European survey on the implementation of standardized concentrations for drug infusion in pediatric and neonatal intensive care

Senhaji S1,2, Luhmann-Lunt C2, Corbelli R2, Rimensberger P2, Fonzo-Christe C1, Bonnabry P1,3
1Pharmacy, 2Neonatal and Pediatric Intensive Care, Geneva University Hospitals (HUG), Geneva, Switzerland
3School of pharmaceutical sciences, University of Geneva, University of Lausanne, Geneva, Switzerland

Background

Electronic standardized questionnaire (SurveyMonkey®) sent by email (May 2013, reminder at 6 weeks) to all members of:
- ESPNIC (European Society of Pediatric and Neonatal Intensive Care)
- GSASA (Swiss Association of Hospital Pharmacists)
- EAHP (European Association of Hospital Pharmacists: country delegates)

Methods

88 answers from 22 countries
Mainly Germany (17%), Spain (11%), England (10%), Netherlands (9%) Physicians: 45.5%, Hospital pharmacists: 36.4%, Nurses: 18.2%

Results

% of infusions prepared as StdC

- >80% n=22/88
- 20-80% 28.4% n=25/88
- < 20% 46.6% n=41/88

Type of drugs used as StdC

StdC>80% were mainly implemented in PICUs (16/22) and mainly for “High Alert Medications” (i.e. adrenergic agonists, analgesics, sedatives, and insulin).

StdC was mostly based on institutionalized Concentrations (15/20 (75%)) and was implemented > 5 years in 14/20 (70%) of the centers.

Prevalence of the use of Smart-pumps

Moving to StdC was considered as a way to reduce medication errors in 73.8% (18/23 StdC 20-80%) and 68% (21/31 StdC < 20%).

StdC implementation failure due to fluid overload, too many concentrations to cover all weight ranges and nurses’ resistance were reported in 9 centers.

Ref.: 1. Jt Comm Perspect 2004;24:11

Conclusion

StdC and Smart-pump are implemented in 25% and 50% of answering European centers.

StdC are used for high-risk medications and perceived as a safety strategy.

Factors associated with implementation failure should be considered before moving to StdC.