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148d - Performance metrics towards adoption and operationalization of aerosol sensors

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The adoption and potential operationalization of aerosol sensors in occupational hygiene entails an understanding of the performance of a specific sensor to measure the aerosol of interest. Often, hygienists intend to monitor the airborne mass concentration of a certain aerosol and most sensor technologies can only provide estimates since they do not measure mass directly. Technological advancements in terms of sensors and algorithms will improve the performance of products in the future. But this might come with an increased cost and indirectly hindered adoption in most environments. Practices such as assessment and evaluation of the performance conducted periodically by the manufacturer and field assessment and calibration of the aerosol sensors can increase the confidence in the data generated. The field practices are not well established and hygienists should consider them as an important step of their activities. This contribution will provide an overview of the performance metrics for aerosol sensors that occupational hygienists should consider during the selection and adoption of the technologies. Most metrics can be applied to both personal and area aerosol monitors and for low-cost and medium-cost devices. For each metric, suggestions will be shared on how to measure it in the field and how hygienists can engage with manufacturers to receive information.