

SYMPOSIUM 6 - Environmental Impact of Laboratory Medicine (Green and Sustainable Medical Laboratories)

AN OBJECTIVE ASSESSMENT OF IMPLEMENTING SUSTAINABLE PRACTICES IN THE LABORATORY - RESULTS OF A PILOT STUDY.

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In 2024, as part of a review by the Environmental Impact of Laboratory Medicine Working Group into a potential global assessment document for laboratory sustainability, an opportunity arose to work with the Quality and Accreditation Institute (QAI), India. They had created a Green Hospital Accreditation standard and scoring system and had successfully deployed this. This document was an excellent template but was not specific enough to be deployed in the clinical laboratory. Using the EFLM Green Lab document as a data source the document was updated to be a potential assessment and accreditation document for the laboratory. This talk will discuss the structure and function of the document, the assessment scoring system used to evaluate the clinical laboratory, and decision on accreditation based on the score achieved. There was a concerted look at the views of the assessors and the assessed clinical laboratories in order to understand both how easy it was to score the criterion points and from the laboratory side how easy it was to both understand each criterion and also understand how to address it.

The overall hope of this study is to lay the foundation for an assessment tool that can also satisfy general accreditation principles laid down in these standards as well as provide the benchmark for an accreditation tool that can be implemented globally alongside ISO15189.

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AN EXAMINATION OF THE BENEFITS AND IMPEDIMENTS OF SUSTAINABLE LABORATORY MEDICINE

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Planetary ill- health from climate change is the greatest challenge that humanity faces currently. Laboratory medicine (LM) is a significant aspect of science which inadvertently contributes to environmental disorders. Like the rest of science, LM is committed to advancing human knowledge and understanding nature, especially as regards health and well-being. While pursuing these laudable goals like the rest of science, LM inflicts unintended environmental sequelae that contribute to planetary ill-health, such as green gas generation, huge energy and water consumption, generation of toxic and non-toxic waste including plastic pollution among others. The benefits and barriers to sustainable laboratory medicine practice are succinctly examined in this presentation. Sustainability in laboratory medicine, an extension of green chemistry, aims to minimize human and environmental damage, during scientific processes and product manufacture. The benefits of sustainable laboratory medicine, though poorly recognized in LM; include prudential resource use and management; reduced (green gas) CO₂ generation, reduced water and energy consumption, promotion of recycling and circular economy and reduced waste generation; translating to huge economic gains, healthier environment and overall planetary health. These benefits notwithstanding, a number of impediments lurk in the pathway to realizing the benefits of sustainable laboratory medicine, perceived huge financial investment, lack of visionary leadership, poor understanding of the concept of green chemistry and sustainability or knowledge deficit, and the voluntary nature of sustainability at the moment. These impediments must be mitigated to properly harness the immense near and long-term benefits of sustainability. Some measures may include, creative awareness education, discouraging traditional laboratory work culture, inclusion of sustainability and green chemistry in curricula for scientists in laboratory medicine, including regular discussion in Young Scientists' fora. A good global understanding and acceptance of sustainability in laboratory medicine is an indisputable pathway to restoring planetary health.