End-User Driven Demo for CBRNe

Report on Ethical Issues of Prevention, Preparedness and Detection Phase

Deliverable No.: D81-2

Issue: 2.0

Date: 30/09/2014

Contract No. 313077

Dissemination Level:

PU	Public	X
PP	Project Private, restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Document Information and Approval status

Contract number:	313077	
Project acronym:	EDEN	
Project Co-ordinator:	BAE Systems	
Document Responsible Partner:	UPV/EHU	
Document Type:	Contractual Report	
Document number:	D81-2	
Document Title:	Report on Ethical Issues of the Response Phase	
Document ID:	EDEN-WP80-DEL-D81-2	
Classification:	Unclassified	
Contractual Date of Delivery:	30/09/2014	**Actual date of delivery** 30/09/2014
Filename:		
Status:	Released	
Approval status		
Document Manager	**Verification Authority:**	**Project approval**
UPV/EHU	**WP80 Leader**	**EMB**

Distribution List

Name	Company/Institution
	EDEN Consortium
	European Commission

Partners Involved in Document

No	Partner	Short name	Check if involved
1	BAE Systems	BAES	
2	EADS Astrium	AST	
3	FFI	FFI	
4	Tecnoalimenti	TCA	
5	SELEX ES	SES	
6	SAMU	SAMU	
7	Main School of Fire Service	SGSP	X
8	CSSC	CSSC	
9	AstriPolska	APL	
10	IstitutoAffariInternazionali	IAI	
11	CBRNE LTD	CBRNELTD	
12	UCL	UCL	
13	LDI	LDI2	
14	Fraunhofer	FhG EMI	
14	Fraunhofer	FhG INT	
14	Fraunhofer	FhG ICT	
15	VTT	VTT	
16	FRS	FRS	X
17	Indra	IND	
18	INERIS	INR	
19	SICPA	SIC	
20	MDA	MDA	X
21	PIAP	PIAP	
22	Hotzone	HZS	
23	ENEA	ENEA	
24	Nucletudes	NUC	
24	OMNIDATA S.A	OMN	
26	University of the Basque Country	UPV/EHU	X
27	University of Reading	UREAD	
28	Bruker UK	BRU	
29	LDIAMON	LDIAMON	
30	Microfluidic	MCG	
31	Robert Koch	RKI	
32	EU-VRI	EU-VRI	
33	Space Research Center	SRC	
34	AINIA	AINIA	
35	UCSC	UCSC	
36	CBRNE Centre	UMU	X
37	Public Health England	PHE	X

Contract No. 313077

CONTENTS

LIST OF ABBREVIATIONS

CBRN	Chemical Biological Radiological Nuclear
CBRNE	Chemical Biological Radiological Nuclear Explosive
EU	European Union
MS	Member State

1 EXECUTIVE SUMMARY

The response phase is the most difficult phase of the CBRNE security circle, as it is carried out while the emergency is still underway. The response phase is characterised by particularly critical activities, such as search and rescue, management of injured or dead people, support to the victims' relatives, decontamination and evacuation, emergency shelter and feeding, forensic investigations in case of a deliberate attack.

The objective of this report consists of exposing the ethical issues involved in the response phase of a CBRNE incident and/or major crisis situation. It corresponds to Task 81.2 of Work Package 81 of the EDEN project, devoted to the analysis of the ethical implications of the response phase, and constitutes Deliverable 81.2, entitled "Report on Ethical Issues of Response Phase" of the Eden project. It is the second of a series of reports on ethical issues involved in CBRNE major crisis management. It complements a previous report entitled "Report on Ethical Issues of Prevention, Preparedness and Detection Phase", already available. It will be followed by a third report dedicated to the ethics of the recovery phase, which will be available at the end of November 2014. It has been mainly elaborated by the Inter-University Chair in Law and the Human Genome team, composed by Carlos María Romeo Casabona and Iñigo de Miguel Beriain, with a significant contribution from EDEN partners from MDA.

