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LEVEL	PGE 2A	MODE	ON-OFF LINE
EXAM TYPE	THEORETICAL PART		
TITLE	LOGISTICS MANAGEMENT PROJECT		

GENERAL TOPIC: LOGISTICS PROJECT MANAGEMENT IN HOSPITALS DURING THE COVID-19 CRISIS

The logistics project management in hospitals has some specifics related to the nature of services and human-being involvement. With the COVID-19 crisis, this kind of project is gaining a strategic place in public management for all the world governments. Nowadays, we are all witnessing the strategic decisions related to logistics projects in hospitals to ensure the continuity of treatment to face the pandemic (purchasing, sterilization, stock management, intra, and inter-sites transportation, etc.).

“Sainte Merry” is the name of a small hospital center situated in Paris. The set of the following tables are the records in the information system of the hospital.

- Table 1: Services list of the Sainte Merry hospital center,
- Table 2: Staff list of the Sainte Merry hospital center,
- Table 3: Process of admission and discharge of COVID-19 patients in the Sainte Merry hospital center
- Table 4: Historical supply of the internal pharmacy for 2 months in the Sainte Merry hospital,
- Table 5. Patient records for the invoice (for one patient)

Hospital center Sainte Merry - Paris/France
Services
Nursing Service
Physicians (Doctors) Service
canteen and food Service
Maintenance Service
Linen and uniforms service
Pharmacy service
Transportation service

Table 1. Services list of the Sainte Merry hospital center

Hospital center Sainte Merry - Paris/France		
Number of affected staff	Position	Daily salary load
2	Ambulance driver	€ 120.00
1	Chef in canteen and Food manager	€ 180.00
1	Internal pharmacist and manager	€ 187.00
1	Laundry agent and manager	€ 193.00
1	Maintenance agent and manager	€ 188.00
2	Medication car driver	€ 102.00
3	Stretcher bearer for patients	€ 120.00
1	Transportation manager	€ 195.00
2	Nurse assistant for equipments	€ 205.00
3	Nurse assistant in rooms	€ 210.00
2	Nurse assistant internal patients	€ 209.00
1	Nursing manager	€ 280.00
2	Pulmonary Disease doctor	€ 450.00
3	Radiology doctor	€ 502.00
2	Cardiology doctor and head of service	€ 490.00
3	Internal Medicine doctor	€ 473.00

Table 2. Staff List of the Sainte Merry hospital center

Hospital center Sainte Merry - Paris/France				
Admission and discharge process of the COVID-19 patients		Resources involved in tasks	Additional daily cost	Duration (hours)
Task 1	Preparation of the place in the unit			
	Task 1.1 Notifying the unit to book a room	Nursing manager	€ 34.00	1
	Task 1.2 Checking the availability all the rooms	Nurse assistant in rooms	€ 18.00	1
	Task 1.3 checking the ventilation in the rooms	Nurse assistant for equipments	€ 32.00	1
	Task 1.4 Intervention of the maintenance	maintenance service agent and manager	€ 76.00	5
Task 2	Transportation of the patient home --> hospital			
	Task 2.1 Notifying the drivers to transport the patient	Transportation manager	€ 54.00	1
	Task 2.2 Transporting the patient by ambulance	Ambulance driver	€ 87.00	2
	Task 2.3 Transporting the patient by stretcher	Stretcher bearer for patients	€ 43.00	1
Task 3	Arrival of the patient in the room			
	Task 3.1 Checking the patient record in the room	Nurse assistant internal patients	€ 65.00	1
	Task 3.2 Clothing the patient with a hospital gown	Laundry agent and manager	€ 32.00	1
	Task 3.3 Performing the initial examination	Nurse assistant internal patients	€ 54.00	1
	Task 3.4 Recording information about the patient	Chef in canteen and Food manager	€ 23.00	1
Task 4	Medical examination			
	Task 4.1 Performing the initial medical examination	Internal Medicine doctor	€ 76.00	3
	Task 4.2 Performing a cardiological examination	Cardiology doctor and head of service	€ 43.00	4
	Task 4.3 Performing a chest x-ray for the patient	Radiology doctor	€ 54.00	4
	Task 4.4 Carrying out the instructions	Pulmonary Disease doctor	€ 23.00	2
	Task 4.5 Realizing the treatment schedule	Internal Medicine doctor	€ 23.00	4
	Task 4.6 Ordering medicaments to the pharmacy	Nursing manager	€ 10.00	2
	Task 4.7 Recording the order of medicaments	Internal pharmacist and manager	€ 109.00	2
	Task 4.8 Delivery of the medicaments	Medication car driver	€ 32.00	3
Task 5	Transportation of the patient hospital --> home			
	Task 5.1 Transporting the patient by stretcher	Stretcher bearer for patients	€ 43.00	2
	Task 5.2 Transporting the patient by ambulance	Ambulance driver	€ 87.00	2

