principles of Right Care, Right Now. The Society of Critical Care Medicine Council and the American College of Critical Care Medicine Board of Regents continue their commitment to furthering the understanding and care of heat-related illness and injury via support of an upcoming evidence-based guideline.

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Dr. Barletta received funding from Wolters Kluwer; he disclosed that he is a member of the Society of Critical Care Medicine (SCCM) Council. Dr. Bailey received funding from Northwest Seminars; she disclosed that she is a past president of SCCM. The remaining authors have disclosed that they do not have any potential conflicts of interest.

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Which Strategies Should We Use to Reduce Inappropriate Use of Laboratory Resources in the ICU: Guidelines are Urgently Needed!

KEYWORDS: intensive care unit; inappropriate use; laboratory; laboratory ressources; overuse; prescription

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To the Editor:

The use of laboratory resources is a critical issue in the current medical, economic, and environmental context. This is especially true in the ICU, where patients must undergo frequent blood tests. Hjortsø et al (1) conducted a thorough survey of the literature on the benefits of on-demand versus regular, routine blood sampling in the ICU.

The findings of Hjortsø et al (1) align with our recent literature review of critical care interventions to reduce inappropriate use of laboratory resources (2). We would like to emphasize four points regarding their study and provide key future perspectives on the topic.

First, Hjortsø et al (1) observed that the quality of the studies retrieved was generally low. Of the 81 studies, 22 (27%) were conference abstracts, which typically have less detailed methodologies and summary results. In our review, 18 of 44 studies (41%) were also conference abstracts. In addition, the authors point out that there is little consistency in the types of studies and outcomes measured. This should encourage the establishment of standardized outcomes and protocols so that results can be better compared across studies and more robust conclusions can be drawn.

DOI: 10.1097/CCM.0000000000006254

Second, education strategies and guidelines were the most widely found strategy to reduce inappropriate blood sampling. In our review, we found that education and guidelines strategies were used in 36 studies of 44 (81%), regardless of whether it is used on its own or in combination with another strategy. This underlines the importance of these two strategies in reducing inappropriate laboratory use.

Third, authors noted "little consensus on the best practice regarding how to reduce potentially unnecessary blood testing, including what tests to target." Comparison of guidance-base interventions in the ICU show discordances between local guidances (for instance for coagulation profile, arterial blood gas, electrolytes, full blood count, and liver function tests) (2). We are thus convinced that a thorough summary of available guidelines for the prescription of standard (i.e., more frequently performed) hematology and biochemistry laboratory tests in the ICU and a comparison between guidance-based interventions and guidelines are urgently needed.

Finally, reducing the inappropriate use of laboratory testing in the ICU could allow for the use of small-volume blood collection tubes (instead of standard volume). This change may decrease the need for RBC transfusions without compromising the laboratory analysis quality (3).

In conclusion, the systematic review by Hjortsø et al (1) highlights the urgent need to address the issue of inappropriate use of laboratory resources in the ICU and to apply this knowledge outside the ICU in the future.

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Drs. Closset, Devis, and Mullier designed the article. Drs. Closset, Devis, Mullier, and Honore participated in drafting, reviewing, and read and approved the final version of the article.

The authors have disclosed that they do not have any potential conflicts of interest.

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The authors reply:

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We have with interest read the insightful letter by Mullier et al (1) discussing the critical issue of laboratory utilization in the ICU. We fully agree that the utilization of laboratory resources remains a significant concern in healthcare.

In 2022, U.S. healthcare spending totaled $4.5 trillion, accounting for 17.3% of the Gross Domestic Product. With global healthcare expenditures growing to $9.8 trillion, the need for rational choices in healthcare is immediate, not only in the United States but globally (2). We found that interventions aiming to reduce routine blood testing in ICUs may lead to an estimated annual cost reduction of median $20,465 per bed in medical ICUs (3).

Furthermore, the U.S. healthcare sector is responsible for an estimated 8.5% of national carbon emissions, with hospitals contributing more than one-third of the sector's total emissions. Globally, the healthcare sector contributes to an estimated 4%–6% of the world's total carbon emissions (4). Medical

DOI: 10.1097/CCM.0000000000006281