

## Building up a regional and interdisciplinary network for better use of medicines in intensive care units

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### Background

Clinical pharmacy in intensive care units (ICUs) showed beneficial effects on safety and economics.

The set up of a regional network including pharmacists, physicians and nurses of all ICUs seemed useful for the following reasons:

- Issues regarding medication use in ICU are similar in all hospitals.
- Patients are often transferred from a tertiary care hospital to a secondary one or vice versa.
- Health care givers move from a hospital to another one during their career

In 2007, an interdisciplinary group, **Sipharom**, was set up in order to create a network in the French and Italian speaking parts of Switzerland.

### Projet Purpose

The goals of the project are:

- exchange of data on drug administration in ICUs
- sharing of knowledge and skills
- establishing standards for the administration of drugs

### Results

Four main axes have been developed:

- 1) Harmonisation of the dilution and preparation** of intravenous drugs: 52 standard dilutions have been defined. This led to collaborations with industries in order to obtain ready-to-use preparations at the defined dilutions.

#### Examples of dilutions:

Brand Name	Generic name	DECISION OF SIPHAROM
ACTRAPID	Insuline	0,5 ml = 50 UI + Dextrose 5 % or NaCl 0,9% ad 50 ml. 1 ml/h = 1 UI/h.
ADALAT	Nifedipine	5 mg (1 x 50 ml/5 mg), PURE
ADRENALINE	Epinephrine	15 mg (1,5 x 10 ml/10 mg) + 35 ml Dextrose 5% 1 ml/h = 5 µg/min
ADRENALINE	Epinephrine	3 mg (3 x 1 ml/1 mg) + 47 ml NaCl 0.9% 1 ml/h = 1 mcg/min
AGGRASTAT	Tirofiban	12.5 mg (1 Flex de 250 ml), PURE 1 ml/h = 50 µg/h
CATAPRESAN	Clonidine	2amp.=300mcg=2ml + 22ml NaCl 0.9% 1ml=12.5 mcg (300mcg/24h=1ml/h)

- 3) Exchange of critical data**  
Messages of alerts, problems of stability or of physico-chemical compatibilities



- 2) Harmonisation of the labelling** of syringes:  
Definition of the minimal list of elements that labels have to include (based on the available international guidelines and norms).

#### Minimal list of elements required on labels

1. Preparation / Dilution
2. Highly relevant information (e.g. limited stability / To be protected from light)
3. Date / Time of preparation / signature(s)
4. Brand name
5. Generic name
6. Dose-speed of perfusion

- 4) Drafting of joint guidelines** on drug use within the network

#### Benefits of standardisation

##### Nurses:

Univocal documents  
Simplicity in drug preparation and administration

##### Physicians:

Reflection on practices and of the way of prescribing

##### Pharmacists :

Simplification in the elaboration of reference documents  
(concentration, stability)  
Simplification in the realisation of compatibility analysis

#### Expected impact of the network

##### Impact on safety

Decrease of risk during transfer of patients  
Less habits to change when a care-giver (physician or nurse) move to another hospital  
Standardisation of medication use

##### Financial impact

Weight of the network when negotiating with industries

### Discussion and conclusions

Establishing a network is an effective way of increasing the exchange of expertise.

It can lead to the simplification and harmonization of practices and therefore help reducing risks and medication errors and limit problems related to the movement of patients and caregivers.

Pharmacists have to be the driving force of such interdisciplinary projects focusing on drug use.

#### Members of the network

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