The report contains 7 chapters. The first chapter was written by Chaim Rafalowski and corresponds to a resume of an article published by Andrew P. Rebera & Chaim Rafalowski published online at Science and Engineering Ethics, ISSN 1353-3452 on February 2014. It points out that in a CBRNE incident, an ethical approach based on consequentialism might be much more profitable than a deontological-based one, but also serves as an excellent overview of the different ethical issues that might arise in case of a CBRNE incident. The second chapter, written by Iñigo de Miguel Beriain and Carlos Romeo Casabona corresponds to an effort to identify the principles that should serve as *side-constraints* to this consequentialist approach, in an effort to draw the 'red lines' that should never be trespassed, no matter the consequences it could bring us.

6

The following chapters, also written by Iñigo de Miguel Beriain and Carlos Romeo Casabona face the ethical issues related to lay people, volunteers and health care workers and, in general, professionals in case of a CBRNE major crisis situation, with an special focus in the case of a pandemic situation. Issues such as the moral imperatives which should rule under these circumstances and the limits of the obligations that these different collectives should face in these scenarios are analysed there.

2   ON THE SPOT ETHICAL DECISION-MAKING IN CBRN RESPONSE[1]

Approaches to On the Spot Ethical Decision-Making for First Responders to Large-Scale Chemical Incidents

2.1 - Introduction

The threat from WMDs (weapons of mass destruction) and CBRN (chemical, biological, radiological, and nuclear) agents or materials is a well-recognised feature of the contemporary security landscape. The first chapter of this report concerns some of the practical ethical dilemmas that first responders could face in managing large-scale chemical incidents. Indeed, its aim is to examine *how the responder's decisions in CBRN incident should be approached*. What approaches, strategies, and professional heuristics should be exploited to arrive at decisions on courses of action? Some operational decisions can be supported by "Standard Operating Procedures" (SOPs). However SOPs may not suffice for ethical decisions, since SOPs may not suffice for complex ethical decisions in which competing needs, interests, and rights must be weighed.

Consequentialism is the view that the right- or wrongness of an action is always and everywhere a function of its consequences. The moral course of action is that which maximises good consequences. This approach provides a promising framework for conceptualising and approaching the practical ethical dilemmas facing responders. In extraordinary circumstances wherein a decision must be taken and must be taken immediately, a consequentialist decision-making procedure may be, practically speaking, the best option available.

To take seriously the conflicts of interest arising in the ethical dilemmas thrown up by responding to large-scale chemical incidents, the consequentialist approach must be modified, to incorporates fundamental rights and ethical values as "side-constraints".

---

[1] This chapter was written by Chaim Rafalowski and constitues a resume of an article published by Andrew P. Rebera & Chaim Rafalowski published online at Science and Engineering Ethics, ISSN 1353-3452 on Feb 2014

2.2 – A CBRN Practitioner's perspective

This chapter presents a selection of practical dilemmas that might be expected to arise in a large-scale chemical incident. It focuses on chemical incidents as they are the most likely to overstretch the capacities of the responders in the field. Large-scale chemical events, whether accidental or deliberate, are among emergency responders' nightmare scenarios. The management of such incidents is complicated by the need to both manage and react to public (and responders') fears.

From the moment a large-scale chemical release is declared, first responders have three main objectives:

1.   To contain the scene, secure a safety perimeter, prevent unauthorised crossing of the perimeter, and take actions to protect those who are inside the perimeter.

2.   To rescue casualties from the scene, decontaminate them, classify their medical condition (triage), and treat and evacuate them (the order of activities may vary from country to country).

3.   To contain the dispersal of the contaminant, neutralise it, and decontaminate the scene.

Decisions under stressful circumstances, when there is short time to make them, are often formulated as "Standard Operating Procedures" (SOPs). SOPs have several underlying assumptions:

1. *The "greater good"*. The interests of large numbers of people outweigh the interests of an individual.

2. *Order of priorities*. Saving lives comes first, preventing long-term physical harm to humans, livestock, and the environment next, and then protecting property.

