

Analyzing Economic Effect on mRNA Vaccine Inventory Management with Redistribution Policy

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Supplementary material

This file includes :

1. Supplementary Table S1
2. Supplementary Table S2

(h^+, h^-)	(7, 5)								
Policies	DES-NLT				DES-LT				
Costs	Overage	Underage	Reorder	Total	Overage	Underage	Reorder	Transshipment	Total
30 Days	2,055	21,860	39,710	485	1,365	21,920	38,940	370	-500

Supplementary Table S 1: LT policy being superior than NLT policy due to overage costs.

(h^+, h^-)	(7, 5)								
Policies	DES-NLT				DES-LT				
Costs	Overage	Underage	Reorder	Total	Overage	Underage	Reorder	Transshipment	Total
30 Days	1,605	21,620	39,820	55	1,665	22,480	38,940	320	1,345

Supplementary Table S 2: NLT policy being superior than LT policy due to underage costs.

In Supplementary Table S 1, the total cost of the NLT policy was lower than that of the LT policy. This outcome is attributed to the LT policy generating higher underage costs, suggesting that demand exceeded the hospital's capacity. In contrast, in the Supplementary Table S 2 where the LT policy demonstrated superiority, the NLT policy resulted in higher overage costs, indicating a surplus of doses due to lower-than-expected demand. Additionally, while transshipment costs increased in this scenario compared to Supplementary Table S 1, they also generated more profit, underscoring the effectiveness of the LT policy in these circumstances.