

BACKGROUND AND OBJECTIVES

❖ Hospital pharmacy in Toulouse (Logipharma) : Logistics platform, located remotely from healthcare services.

2 types of supply chains :

- stock products (→)
- off-stock products (not stored in the pharmacy) (---→)



❖ New hemostatic specialty Tisseel® (fibrin sealant) replaces Tissucol®. According to the SPC (Summary of Product Characteristics), Tisseel® must meet special storage conditions.



Tissucol®

- Stored in the refrigerator (2 to 8°C)
- Current supply chain : stock product
- Current delivery : refrigerated (using usual coolers ensuring temperature between 2 and 8°C)



Tisseel®

- Frozen ≤ -20°C
- Without any possible temperature excursion
- Needed Frozen delivery

Require the establishment of a secure frozen circuit in our pharmacy

→ Tisseel® supply chain : Stock or Off-stock product ?

→ To determine the implementation modalities of a frozen logistics circuit from receipt to delivery of drugs to the healthcare service

→ To estimate the needs and necessary costs for the establishment of such a circuit

MATERIALS AND METHODS

Retrospective analysis : from January 2015 to July 2015
Evaluation of Storage and transportation needs

❖ Estimation of Tisseel® stock from Tissucol® data of three dosages (average stock)

→ Evaluate our storage volume in a freezer

❖ Assess the number and capacity of coolers necessary for delivery to healthcare services

→ Consumptions extraction from warehouse management system Copilote®

→ Determine the number of consumer services, and the average number of shipment

RESULTS

❖ 1st Hypothesis : stock

TISSUCOL® KIT 5ML, 2ML, 1ML			TISSEEL® 10ML, 4ML, 2ML		
Maximal stock level	calculated on ADC	80	Maximal storage capacity (liters)	calculated on ADC	67 L
	observed	81		observed	68 L

ADC = Average daily Consumption (1 Tisseel package = 0,836 L)

TISSUCOL® KIT 5ML, 2ML, 1ML	
Number of consumer services	20
Average consumption / week	19
Average number of shipment / week	17
Maximum number of Tissucol® per shipment	4
TISSEEL® 10ML, 4ML, 2ML	
Maximum volume/shipment	3,3 L

▪ Volume required for storage of 3 dosages of Tisseel® : estimated at 68 liters. (and 14 L for storage of 2 others frozen products, currently stored in a smaller freezer)

▪ Every week, about 17 coolers with a capacity of 3.5 liters will be needed to transport Tisseel® from the platform to consumer services.

- Total equipment requirements :
 - Freezer with a capacity of at least 82 L
 - 17 coolers

▪ Issue :
Our current coolers and those offered by the laboratory do not guarantee a temperature below -20°C during our delivery time (3 hours maximum)
→ not suitable for our logistics circuit

▪ Evaluation of new coolers purchase :
Coolers with eutectic plates guaranteeing transport at -20 ° C for 3 hours.
→ represents an additional total cost of €4488

❖ 2nd Hypothesis : off-stock

- Laboratory will deliver Tisseel® in container with dry ice (Shelf life in the shipping box with dry ice = 72hours)
- Receipt and check of the quantities then delivery (in the shipping box) to the healthcare services
- Total equipment requirements :
10 pairs of cryogenic gloves (used in the healthcare services to handle dry ice) → represents a €1979 total extra cost

CONCLUSIONS

Tisseel® cannot withstand temperature excursions, which represents a significant additional cost for our hospital, if it is stored in our pharmacy. To secure the circuit of frozen products, we have decided to focus on off-stock circuit that represents a smaller cost. Each service will place an order with the supplier. Then we will carry out the delivery of medicines, using the delivery box with dry ice of the laboratory.