3. *Operational hierarchy*. Persons in charge in the response organisations (commanders) know best how objectives should be achieved; their orders must be followed (by responders as well as by the public). Emergency Response is not a democratic procedure, but a hierarchical one.

Dilemmas that commanders dealing with a major chemical incident might face:

§1. Mass toxicological incident requires large numbers of personnel to deal with the event. Do commanders have the right to force responders to participate in CBRN response? One option could be to have responders expressly volunteer. However, it would delay the operation and courts the risk that there will be fewer responders than needed. Should we instead automatically exclude some groups from these operations? How do we handle responders who refuse the prophylaxis (medication given before the incident to reduce the impact in case of possible exposure)? The issue of whether personnel can be forced to contribute to CRBN response is potentially a major difficulty when compared to the responder's civil rights.

§2. Cordoning off the incident site and preventing unauthorised entry are key steps in preventing further contamination of the general public. However these steps could be extremely difficult to implement. If a chemical incident occurs in, say, an elementary school, parents of pupils may wish to break the cordon to be with or retrieve their children. What degree of force could police officers use in order to prevent worried parents crossing the perimeter?

§3.The walking wounded are likely to be anxious and unwilling to wait for onsite decontamination. They may attempt to leave the area by their own means. These people pose a potentially serious cross-contamination threat. Responders have a duty to prevent the spread of contamination. But to what extent can these victims be restrained against their will?

§4. Personal protective equipment (PPE) can seriously impair the capacity to examine victims and assess their vital signs. Accordingly, decisions will tend to be based on "gross" criteria, such as whether the patient is moving. Should grave decisions be taken under this level of uncertainty (as their implication might be removal of treatment from a patient)?

§5. PPE also impairs communication capabilities. This renders regular "informed consent" procedures impractical or impossible. Patients will receive treatment without proper information and formal consent. Relatedly, auto-injectors may be used in large-scale chemical incidents. The anti-nerve agent drugs may provoke significant side-effects. In many countries, the kinds of drugs used in auto-injectors only have approval for use in military settings only. An incident commander

may therefore encounter a situation where lifesaving drugs are available, but not officially authorised for use.

§6.For decontamination, clothes must be removed and replaced by a new clean set. Procedures could be perceived as a dramatic violation of one's bodily integrity. Do commanders have the right to force decontamination on a reluctant individual?

§7.For decontamination, a degree of public nudity may be required. Privacy and dignity are thus major concerns here. To what extent can such rights be derogated in chemical events?

§8.The decision to decontaminate people may be based merely on their having been in the vicinity of the contaminated area. Even the asymptomatic will be required to undergo decontamination. Is an assumption – based solely on the subject's bad luck to have been in the wrong place at the wrong time – a sufficiently strong justification for forcing them to undergo a procedure that could be considered invasive and humiliating?

2.3 – Consequentialism and "on the spot" decision-making

Commanders have to choose between competing courses of action, none of which are without negative consequences. The challenge is to say how such decisions can best be approached. The commanders will require guidance on how – in the heat of the moment – they can approach novel ethical problems. A strategy for approaching on the spot ethical decision making would be, in broad terms, a framework for weighing competing courses of action, in order that a decision can be made and given rational justification. This is not to suppose that the chosen course of action must be the best possible. The interests of the many outweigh those of the few, and that, in prioritising activities, the imperative to save lives trumps all others.

When faced with a practical ethical dilemma and considerable time-pressure, prima facie, the most promising approach involves the responder comparing projected consequences to identify the course of action most likely to result in the desired outcome. Those will be, first, that lives are saved, and second, that overall harm and suffering are minimised. The advantage of this approach is that it gives responders a clear objective (saving lives) to keep in mind.

Trying to apply the consequentialist approach to on the spot decision-making, the major theme cutting across the dilemmas is restriction of autonomy. In §1, commanders contemplate forcing responders to participate in CBRN response. In §2 and §3, responders face the issue of preventing parents and the walking wounded from crossing the perimeter, and in §6-8, forcing people to be decontaminated against their will.

