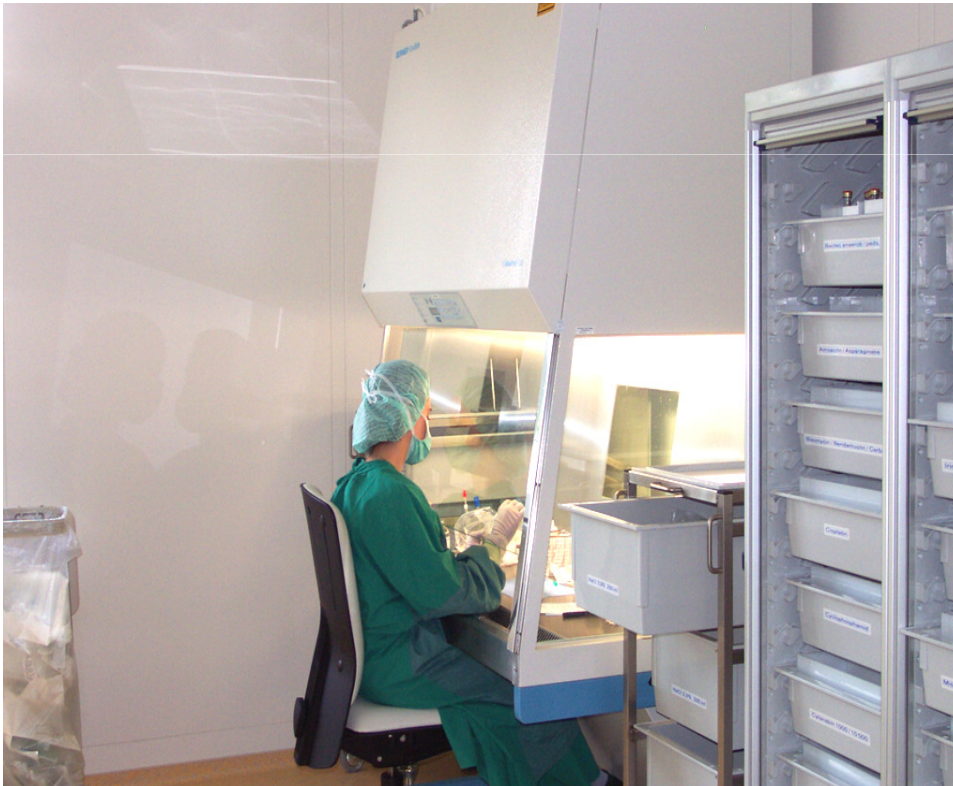


# **Aseptic preparations including TPN for a limited number of patients**



**Group E**

# **Intelligent Pharmaceutical Solution (InPhaSol)**

- **Mission**  
High quality ready to use parenterals and non-sterile products
- **Strategy**  
Centralized preparation in controlled environment and in time delivery for hospital patients
- **Product lines**
  - Batch preparation 250 / y (batch size:10-800)
  - TPN 12.000 / y
  - Cytotoxics 30.000 / y
  - Other individual preparations 10.000 / y

# Quality system used

- PICS/S-PE010
- National GMP Guidelines for hospital pharmacies
- General quality management system for the pharmacy department (e.g. ISO 9001)
- Internal and external audits

# **Business plan**

## **Make it or buy it ?**

### **1. Cost calculation to make it:**

- Facility (price/m<sup>2</sup> including ventilation, electricity, water.... )
- Equipment
- Personnel (salaries)
- Material
- Validation and quality control

### **2. Cost calculation to buy it**

- Risk (quality, continuity of supply)

