

# 5PSQ-140 RECONSTITUTION PRACTICE BY A PAEDIATRIC AND NEONATAL WARD-BASED PHARMACIST

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## Objectives

We have studied how the drug handling process can be enhanced by a pharmacist with regards to reconstitution (Fig 1). In our paediatric hospital, we have a ward-based model (Fig 2) regarding the drug-handling process (excluding TPN and cytotoxic drugs prepared patient specific from the pharmacy).

## Method

During 2014 (May - October) two intervention departments, oncology and neonatal at a tertiary paediatric hospital (250 beds), had pharmacist assisted reconstitution on weekdays with photo documentation (Fig 3). Nurse practitioners in these two departments, as well as two corresponding control departments, received validated surveys before and after the study period (Tab 1) investigated with Fisher's exact test and Wilcoxon rank sum. Time for preparation, incident reports and documentation of additional interventions was also studied.

Ward	Type	Number of possible responders (% responders)	
		May	October
Neonatal	Intervention	42 (71%)	48 (60%)
	Control	35 (60%)	38 (55%)
Oncology	Intervention	25 (80%)	23 (74%)
	Control	21 (81%)	21 (81%)

**Table 1.** Number of respondents of the survey before and after the study.

## Discussion

In Sweden, ward-based reconstitution could not be performed by technician support due to regulatory issues.

In a highly specialised paediatric hospital, the reconstitution practice is a way to be trained in paediatric pharmacy practice. At the same time, this practice enhance the quality of the drug handling process and reduce the stress experienced by nurses.

## Results

- Both intervention departments had a high appreciation of the interventions, which increased significantly ( $p < 0,05^*$ ) during the study period:
  - Oncology: from 74% to 88%\*
  - Neonatal: from 76% to 100%\*
- Nurses did not see any change in the risk of type of errors during the study period and no changes in types of reported incidents could be identified.
- The proportion of nurses feeling less stressed increased from:
  - Oncology: from 65% to 95%
  - Neonatal: from 70% to 93%\*
- The reported increases were not seen at the control departments.
- The time nurses spent in the medication room was reduced with 2 hours/day.
- The additional practices by the pharmacist resulted in an added value, e.g. education and investigative support.

## References

- <http://www.eped.se> [In Swedish]
- Nydert P, Poole R. Exploring differences in inpatient drug purchasing cost between two pediatric hospitals. *JPPT* 2012 17(4):374-81.

## Conclusions

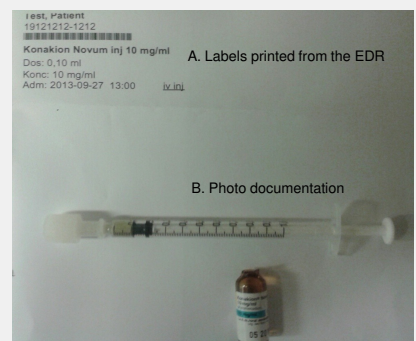
- The study provided support for the establishment of two permanent ward based pharmacist employments at the oncology and neonatal ward.
- The pharmacists enhanced the drug handling process and reduced stress by drug order verification, updating instructions, audits, education and reconstitution practices.
- Today eight ward-based pharmacist are employed at ALCH (e.g. neonatology, oncology, PICU, gastroenterology, neurology, hepatology, orthopedics) with the possibility to achieve clinical pediatric pharmacy competence and prepare the hospital for an updated drug handling process.



**Figure 1.** A) Ward-based pharmacist in the medication room with access to B) electronic instructions by eped.se(1) and C) documentation by camera.



**Figure 2.** The drug-handling process (2). The bold arrow between the grey and white boxes illustrate the economic and drug product transfer from the procured pharmacy provider to the ward at Astrid Lindgren Children's Hospital (ALCH). The ward-based pharmacist reconstitute the patient dose at the ward.



**Figure 3:** A) Patient-specific label printed from the Electronic Drug Record (EDR) and B) example of photo documentation.