In §2 and §3, the commander must decide whether to allow a person to cross the perimeter. The commander should reason as follows: if more lives will be saved by allowing the person to cross the perimeter than by preventing them, it is better to allow them to cross. More broadly, faced with the choice of action *A* or *B*, the decision-making procedure runs thus:

C1. Determine how many lives (= x) would be lost by performing *A*.

C2. Determine how many lives (= y) would be lost by performing *B*.

C3. If x is greater than y, perform *A*.

C4. If y is greater than x, perform *B*.

This procedure raises difficulties. One might object on the grounds that there is simply more to moral decision-making than calculating the number of lives saved. There is an objection to consequentialism in general. Lines C1 and C2 of the above schema require the responder to predict the consequences of actions *A* and *B*. But calculating consequences is far from straightforward. In addition, it could happen that exactly the same numbers of lives are at stake. Alternatively, it could happen that the consequences of the courses of action under consideration cannot be estimated to a tolerable level of certainty. Moreover, "a tolerable level of certainty" raises several questions. What constitutes such a level? What can "tolerable" possibly mean? How are good and bad outcomes to be weighed or valued? Thirdly, not all of the relevant variables factored-in to an evaluation of probabilities and outcomes are themselves ethically neutral. The assumption that every life has the same value in such calculations is ethically significant, yet questionable. It is certainly true that in other aspects of disaster response, some people's well-being actually is prioritised, to the detriment of other's: triage, to give the most obvious example, involves the categorising and prioritising of victims, and the possibility of withholding or withdrawing treatment from the severely injured.

2.3 – Exploring the alternatives: valuing values?

There is, on the face of it, tension between the consequentialist commitment to the primacy of a *single* objective (saving lives) and the importance of other ethical principles and values such as autonomy. A deontological approach will require responders to explicitly focus on the value of values, and to actively exploit their understanding of these relative values when assessing candidate courses of action. It might represent the first steps of a responder's decision-making procedure, for a choice of actions *A* or *B*, as follows:

D1. Determine what values and rights are at stake in performing *A*.

D2. Determine what values and rights are at stake in performing *B*.

Further steps will depend on the outcomes of D1 and D2.

There are some obvious problems for a decision-making procedures beginning like this. The deontological approach appears complex. Complex decision-making procedures may provoke problems of their own. They may be excessively time-consuming; they may distract from other tasks or lower overall vigilance. The literature on balancing values and rights is large, sometimes complex, and boasts no widespread consensus, either on what values or rights outrank, or balance, others; or on how the balance is best conceptualised; or even on whether the metaphor of balance is apt at all. Secondly, if rights and values are trumps, and if at least some of them are genuinely inviolable, then there is a distinct possibility that the outcome of D1 and D2 will be to categorically rule out *A* and *B* as justifiable courses of action. When fast decisions are needed, this sort of disabling indecision could cost lives.

An approach to on the spot ethical decision-making in extreme circumstance ought to meet the following requirements: It should provide the responder a workable heuristic for weighing competing courses of action. Moreover, decisions made with its support should be open to rational justification. It is difficult to see the deontological approach as satisfying the first and second requirements.

If this is right, it leaves the consequentialist approach as the only game in town. But this is now problematic, for saving lives is not the *only* relevant and weighty value. One option would be to incorporate rights and values into the consequentialist

approach, thus the adapted consequentialist decision-making procedure will now include a preliminary step at which courses of actions are screened for compliance with relevant constraints:

C1. Confirm that *A* and *B* are not in breach of relevant constraints (discard if they are in breach).

C2. Assuming that *A* complies with all relevant constraints, determine how many lives (=x) would be lost by the act of performing *A*.

C3. Assuming that *B* complies with all relevant constraints, determine how many lives (=y) would be lost by the act of performing *B*.

C4. If x is greater than y, perform *A*.

C5. If y is greater than x, perform *B*.

