



Brief name of the working group: INFECTION.

Full name of the working group: NOSOCOMIAL INFECTION AND ANTIBIOTIC TREATMENT IN PATIENTS WITH EXTRACORPOREAL LIFE SUPPORT.

BACKGROUND I. Why is this topic important.

- Nosocomial infection is a frequently reported adverse effect in patients undergoing ECLS, and it remains one of the leading causes of death among individuals receiving either respiratory or circulatory extracorporeal support (Bizzarro MJ, et al, Extracorporeal Life Support Organization Task Force on Infection. Infections acquired during extracorporeal membrane oxygenation in neonates, children, and adults. *Pediatr Crit Care Med* 2011; Schmidt M, et al. Nosocomial infections in adult cardiogenic shock patients supported by venoarterial extracorporeal membrane oxygenation. *Clin Infect Dis* 2012).
- Evidence-based interventions targeting nosocomial infections have shown a direct positive impact on outcomes (Pronovost P et al. An intervention to decrease catheter-related bloodstream infections in the ICU. *NEJM* 2006).
- There is a pressing need for standardized definitions and specific diagnostic criteria for nosocomial infections. Currently, evidence-based protocols for prophylaxis and empiric treatment of these complications are lacking (Abrams et al. ECLS-associated infections in adults: what we know and what we don't yet know. *ICM* 2020).
- Significant pharmacokinetic alterations have been documented in patients undergoing ECLS, significantly impeding the adequate treatment of these complications (Shekar et al. Antimicrobial exposures in critically ill patients receiving extracorporeal membrane oxygenation. *AJRCCM* 2022).
- Recent studies have highlighted the crucial role of intestinal microbiota dysbiosis in the clinical course of critically ill patients. Patients undergoing ECLS are particularly susceptible to these alterations, yet no published research has been conducted to date on this critical and innovative field (Wei R et al. Dysbiosis of intestinal microbiota in critically ill patients and risk of in-hospital mortality. *Am J Transl Res.* 2021).
- Currently, no scientific society adequately addresses the clinical scenario of critically ill patients undergoing ECLS who develop nosocomial infections. Similarly, there is a lack of focus on antibiotic treatment in patients undergoing ECLS.

BACKGROUND II. Why a working group on this topic.

- ECLS encompasses a broad spectrum of medical interventions, with ELSO-EuroELSO serving as the leading societies in this field. Infection, while a specific clinical area within ECLS, is also vast in its scope. Establishing a dedicated working group would facilitate research collaboration, unify diverse clinical experiences, and serve as a platform for organizing scientific events. Moreover, such a group could foster connections with other societies and institutions involved in aspects of infection in critically ill patients (e.g., ESICM, ESCMID, EPHAR). It is imperative for ELSO-EuroELSO to take the initiative in advancing this area of knowledge.



GENERAL OBJECTIVE OF THE GROUP

Be the leading scientific group in the field of nosocomial infection and antibiotic treatment in critically ill patients requiring ECLS.

SPECIFIC OBJECTIVES OF THE GROUP

1. **Coordinate and support research projects** on nosocomial infections and antibiotic treatment in critically ill patients undergoing ECLS.
2. Develop **guidelines** for the prevention, diagnosis, prophylaxis, and empirical treatment of nosocomial infections in critically ill patients undergoing ECLS.
3. Establish and maintain **collaborations** with other **Scientific Societies** focused on this topic, such as ESICM, ESCMID, and others.
4. Promote **multidisciplinary collaboration**, including microbiologists, infectious disease specialists, pharmacologists, and other professionals relevant to the topic.
5. Foster and sustain non-profit **partnerships** with relevant **industry** stakeholders.
6. Arrange **sessions/lectures** on the topic during the annual **EuroELSO Congress**.
7. **Spearhead educational initiatives**: Organize courses, lectures, sessions, webinars, podcasts, and journal clubs focusing on the topic.



METHODS I. Working group structure, members and general activities

WG COORDINATOR EUROELSO STEERING COMMITTEE MEMBER	<p>Coordinates and oversees all group activities. Maintains communication with the EuroELSO Steering Committee. Determines the frequency, content, and format (virtual vs. in-person) of working group meetings. Acts as the representative of EuroELSO in engagements with other related societies and entities, in conjunction with the EuroELSO President. Assesses the contributions and participation of working group members during the annual year-end meeting. Plans and executes working group activities during the EuroELSO Congress, in collaboration with members of the Scientific Committee. Reviews and evaluates candidates for inclusion in the group. Suggests research projects, courses, and webinars. Presents the WG activities in the Steering Committee meeting at the EuroELSO annual Congress.</p>
EUROELSO SCIENTIFIC COMMITTEE MEMBER	<p>Links with EuroELSO Scientific Committee. In collaboration with WG Coordinator:</p> <ul style="list-style-type: none"> - Organizes WG activities during EuroELSO Congress, in coordination with the Scientific Committee. - Proposes investigations, courses, webinars. - Assesses the contributions and participation of working group members during the annual year-end meeting. - Reviews and evaluates candidates for inclusion in the group. - Evaluates proposals of activities from WG members. - Coordinates with EuroELSO Secretariat/PCO the organization of activities.
WORKING GROUP MEMBER*	<p>Attends at least one working group meeting per year. Actively engages in working group activities such as congresses, courses, webinars, and research initiatives. Suggests research projects, courses, webinars, and other scientific activities. Receives an annual certificate confirming membership in the group.</p>

*To become a working group member, it is mandatory to:

- be individual ELSO member or be part of the ECMO team of ELSO Center.
- participates actively in the group.



METHODS II. Working methodology and continuous evaluation

- The WG will convene either virtually or in person, with a minimum frequency of once a year. The WG coordinator will have the authority to decide whether to increase the frequency of meetings, with a maximum of four per year. Additionally, the WG coordinator will determine the format of the meetings (virtual or in person).
- Specific goals for the year will be established during the first WG meeting of the year.
- Throughout the year, the WG is expected to accomplish the following:
 - Participation in the annual EuroELSO Congress.
 - Organize at least one webinar, podcast, or journal club.
 - Update guidelines in alignment with the latest evidence.
 - Maintain at least one active research project.
 - Maintain multidisciplinary nature of the members including:
 - Adult ECLS experts.
 - Pediatrics/neonates ECLS experts.
 - Perfusionists and ICU nurses, experts in ECLS.
 - Microbiologists.
 - Infectious diseases specialists.
 - Pharmacologists.
- Each project (research, webinar, course, meeting) should have clearly defined objectives, with specific goals to be achieved during the year.
- During the last WG meeting of the year, the established goals for the year will be assessed.
- During this final WG meeting of the year, each WG member should present a dossier detailing their work over the past year.
- In the Steering Committee meeting during the Annual EuroELSO Congress, the coordinator of the group will present the group's accomplishments for the year. Approval to continue WG tasks will require at least $\frac{3}{4}$ positive votes from the SC members.