Appendix 3

Numerical (deterministic) input data of the experimental design

Table 1 Search and rescue levels

SAR level	Number of non-ambulatory victims (from 5 to 26 min)	Number of non-ambulatory victims (after 26 min)
Low	2 every 3 min	3 every 3 min
Medium	4 every 3 min	6 every 3 min
high	6 every 3 min	9 every 3 min

Table 2 Quality and quantity of pre-hospital resources

	First wave (3-15 min)		**Second wave (16-22 min)**	
Level	MMT	Ambulances	MMT	Ambulances
Normal	3	22	7	16
Low	3	16	7	22
Medium	7	16	3	22
High	7	22	3	16

Table 3 Operational time intervals

Time interval	Definition	Determination	Value (min)
Dispatch	Interval between the arrival of a call and the assignment of an EMS vehicle.	Empirical	3
Response	Interval between the departure from the EMS station and the arrival at the incident site.	Calculated	$D^a \times S^b / 60$
Triage urgent patients	Triage of T1, T2 and T3 patients.	Empirical	0.5
Triage non-urgent patients	Triage of T3 patients.	Empirical	0.08
Loading CCP	Interval to load a patient into an ambulance at CCP.	Empirical	2
Loading FMP	Interval to load a patient into an ambulance at FMP.	Empirical	3
Unloading	Interval to unload a patient from an ambulance.	Empirical	2
Transportation	Interval between the end of loading of a patient in an ambulance at the CCP or FMP and the arrival in a HCF.	Calculated	$D^a \times S^b / 60$
In-hospital (drop-off)	Interval between the arrival and departure of an ambulance at a HCF.	Empirical	14

(a): D is the shortest path between two location points and is calculated by using the googlemaps APIs. (b): S is the average speed of an ambulance or a MMT vehicle and is in an urban area respectively 20 km/hr and 35 km/hr, on a regional road respectively 45 km/hr and 70 km/hr and on a highway respectively 90 km/hr and 100 km/hr.

Table 4 Level of medical supervision during transport

	Low	**Medium**	**Normal**	**High**
TI	**EMT**	**EP or PIT**	**EP or PIT**	**EP and PIT**
T2	**EMT**	**EMT**	**PIT**	**PIT**
T3	**EMT**	**EMT**	**EMT**	**EMT**

EMT: Emergency Medical technician. PIT: emergency nurse. EP: Emergency Physician

Table 5 HCF treatment capacity at any given time

HCF	Distance	Number of adult victims/hour			Number of paediatric victims/hour		
	km	T1-T4	T2	T3	T1-T4	T2	T3
1	6.11	1	2	4	0	1	4
2	8.47	1	2	4	0	0	0
3	11.32	2	6	16	0	1	4
4	11.37	4	12	34	2	3	5
5	14.87	0	0	0	2	3	10
6	15.28	1	4	5	0	0	0
7	15.65	4	4	12	2	3	5
8	17.92	2	8	12	0	1	3
9	18.49	4	4	12	1	2	5
10	19.53	2	4	9	0	1	4
11	20.10	2	4	9	0	0	0
12	20.38	1	2	5	0	0	3
13	23.06	2	4	9	0	0	0
14	23.92	6	17	34	2	3	5
15	24.00	1	2	5	0	0	3
16	24.41	0	2	4	0	0	3
17	26.01	1	3	5	0	0	3
18	26.89	3	9	23	2	3	5
19	33.12	1	3	5	0	1	4
20	37.52	2	3	4	0	2	4

Table 6. HCF treatment capacity as indicated in its disaster plan

HCF	Number of adult victims/hour									Number of paediatric victims/hour								
	Low			Medium			High			Low			Medium			High		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
1	1	1	3	1	2	5	2	3	6	0	0	2	0	0	3	0	1	4
2	1	2	5	2	4	9	3	5	13	0	1	2	0	1	4	0	2	6
3	1	2	5	2	4	9	3	5	13	0	0	0	0	0	0	0	0	0
4	1	4	6	2	8	12	3	10	18	0	1	1	0	1	3	0	2	5
5	1	2	5	2	4	9	3	5	15	0	0	0	0	0	0	0	0	0
6	0	1	2	1	2	4	2	4	8	0	0	0	0	0	0	0	0	0
7	1	2	3	1	4	5	2	6	10	0	0	0	0	0	0	0	0	0
8	2	5	12	3	9	23	5	13	34	1	2	3	2	3	5	3	4	8
9	2	2	6	4	4	12	6	6	18	0	1	3	1	2	5	1	3	8
10	0	0	0	0	0	0	0	0	0	1	2	5	2	3	10	3	5	15
11	0	1	3	1	2	5	2	4	8	0	0	2	0	0	3	0	1	5
12	1	3	8	2	6	16	3	9	24	0	1	2	0	1	4	0	2	6
13	2	2	6	4	4	12	6	6	18	1	2	3	2	3	5	3	4	7
14	2	6	17	4	12	34	6	18	50	1	2	3	2	3	5	3	4	7
15	0	2	3	1	3	5	2	4	8	0	0	2	0	0	3	0	1	4
16	3	8	17	6	17	34	9	25	50	1	2	3	2	3	5	3	4	7
17	0	2	3	1	3	5	2	4	8	0	1	2	0	1	4	1	4	7
18	1	2	2	2	3	4	3	4	6	0	1	2	0	2	4	0	4	7
19	0	1	2	1	2	4	2	3	6	0	0	3	0	1	4	0	2	6
20	0	1	2	1	2	4	1	3	6	0	0	2	0	0	3	0	1	4