The possibility here arises that, when both *A* and *B* are in breach of relevant side-constraints, no actionable decision will be taken. Now as a matter of fact, the deontological approach potentially has a response here. The deontological approach can be taken as endorsing the claim that the consequences of a given action are to be judged good or bad, better or worse, in proportion to their tendency to respect or violate certain "core values" or "core rights". The problem however, is that the deontological approach remains far more complicated than the alternative.

2.4 – Conclusion

We have found that a simple consequentialist approach to on the spot ethical decision-making in extreme circumstances provides a relatively simple goal-oriented heuristic. The simple consequentialist approach fails to adequately account for the role of core ethical values and rights. The deontological approach correctly identifies the importance of core values and rights, but forces extremely complex analyses upon responders. Amid the intense pressures to which responders are exposed in CBRN events, this is unreasonable. By consequentialist approach which factors-in core rights and values as side-constraints, the side-constraints set minimum standards beyond which any violation of core rights and values is deemed intolerable.

The decision-making procedure proposed is far from perfect. One can hardly deny the difficulties it leaves untouched: recognising that a course of action would

violate a side-constraint may not be simple; and it is certainly no simple task to attempt to predict the outcomes of courses of action. On the other hand, the approach offers several advantages: firstly, once the initial hurdle of arriving at a selection of potential courses of action, none of which violate a side constraint, is overcome, the heuristic can be expected to enable the responder to make a decision. Secondly, it is relatively simple in at least the following sense: values and rights are factored-in at a different level to that at which a judgment of likely outcomes is made. Thirdly, the approach is flexible in the sense that it could, in theory, be adapted to whatever combination of values the responder organisation deems most important. Training is an important consideration. Values grounding side-constraints must be decided in advance. Once decided, they can be formulated as SOPs to which responders can refer as part of their activities. Ethical training focussing on the operational level can incorporate strategies for identifying actual and potential violations of side-constraints.

Developing strategies for responding to these kinds of problems will likely involve expanding and deepening the approach sketched above. as a large scale chemical incident is one of the more traumatic events a society can suffer, and will be associated with high rates of mortality and morbidity, a thorough discussion of ethical issues in advance of their arising can serve at least the following goals: first, to promote the inclusion of ethical considerations alongside technical requirements and priorities; second, to support emergency responders in ethical decision-making.

3　　　GENERAL PRINCIPLES

In the previous chapter, it was already stated that *"the consequentialist approach must be modified, to incorporates fundamental rights and ethical values as "side-constraints"*. Therefore, these fundamental rights and values would act as red lines that should never be trespassed. The obvious problem is to determine what constitutes an imperative constraint and what could be overwhelmed if the foreseen consequences make it recommendable. It will be the aim of this chapter to discuss this issue. In order to do so, this time we will focus on a different sector, changing chemical for biological incidents, so as to make profit on the results of the desk research developed on the occasion of precedent historical incident, such as SARS or Avian Flu, which took place at the beginning of this century.

It was precisely at that time that the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group designed a table containing ten principles that should guide the response to a pandemic in moral terms[2]. In our opinion, these principles could play a important role as they trace the boundaries that should always be respected, no matter the consequences it might lead to. Even if it is true that not all these principles would be applicable in all CBRNE incidents and even if the balance between the different values might change from one scenario to another, we consider that the core work of the Working Group constitutes one of the most important efforts to provide a practical guide in terms of ethics of the response phase. That is why we will reproduce here this ten principle scheme, even if reducing them to six and adding some considerations on our own.

3.1 - Restriction of individual liberty

In a public health crisis, restrictions to individual liberty will probably be necessary in order to protect the public from serious harm. In these cases, public health should prevail against individual liberty. However, these restrictions should always:

---

[2] See: University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, *Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza,* 2005. p. 6. Available at: http://jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf. Last visited: 31 August 2014

1) respect human dignity (individuals should never be considered as mere means);

2) be proportional, necessary, and relevant;

3) employ the least restrictive means;

4) and be applied equitably (unjustified exceptions should be carefully avoided).

This implies, on the other side, that all decision-makers should keep in mind several key issues when restriction of individual liberty is at stake. They should at least *"weigh the imperative for compliance; provide reasons for public health measures to encourage compliance and establish mechanisms to review decisions"*[3].

