

APPENDIX 1. Glossary of terms.

Note: Except where indicated otherwise, definitions are adapted from the Institute for Safe Medication Practices (US) *Guidelines for Optimizing Safe Implementation and Use of Smart Infusion Pumps*.¹

Auto-documentation: Sending infusion information automatically to the electronic health record system for manual practitioner confirmation, to allow accurate recording of this information in the patient's record after the infusion has started.

Auto-programming: Automatic programming of infusion parameters from the electronic health record system to the smart infusion pump after use of the bar code medication administration system to associate the patient and the medication/fluid container.

Care area/profile: Method for grouping medication and fluid infusions that may have different *soft* and *hard limits*, patient weight parameters, and alarm thresholds.

Clinical engineer: Also known as a biomedical engineer, clinical engineers work in hospitals and are involved in health care technology management activities, including systems integration, capital acquisition and implementation, patient safety, compliance with standards and regulations, and risk management.²

Dose error reduction system (DERS): The integral computer software in smart infusion pumps intended to aid in prevention of infusion programming-related errors and to warn users of potential over- or under-delivery of a medication or fluid by checking programmed doses/rates against facility-configurable preset limits specific to the medication/fluid and to a clinical application and/or location. The DERS is often referred to as the “drug library”.

Hard limit: A medication- or fluid-specific forcing function that ensures that an infusion cannot be given outside facility-established medication- or fluid-specific parameters. These upper (maximum) and lower (minimum) limits are set within the drug library and cannot be overridden.

Interoperability: Technologies that enable the creation of an electronic connection between an infusion pump channel and an electronic health record system. This connection allows the pump channel, the patient, and the medication order to be associated with one another.

Overfill: The excess volume in a container of an injectable product, exceeding the content indicated in the product labelling. The excess volume is intended to be sufficient to permit withdrawal and administration of the labelled volumes.

Soft limit: A medication- or fluid-specific limit that can be overridden by a practitioner. These upper (maximum) and lower (minimum) limits advise the user that the specified infusion is about to be infused outside facility-established parameters.

Sources

1. *Guidelines for optimizing safe implementation and use of smart infusion pumps*. Institute for Safe Medication Practices (US); 2020 [cited 2021 Jan 29]. Available from: <https://www.ismp.org/guidelines/safe-implementation-and-use-smart-pumps>
2. *What is a biomedical/clinical engineer?* Canadian Medical and Biological Engineering Society; [cited 2022 July 14]. Available from: <https://www.cmbes.ca/about/what-is-a-biomedical-engineer>

Appendix to: Sproul A, Newman H. Get smart, Canada: exploring smart pump implementation, management, and compliance with standards through a nationwide survey. *Can J Hosp Pharm*. 2023;76(3):185-95.