**Chief Pharmacist**

**Aseptic preparation department**

**Batch Pharmacist**

**TPN Pharmacist**

**Individual Preparation Pharmacist**

**Cytotoxic Pharmacist**

**Quality control Pharmacist**

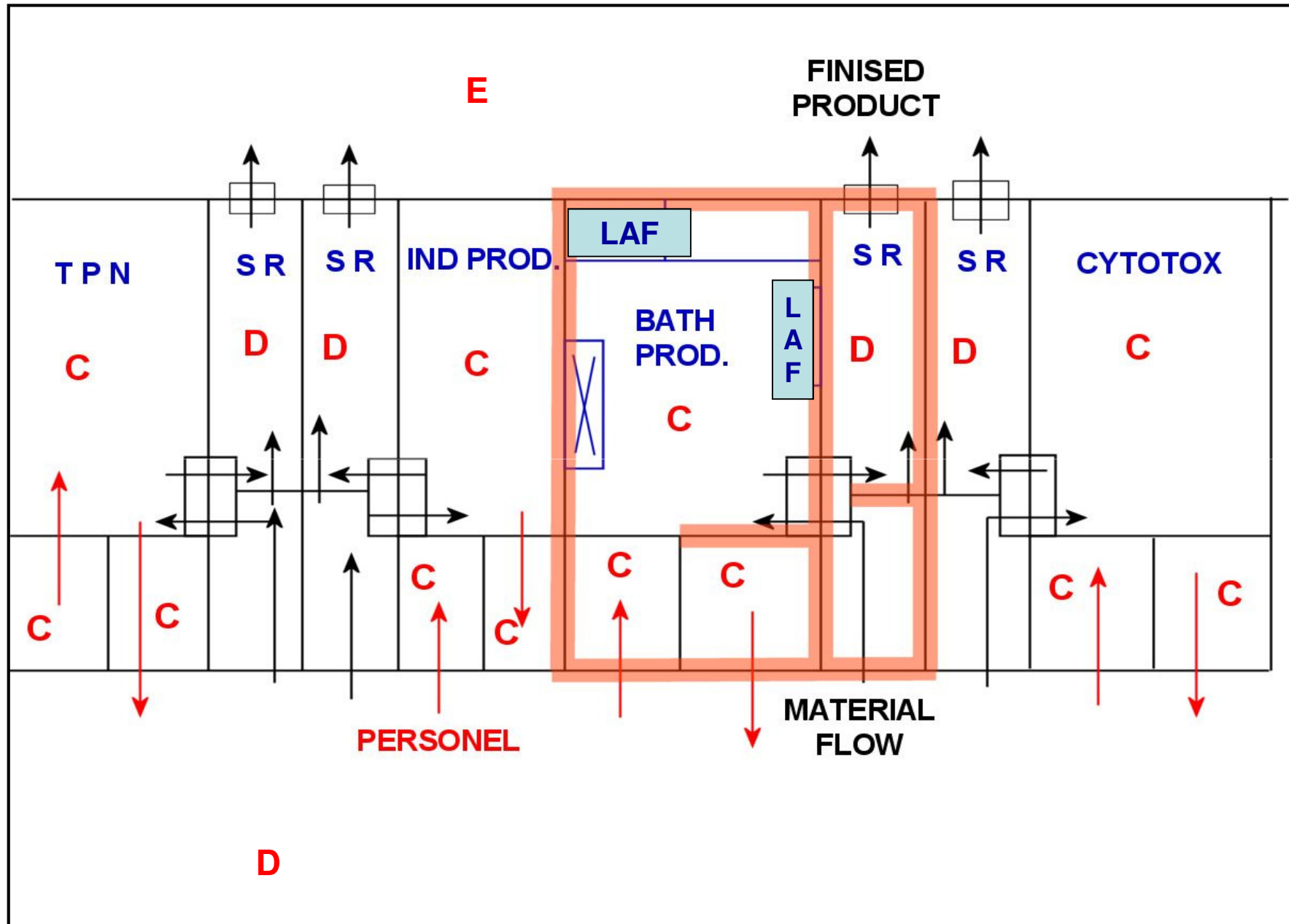
Deputy Pharmacist

Deputy Pharmacist

**Technician Pool**  
Qualified for all tasks

# Qualification and Responsibility

- **Chief pharmacist:** quality of products, development of new products, business plan
- **Pharmacists:** process, products and protocols, checking prescriptions
- **Senior technician:** managing material and personnel, environmental monitoring
- **Technicians:** preparation, cleaning of LAF
- **Quality management pharmacist:** quality control, training, clothing, hygiene



# Validation and training

- Aseptic preparation procedure
  - Hygiene, clothing
  - Cleaning validation
- 
- Media fills as validation process and personnel
  - Qualification: 30 samples
  - Requalification: twice a year

