Università di Roma

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MASTER CBRNe

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Is Rome ready to react to CBRNe attacks?

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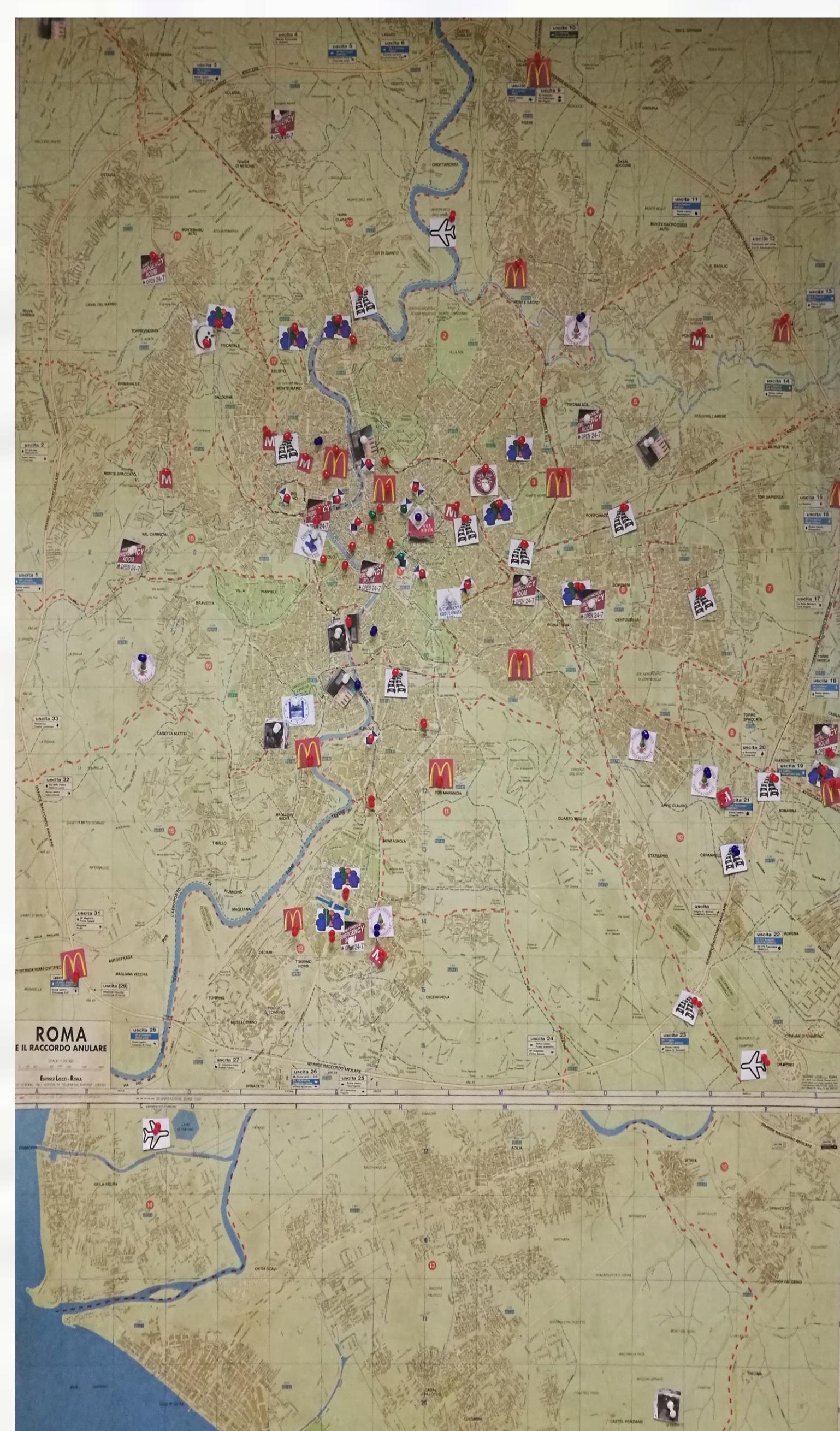
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BACKGROUND:

Rome hosts thousands of sensible targets. Healthcare reaction has been guaranteed by 5 advanced Emergency Departments (EDs) and 10 basic ones.

Everyday Rome hosts 6 millions of people/die, ± 2 million in particular occasions.

Regarding National Stockpile Antidotes (SNA), Rome hosts 5 warehouses. In case of events, stockpiles are activated with a long-time call; then they are charged in their delivering trucks.

Furthermore, at present time, no shared plan between all city functional structures has been developed and published, resulting in response fragmentation and ultimate inefficiency.

Rome: map of most interesting targets and Civil Defense responders

METHODS

Study analyzes PEIMAF (State of emergency plans for massive influx of injures) of advanced EDs in Rome and their adequacy in a possible CBRNe attack.

Hypothesis of C/N attack on Saint Peter's Square during Angelus on Wednesday (at 12.00 AM) or E attack in Trastevere on Saturday (at 9.00 PM).

Analysis of activation of SNA and travel times between SNA warehouse and EDs.

Comparison with French EDs during Paris attacks.