3.2 - Proportionality.

The principle of proportionality involves a balance[4] between the level of an incident and the measures undertaken as a consequence. In terms of rights/duties balance, *"Proportionality requires that restrictions to individual liberty and measures taken to protect the public from harm should not exceed what is necessary to address the actual level of risk to or critical needs of the community"*[5].

If we do not adequately react against a CBRNE major crisis, due to a mistaken evaluation or if we try to hide its real importance due to political reasons, such as in the case of Chernobyl nuclear incident, the consequences might be dramatic. On the other hand, if we are to exaggerate the effects of a crisis, we might suffer from the consequences of a waste of resources or an unnecessary limitation of individual rights. The reaction against avian flu performed by the World Health Organization may be a

---

[3] Ibidem, p. 10.

[4] According to ENGLE, the modern proportionality principle was originally formulated by Grotius, who linked the idea of justice as proportion (ratio), as formulated by Aristotle to the idea of interest, balancing as a method for dispute resolution (See: ENGLE, Eric, "The history of the general Principle of Proportionality: an overview", p. 5, at: http://amor.cms.hu-berlin.de/~engleeri/theory/CONVERTdartmouth-proportionality.pdf

[5] University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group. *Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza,* 2005, p. 10.

Contract No. 313077

good example of this[6], if we adhere to the opinion of all those who considered that it was not really proportional to the level of threat involved by the situation. Even if this were not the case, this case shows quite well the necessity to into account the principle of proportionality while reacting to a CBRNE incident.

3.3 - Reciprocity

As stated by the Toronto working group[7], *"reciprocity requires that society support those who face a disproportionate burden in protecting the public good, and take steps to minimize burdens as much as possible. Measures to protect the public good are likely to impose a disproportionate burden on health care workers, patients, and their families"[8].* If we amplify this assertion to all those who have also to play higher risks that most people, such as fire workers, policemen etc., then we could conclude that the principle of reciprocity implies that society cannot ask for heroism is we are not ready to provide for a special attention to the needs of those who are willing to risk harm and put their lives at risk. Adopting measures which might dismiss these risks, taking care of their families while they accomplish with their duties, etc., are good examples of how this reciprocity can be demonstrated.

3.4 - Clarity, transparency and trust.

Trust constitutes *"an essential component of the relationships among clinicians and patients, staff and their organizations, the public and health care providers or organizations, and among organizations within a health system. Decision makers will be confronted with the challenge of maintaining stakeholder trust while simultaneously implementing various control measures during an evolving health crisis"[9].* Indeed, crises such as the recent Ebola epidemics have demonstrated that in such terrible conditions, patients and lay people may even attack healthcare workers

---

[6] See, for instance: HARRIL, Eben, "Was the threat on H1N1 flu exaggerated?", at: http://content.time.com/time/health/article/0,8599,1956608,00.html

[7] University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group. *Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza,* 2005, p. 10.

[8] Ibidem, p. 10.

[9] Ibidem, p. 10.

due to mis-perceptions associated with the risks to health[10]. Under these circumstances, the final results of a CBRNE incident might be similarly challenging.

Trust is a value which is usually very difficult to gain and very easy to lose. That is why transparency is an essential tool in order to maintain it. However, in a CBRNE major crisis situation, it is possible that full transparency could bring undesired consequences. Therefore, an adequate communication policy is not only an extremely practical tool, but also a moral requisite in a crisis response scenario. That is why we will dedicate some pages further on to address this concrete essential issue.

3.5 - Solidarity

The principle of solidarity needs careful consideration, as well as its potential for enhancing cooperation among responsible actors and the general public. It is important to think about solidarity in terms of humankind scope, as far as the dimension of a CBRNE major crisis situation often overwhelms the national scope[11]. It would be extremely unethical to try to hide this evidence, as far as it would involve harmful consequences. International cooperation is, in fact, a key factor if we wish to build an optimal response to these incidents.