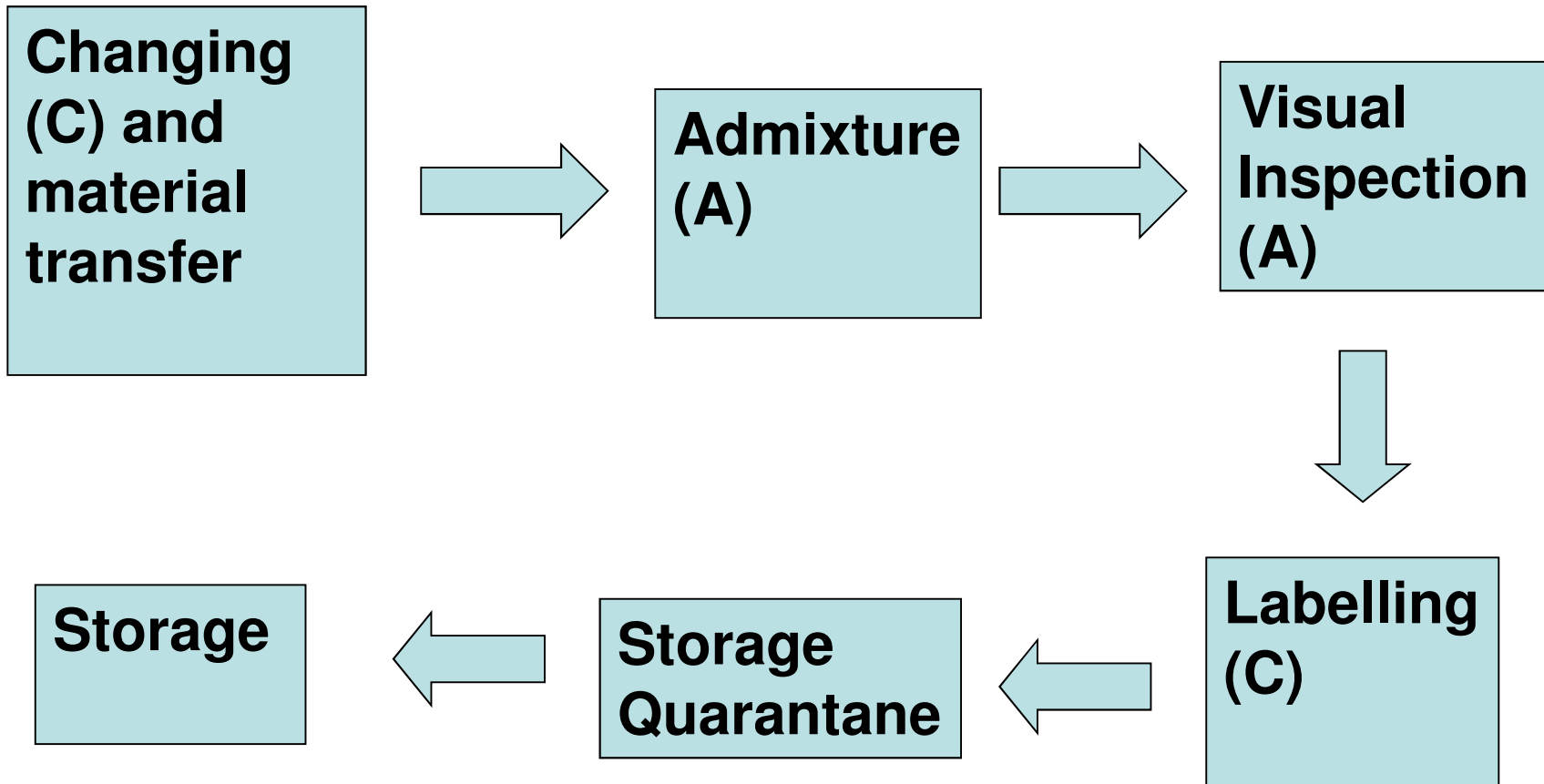




# Documentation

- Training of staff
- SOPs (general and product specific)
- Product dossier
- Production protocol (including sample label)
- Quality control protocol, Release protocol
- Deviation documentation
- Product recall documentation
- Environmental monitoring documentation
- Cleaning documentation
- Trend reporting of complaints
- Internal audit protocols

# Production Process



# **Product: Epidural analgesia solution**

- **Product Formula**

Volume 200 ml

Levobupivacaine 1.25 mg/ml

Morphin 0.02 mg/ml

Clonidine 0.375 microg/ml

- **Batch production: 80**

- **Proposed Changes**

- bupivacain instead of levobupivacain

# Product and material

- Chirocain® bags  
levobupivacain 1.25 mg/ml, 200 ml – 80 bags
- Catapresan® Clonidin 0.15 mg/ml, 1ml 40 ampouls
- Morphin 20 mg/ml, 1 ml – 16 ampouls
- 2 x 1 ml syringes, 2 x 20 ml syringes
- Sterile needles 20 G
- 2 x 0.2 micrometer filter device
- 2 empty sterilized vials (20ml, 100 ml)
- Sterile wipes, Sterilized ethanol 70%
- labels

# **LABEL**

## **EPIDURAL ANALGETIC SOLUTION**

**FOR EPIDURAL USE ONLY !**

**200 ml volume contain:**

Levobupivacaine	1.25 mg / ml
Morphin	0.02 mg / ml
Clonidine	0.375 microg / ml

Store at room temperature!

