Reduction in the number of reported results from blood gas analyzers on an Adult Intensive Care Unit by effective order management and parameter selection on the blood gas analyzer

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At the Adult Intensive Care Unit, three Siemens RapidLab 1265 blood gas analyzers are deployed under the responsibility of the Department of Clinical Chemistry, involving selection and buying of the equipment, coupling to the Laboratory Information Management System, maintenance and repairs, and training of the nurses handling the samples. In the fourth quarter of 2012, a total number of 13,931 samples were measured on those decentralized blood gas analyzers. Besides the measurement of Blood gases, the RapidLab 1265 blood gas analyzers are capable of measuring Sodium, Potassium, Chloride, Ionized Calcium, Hemoglobin, Glucose, and Lactate. Up till 2013, the decentralized blood gas analyzers were set to measure each of these parameters by default, resulting in a substantial number of redundant reported testing results when, for example, only one parameter was required to monitor the clinical progress of the patient. To reduce the number of reported results, a more effective way of order management was implemented. Six different pre-sets were installed on the blood gas analyzers that, in an easy and convenient way, enabled the nursing staff to selectively measure only the required analytes. Furthermore, through an elaborate training program the medical and nursing staff was stimulated to apply a standardized and effective way of order management and a selective usage of the blood gas analyzers. These measures resulted in a clear reduction in reported results from the blood gas analyzers on the Adult Intensive Care Unit. In the fourth quarter of 2013, the total number of samples measured on the blood gas analyzers of the Adult Intensive Care Unit (n=10,328) was decreased by 26% in relation to the fourth quarter of 2012. Furthermore, as a consequence of using the pre-sets, the number of individual reported parameters was decreased as well. Specifically, Glucose and Potassium were reported in 90% of the total number of samples, Hemoglobin in 80%, Blood gases in 75%, Sodium in 70%, Chloride and Ionized Calcium in 45%, and Lactate in 35% of the samples. Overall, these findings illustrate that by using a standardized and effective way of order management, smart pre-sets on the decentralized blood gas analyzers and creating more awareness among the medical and nursing staff, a clear reduction in reported results from decentralized blood gas analyzers can be achieved.