Table 3. Process of admission and discharge of COVID-19 patients in the Sainte Merry hospital center

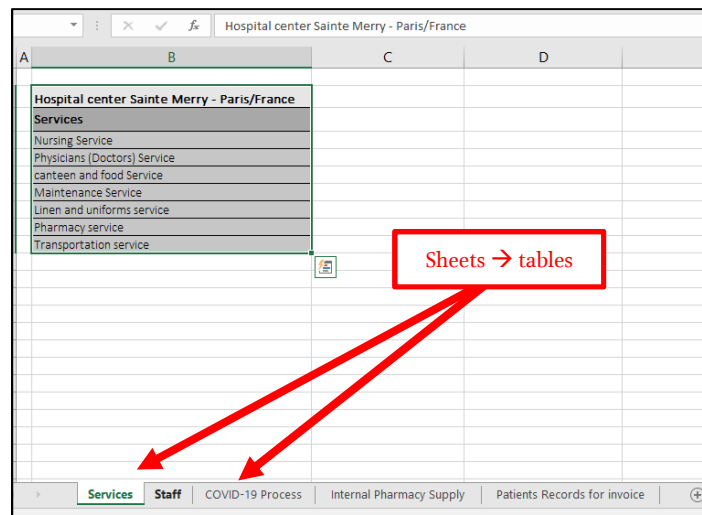
Hospital center Sainte Merry - Paris/France					
Pharmaceutical supplier	Date of order	Medecine name	Number of ordered medicine units	Delay in supplying (hours)	defective units
Merck	1-Mar-20	Hydroxycytidine	10	0	0
Pfizer	2-Mar-20	Acetaminophen	0	0	0
Perrigo	3-Mar-20	plaquenil	12	14	0
Bayer	4-Mar-20	Solumedrol	10	2	1
Merck	5-Mar-20	Dexaméthasone	12	0	0
Merck	6-Mar-20	Dexaméthasone	10	0	0
Perrigo	7-Mar-20	plaquenil	10	12	0
Merck	8-Mar-20	Hydroxycytidine	12	0	0
Perrigo	9-Mar-20	Solumedrol	12	1	2
Bayer	10-Mar-20	Hydroxycytidine	4	0	0
Perrigo	11-Mar-20	plaquenil	12	10	0
Bayer	12-Mar-20	Acetaminophen	1	0	0
Perrigo	13-Mar-20	plaquenil	10	12	0
Bayer	14-Mar-20	Acetaminophen	0	0	0
Perrigo	15-Mar-20	Acetaminophen	2	0	1
Merck	16-Mar-20	Dexaméthasone	13	0	0
Merck	17-Mar-20	Hydroxycytidine	10	0	0
Merck	18-Mar-20	Hydroxycytidine	10	0	0
Pfizer	19-Mar-20	Hydroxycytidine	14	0	0
Pfizer	20-Mar-20	Acetaminophen	1	0	0
Merck	21-Mar-20	Hydroxycytidine	10	0	0
Pfizer	22-Mar-20	Hydroxycytidine	10	0	0
Pfizer	23-Mar-20	Hydroxycytidine	14	0	0
Merck	24-Mar-20	Dexaméthasone	12	2	0
Merck	25-Mar-20	Hydroxycytidine	4	0	0
Perrigo	26-Mar-20	plaquenil	0	0	0
Merck	27-Mar-20	Dexaméthasone	18	0	0
Bayer	28-Mar-20	plaquenil	10	0	5
Bayer	29-Mar-20	Acetaminophen	3	0	0
Merck	30-Mar-20	Solumedrol	22	2	2
Pfizer	31-Mar-20	Hydroxycytidine	10	0	0
Perrigo	1-Apr-20	Dexaméthasone	18	2	0
Perrigo	2-Apr-20	Solumedrol	10	10	3
Pfizer	3-Apr-20	Hydroxycytidine	14	4	0
Perrigo	4-Apr-20	Dexaméthasone	20	0	0
Bayer	5-Apr-20	Hydroxycytidine	12	4	1
Perrigo	6-Apr-20	Acetaminophen	5	0	0
Pfizer	7-Apr-20	Hydroxycytidine	10	0	0
Perrigo	8-Apr-20	Dexaméthasone	20	0	0
Pfizer	9-Apr-20	Hydroxycytidine	10	8	0
Bayer	10-Apr-20	plaquenil	12	0	0
Perrigo	11-Apr-20	Dexaméthasone	20	0	0
Pfizer	12-Apr-20	Hydroxycytidine	14	24	4
Perrigo	13-Apr-20	plaquenil	0	0	0
Perrigo	14-Apr-20	plaquenil	10	10	2
Perrigo	15-Apr-20	Acetaminophen	5	2	1
Perrigo	16-Apr-20	Dexaméthasone	2	4	2
Perrigo	17-Apr-20	Dexaméthasone	0	0	0
Bayer	18-Apr-20	plaquenil	10	0	0
Pfizer	19-Apr-20	Hydroxycytidine	10	24	2
Pfizer	20-Apr-20	Solumedrol	22	0	2
Pfizer	21-Apr-20	plaquenil	43	12	1
Perrigo	22-Apr-20	Acetaminophen	7	3	1
Bayer	23-Apr-20	Hydroxycytidine	14	4	1
Perrigo	24-Apr-20	Dexaméthasone	5	4	2
Pfizer	25-Apr-20	Hydroxycytidine	14	8	1
Pfizer	26-Apr-20	Acetaminophen	8	12	2
Bayer	27-Apr-20	plaquenil	22	0	0
Perrigo	28-Apr-20	Dexaméthasone	4	4	0
Pfizer	29-Apr-20	Solumedrol	11	1	1
Pfizer	30-Apr-20	Hydroxycytidine	10	24	2