It is not only a question of showing solidarity with all human beings, forgetting about the citizen/human being rights discussion, but also the need to protect national citizens which pressures crisis managers to cooperate between themselves. *"As the world learned from SARS, a pandemic influenza outbreak, will require a new vision of global solidarity and a vision of solidarity among nations. A pandemic can challenge conventional ideas of national sovereignty, security or territoriality. It also requires solidarity within and among health care institutions. It calls for collaborative approaches that set aside traditional values of self-interest or territoriality among*

---

[10] See: NOSSITER, A., **"**Fear of Ebola Breeds A Terror of Physicians", *The New York Times,* July 27 2014, available at: http://www.nytimes.com/2014/07/28/world/africa/ebola-epidemic-west-africa-guinea.html?_r=0. Last accessed: 31 August 2014.

[11] In fact, it is difficult to think about a major biological, chemical or nuclear crisis which might be confined to a unique country. Pandemics, for instance, usually expand easily in a globalized world where no frontier can be traced to pathogens. In the case of nuclear or chemical incidents, the concrete consequences of a crisis may vary, depending on different factors. The Bophal and Seveso or the Fukushima incidents were not beyond the national level, while the Chernobyl accident clearly affected several different countries.

health care professionals, services, or institutions"[12]. Therefore, international solidarity is the only acceptable answer to the issues posed by a CBRNE major crisis situation.

3.6 - Respect for human dignity, non-discrimination and equity

Finally, we should highlight the most important principle, a principle that must rule even in the worst circumstances, the principle of respect for human dignity. According to it, all human beings share the same value, a value which is not comparable to any other living or non-living being. According to this principle, we should never use as a human being as a mere means, as far as we are to be considered ends-in-ourselves, even if this could lead to a better final result in terms of saving human lives, for instance. Therefore, it must be underlined that consequentialism must always find its strongest limit on the idea of dignity and the necessity to forget about the idea of risking or directly sacrificing someone's life for a better good, at least if he/she does not agree on doing so.

However, it is absolutely important to highlight that respecting human dignity does not imply in any case to treat everybody in the same way. It involves the principle of non-discrimination for what you are, but not a principle of discrimination for reasons related to your conditions. This means that, indeed, you can make serious differences in terms of treatment, protection, etc. between people in case of a CBRNE major crisis situation, but only if these distinctions are not based in what people are, but in other reasons, such as, for instance, the professional skills that they possess[13] or their probability to survive to their wounds. Indeed, the main task to be addressed by triage is to design criteria able to discriminate between human beings without working against the human dignity principle, that is, to determine the requirements of the equity principle.

In practical terms, thus, this principle necessarily includes an epilogue in form of the non-discrimination principle: nobody could be discriminated against on the basis of his/her race, nationality, religious beliefs, age, etc. This, on the other side, involves

---

[12] See: University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group. *Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza,* 2005, p. 10

[13] That is why it makes sense to use the available resources to protect healthcare workers first: we do not discriminate them for what they are, but because of their capability to contribute to save lives.

that during a disaster all persons should receive assistance under the same principles, and be treated humanely in all circumstances, that is to say with respect and tolerance. Urgency can never be used as an excuse to act against the principle of respect to human dignity.

A corollary of what we have merely stated is that discrimination between people in case of CBRNE major crisis situations is not only acceptable, but even a moral obligation, and all prevention, preparedness and detection strategies should include these clauses. But sometimes the discrimination principle does not only apply for the victims or the vulnerable sections of the population, but also in favour of those who are especially committed to risk their lives or health in order to mitigate the consequences of the crisis, as we will show further on. What must be considered as undeniable in any case is that discrimination should never be linked to factors such as age, race, gender, nationality, for example.

4 MORAL OBLIGATIONS IN THE RESPONSE PHASE (LAY PEOPLE)

4.1 – A general introduction: the duty of care in the response phase

It is usually accepted that the quality of the reaction against a CBRNE incident will substantially depend on the level of impact on the local community. Fortunately, history demonstrates that people are usually willing to aid in CBRNE and other types of major crisis situations. In fact, there are a lot of examples of people who even put their lives at risk so as to save someone else's life, albeit they are not morally or legally obliged to do so[14]. Moreover, there is now a common agreement in major crisis response management: volunteers, that is, people who spontaneously offer to aid even if they are not morally obliged to do so, will come[15]. In fact, they will come no matter what emergency managers may do, even if it could sometimes lead to severely dysfunctional consequences[16].

