527.92 with Unyvero versus €753.31 per patient for Traditional Culture as average antibiotic treatment costs

Average hospital stay cost per patient was €23,870.03 compared to €21,661.91 for Traditional Culture and Unyvero added to Traditional Culture

Conclusion
The use of Unyvero is associated with shorter hospital length of stay versus traditional technique, allowing cost savings at hospital level

> Unyvero reduced average total costs by €2208.12 per patient

[1] Martin J, Neurohr C, Bauer M, Weiss M, Schleppers A. Kosten der intensivmedizinischen Versorgung in einem deutschen Krankenhaus: Cost of intensive care in a German hospital: cost-unit accounting based on the InEK matrix. Anaesthesist. 2008 May;57(5):505-12. German. doi: 10.1007/s00101-008-1353-7. PMID: 18389191.| [2] Wilke M, Worf K, Heinlein W, Kast T, Bodmann KF. Early optimization of antibiotic therapy through rapid detection of pathogens and sensitivity : Health economic aspects. Med Klin Intensivmed Notfmed. 2020 Jun;115(5):420-427. German. doi: 10.1007/s00063-020-00680-5. Epub 2020 Apr 8. PMID: 32270257 | [3] Vincent J.-L., Sakr Y., Singer M., Martin-Loeches I., Machado F.R., Marshall J.C., Finfer S., Pelosi P., Brazzi L., Aditianingsih D., et al. Prevalence and Outcomes of Infection Among Patients in Intensive Care Units in 2017. JAMA. 2020;323:1478–1487. doi: 10.1001/jama.2020.2717 | [4] Wilke et al., 2020 | [5] https://medschool.ucsd.edu/som/pediatrics/Divisions/host-microbe-systems/CHARM/challenge/Pages/Global.aspx | [6] Antimicrob Resist Infect Control 2019; 8: 26 | [7] Wilke et al., 2020 | [8] Stolz D. Multiplex Bacterial PCR in Bronchoalveolar Lavage (BAL): Does it Impact Inappropriate Antibiotic Use? September 14,2021. Webinar | [9] Torres C, Oyagüez I, Prieto L, Rodriguez G, Esteban J, Costs Analysis Of Pcr Unyverotm I60-Iti Technique For Detecting Microorganisms In Patients With Suspected Chronic Infection At Musculoskeletal Implants, Miscellaneous | Volume 18, ISSUE 7, PA351, November 01, 2015

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