Table 4. Historical supply of the internal pharmacy for 2 months in the Sainte Merry hospital

Hospital center Sainte Merry - Paris/France	
Patient Records for invoice (for one patient)	
Daily charges	Amount (€/day)
Treatment and medicines costs	€ 120.00
Hospitality expenses (for 1 bed/room)	€ 95.00
Cleaning and cleanliness costs	€ 78.00
Meal fees	€ 45.00
Medical services fees	€ 310.00
Nursing fees	€ 230.00

Table 5. Patient records for the invoice (for one patient)

Please refer to the Excel file 'Appendix_Exam_Written_Logistics_Project_Management_11-2020.xlsx' to find the tables in different sheets:



Suppose the following additional information:

- The legal working day in France is **8** hours,
- The total number of COVID-19 patients is **10**,
- Each COVID-19 patient has to be taken in charge as soon as possible,
- The starting day of the protocol application is **December 1, 2020**,
- All the **10** COVID-19 are detected positive on **December 1, 2020**, and have to be taken in charge as soon as possible.
- The number of available rooms of couple beds on **December 1, 2020**, is **100**,
- The unit of duration in the planning software is based on **½** day,
- All the patients will have the same duration of hospitalization and the same treatment protocol.

Exercise 1 – Topic: Technical Flow Chart (6 points)

- Question 1.1. Propose the OBS,
- Question 1.2. Propose the WBS,
- Question 1.3. Propose the WP.

Exercise 2 – Topic: Planning (5 points)

- Question 2.1. Propose the PERT chart,
- Question 2.2. Propose the CPM chart,
- Question 2.3. Propose the Gantt chart,
- Question 2.4. What is the total cost of the process?
- Question 2.5. What is the minimum number of resources required to apply the process?

Exercise 3 – Topic: Inventory/Warehouse Design impact (4 points)

Because of the increase and continuity of the COVID-19 crisis in the second wave, the Sainte Merry hospital manager must stop the partnership with 2 suppliers of medicines.

- Question 3.1. Provide the decision of the manager with analysis and argumentation.

Exercise 4 – Topic: Customer Management (2 points)

Provide the following Key Performance Indicators of the Logistics Customer Response (LCR)

- Question 4.1. Customer Response Productivity (CRP),
- Question 4.2. Order Processing Time (OPT).

Exercise 5 – Topic: Supplier Management (3 points)

Provide the following Key Performance Indicators of the Supplier Performance Metrics (SPM)

- Question 5.1. Number of SKU Managed (N-SKU-M),
- Question 5.2. Perfect Purchase Order Percentage (PPOP),
- Question 5.3. Supplier-Item Classes (SIC) matrix.

End
Good luck