

DESIGN AND ELABORATION OF AN INTELLIGENT INTRAVENOUS INFUSION PUMPS FOR THE INTENSIVE CARE UNIT





WHAT WAS DONE?

 An updated guide on intravenous drug administration including infusion parameters for intelligent intravenous infusion pumps, so called "IV smarts pumps", used in the intensive care unit (ICU)

WHY WAS IT DONE?

- Critically ill patients often require the administration of several intravenous drugs and that includes infusion pumps.
- New infusion pumps offer the ability to build a drug library within the infusion system itself, improving intravenous infusion medication safety, but this library must be updated.
- This guide was developed in order to help ICU staff to practice safe prescribing and managing medicines and to reduce the incidence of adverse drug events and administration errors.

HOW WAS IT DONE?

Database

- A multidisciplinary group was formed (pharmacysts, physicians and nurses)
- The drugs included were divided into therapeutic groups and divided among the participants.

Drugs

- Sedatives analgesics, antihypertensives, vassopresors, anti-arrhythmic and others such as insulin, heparin, etc
- For each drug, a bibliographic research was conducted, gathering information from manufacturers, intravenous drugs databases (Uptodate ®, Micromedex ®, Stabilis®) and other hospitals guidelines.

Data

• Drug name, lower and up hard limit, default dilution, flow rate, default rate, rate upper soft and hard limit, bolus default, flow rate and volume upper limit, loading dose, duration, dilution volume, default, and lower and upper hard limit

WHAT HAS BEEN ACHIEVED?

- This guideline promotes, mainly, a safety use of drugs usually administered in critical ill patients, being available for all the staff in this unit.
- Its elaboration has permitted to avoid medication errors and to establish a narrower bound between the Pharmacy Service and Critical Care Unit, developing new partnerships.

WHAT NEXT?

- We are still working on improving this guide, making it easier to understand and with a unified vocabulary.
- We will update it periodically in order to include new evidences and new drugs if necessary