Use only clear solution!

**Batch No: 092010123**

**Expiration date: 30.11.2010**

**InPhaSol, The Hague, Zeestraat, Netherland**

# Working procedure

- Transfer materials to preparation room
- Transfer to the laminar air flow (desinfection, peeling)
- Checking and counting ampoules, bags, labels
- Pooling and filtering morphin and clonidine into to separate sterile vials
- Checking and counting empty ampoules
- Desinfection of the bag stopper and insert the needle
- Withdraw (technician 1) and add (technician 2) 0.2 ml of morphine solution
- Withdraw (technician 1) and add (technician 2) 0.5 ml of clonidine solution
- Mixing the bag
- Labelling, packaging (heat sealer) and labelling (secondary package)

# Quality controls

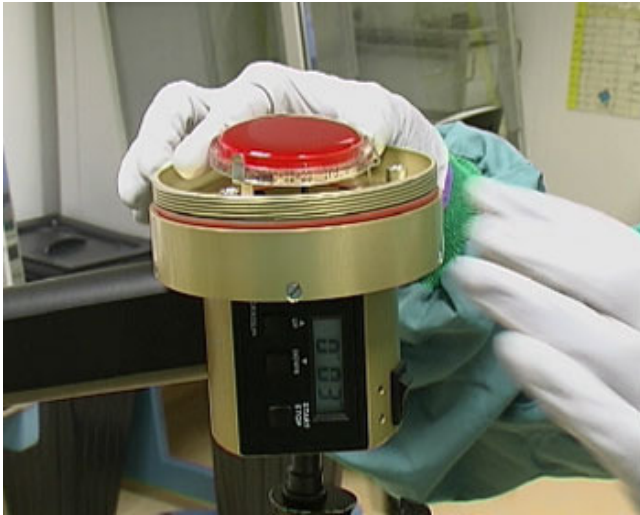
## **1. Inprocess control:**

- Double checking
- Sedimentation plates and fingerprints

## **2. Control of final product**

- Randomized sampling 3 bags for sterility test
- Visual checking

# Environmental Monitoring and validation of compounding area



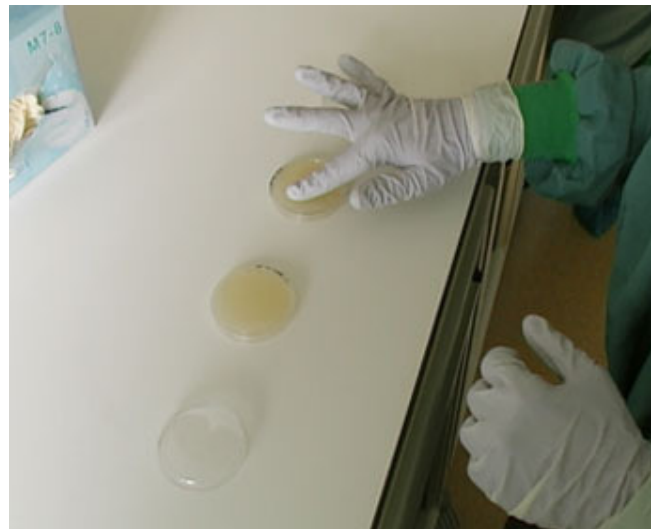
Active air sampling



Sedimentation plate



Contact plates



Finger prints



# Risk assessment

	Low	medium	high
Severity			<b>X</b> , <b>X</b>
Occurrence	<b>X</b> , <b>X</b>		
Likelihood of detection	<b>X</b>	<b>X</b>	

**Risk 1** = two times high dose,  $5 \times 1 \times 1 = 5$

**Risk 2** = microbiological contamination,  $5 \times 1 \times 3 = 15$

# Product validation

- Test batch and analysis of concentrations by HPLC (optional external lab and contract)
- Measurement of overfill of Chirocain® bags
- Accuracy of syringes used
- Test batch and 100% sterility testing
- CE marked medical devices
- In process control of medicinal products
  - Visual inspection
  - Expiry date

# Stability

- Stability 2 months at RT
- Wulf H, Gleim M, Mignat C. The stability of mixtures of morphine hydrochloride, bupivacaine hydrochloride, and clonidine hydrochloride in portable pump reservoirs for the management of chronic pain syndromes. *J Pain Symp Manag* 1994:308-11.

Retrieved from Trissel online



**E GROUP: THANK YOU FOR YOUR ATTENTION AND WE ARE LOOKING FORWARD TO THE AWARD!**