FROM TO (II level EDs)	SNA R 12 (Via Portuense 332)	SNA S 25 (Via dei Carri Armati 13)	SNA S 30 (Largo Acquaroni 24, Civitavecchia)	SNA S 31 (Via Luigi Pierantoni 5)	SNA S 32 (Piazzale della Marina 4)
P.U. Umberto I (Viale del Policlinico 155)	7 km 12 minutes	7,2 km 11 minutes	76,5 km 115 minutes	7 km 12 minutes	6,1 km 10 minutes
P.U. A. Gemelli (Largo Agostino Gemelli 8)	9 km 15 minutes	15,6 km 25 minutes	71,3 km 120 minutes	11 km 19 minutes	7,8 km 12 minutes
O.P. Bambino Gesù (Piazza di Sant'Onofrio, 4)	4 km 7 minutes	13,5 km 22 minutes	72,3 km 120 minutes	5 km 8 minutes	4,4 km 7 minutes
A.O. San Giovanni-Addolorata (Via dell'Amba Aradam 9)	5 km 8 minutes	6 km 10 minutes	77 km 128 minutes	4 km 7 minutes	5 km 8 minutes
A. O. San Camillo (Via Portuense 332)	0 km 0 minutes	16,2 km 25 minutes	71,3 km 107 minutes	2 km 3 minutes	6,5 km 11 minutes

Distance and travel time (± 2 minutes) between EDs and SNA stockpiles. Speed: 40 Km/h
P.U.: Teaching Hospital; A.O.: Hospital; O.P.: Pediatric Hospital;

FROM TO (I level EDs)	SNA R 12 (Via Portuense 332)	SNA S 25 (Via dei Carri Armati 13)	SNA S 30 (Largo Acquaroni 24, Civitavecchia)	SNA S 31 (Via Luigi Pierantoni 5)	SNA S 32 (Piazzale della Marina 4)
Aurelia Hospital (Via Aurelia 860)	10,3 km 15 minutes	20 km 33 minutes	65 km 108 minutes	24 km 40 minutes	9 km 15 minutes
P.O. Santo Spirito (Lungotevere in Saxia 1)	4,3 km 7 minutes	9 km 15 minutes	74,3 km 126 minutes	5 km 8 minutes	2,5 km 4 minutes
P.U. Tor Vergata (Viale Oxford 81)	17,4 km 29 minutes	12 km 20 minutes	89 km 148 minutes	16 km 27 minutes	16 km 27 minutes
P.U. Casilino (Via Casilina 1040)	13,5 km 22,5 minutes	8 km 13,3 minutes	8,5 km 14 minutes	12 km 20 minutes	12 km 20 minutes
P.O. Sandro Pertini (Via dei monti tiburtini 385)	11 km 18 minutes	3 km 5 minutes	82,5 km 137 minutes	10,5 km 17 minutes	7 km 11 minutes
P.U. Sant'Andrea (via di Grottarossa 1035)	16 km 26 minutes	17 km 28 minutes	74 km 126 minutes	16 km 27 minutes	10 km 17 minutes
P.O. M. G. Vannini (Via di acqua bulicante 4)	9,5 km 17 minutes	6 km 10 minutes	81 km 130 minutes	8 km 14 minutes	8 km 14 minutes
P.O. Sant'Eugenio (Piazzale Umanesimo 10)	7 km 12 minutes	15 km 24 minutes	75 km 127 minutes	7 km 12 minutes	12 km 20 minutes
P.O. San Filippo Neri (Via Giovan Martinotti 20)	11 km 18 minutes	15,5 km 25 minutes	72 km 123 minutes	12 km 20 minutes	8 km 14 minutes
P.O. San Giovanni Calibita FBF (Isola Tiberina)	4 km 7 minutes	6,7 km 11 minutes	75,5 km 130 minutes	4 km 7 minutes	4 km 7 minutes

FINDINGS:

EDs are chronically undermanned in ordinary conditions already, and would have issues in hosting a very large number of critical patients all at once.

Some hospitals do not inform their workers about PEIMAF or they do not consider CBRNe emergencies in their PEIMAF, and even if it has been considered, hardly any simulation/exercitation is ever performed.

Moreover, news of the CBRNe attack may not reach immediately the healthcare personal already at work in EDs; this is extremely problematic since they could be at major risk of contamination in case of CBRNe attacks.

Furthermore, without a standardize protocol active in the whole city, no cross-hospital organization can be performed.

Activation stockpile, loading, delivering:
1-3 hours

Source of information (Hospital)	→	Prefect (or other Civil Administrations)	→	DGPS-Ministry of Health	→	Maugeri Fondation SNA stockpiles

3 min- 2 hours

10 min- 1 hours

10 min- 1 hours

How many victims?

France, 2016 (left); Italy, 2010 (right)

CONCLUSIONS

All data point towards the weakness and fragmentation of actual organizative system.

Time of activation and charging are crucial for first aid efficacy and efficiency; a smart call system can reduce the activation time of SNA. A better organization of SNA in major Rome hospitals can reduce delivering time and help save more lives.

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