However, it is also possible to find situations when people refuse to cooperate even if cooperation does not involve harm or risk. Individual cases such as that of Kitty Genovese[17] or David Cash[18] are excellent examples of this type of behaviour. Collective attitudes, such as the indifference showed by a vast majority of the Occidental tourists during the Asian tsunami cannot be placed at the same moral level, but it is undeniable

---

[14] See: UN. VOLUNTEERS, Volunteerism and Disasters. An extract from the 2011 State of the World's Volunteerism Report, pp. 6 ff, available at:
http://www.unv.org/fileadmin/docdb/pdf/2013/resources/Booklet_SWVR_Volunteerism_and_Disasters.pdf. Last accessed: 31 August 2014

[15] It is quite interesting to highlight that California's guide on post-disaster volunteers is titled *They will come,* available at: http://www.nationalservice.gov/pdf/disasterservices_startupguide.pdf. Last accessed: 6 September 2014

[16] We will come back to this point when we will face the ethical issues related to volunteerism and its management.

[17] GADO, M., "The Kitty Genovese Murder", *Crime Library,* available at:
http://www.crimelibrary.com/serial_killers/predators/kitty_genovese/1.html. Last accessed: 8 September 2014

[18] BOOTH/BERKELEY, Cathy, "The Bad Samaritan", *Time,* Sunday, June 24, 2001, available at: http://content.time.com/time/magazine/article/0,9171,139892,00.html. Last accessed: 16 September 2014

that most of us felt that something was wrong while watching their images in the television[19].

The issue rising from this evidence consists of determining whether we can think about a moral obligation to cooperate in the response to a CBRNE incident and what should be the limits of that duty in case it can really be established. The answer to the first question seems to be clearly affirmative. As Malm et al. have stated, *"Common morality holds that we all, in virtue of our shared humanity, have a moral duty to aid others in great need when we can do so at minimal risk to ourselves (…).Within moral theory, such duties are commonly known as general positive duties. They are positive in that they oblige us to do something to aid another. In contrast, negative duties, such as the duty not to kill, oblige us to not do something that will harm another. And the positive duties are general in that they rest on no special relationship between the aider and the aidee other than that of common humanity. They fall on us generally"*[20].

Indeed, the duty of care for people needing urgent help can even be considered a legally binding one. For instance, a huge number of countries consider it as an offence to reject aid to a victim of a traffic incident, in case we are able to provide for it. The same happens when we find an unattended child and nobody else can take care of him/her[21]. Thus, it is quite easy to conclude that; indeed, there is a moral obligation to

---

[19] As GOLDENBERG stated, "*The photographs of relaxing western tourists, which have run in newspapers around the world, smack of gluttony, ignorance and even depraved indifference for human lives. World, and especially western, governments who have pledged billions in emergency relief cannot be satisfied by the contradictory message sent by hedonistic tourists carrying on their vacations as if nothing happened*" (See: GOLDENBERG, Adam, "Epidemic indifference. Western tourist sunbathe in the aftermath of the disaster", *The Harvard Crimson,* 12 January 2005, available at: http://www.thecrimson.com/article/2005/1/12/epidemic-indifference-as-the-working-populace/. Last accessed: 6 September 2014.

[20] MALM, Heidi, MAY, Thomas, et al., "Ethics, Pandemics, and the Duty to Treat", *The American Journal of Bioethics*, 8:8, 2008, p. 4-19, DOI: 10.1080/15265160802317974. Last accessed: 6 September 2014

[21] Indeed, child care should be considered as an essential disaster service in the community and response plans should always include special preventions so as to assure they will not suffer unnecessary harm due to an inadequate care during an emergency. However, the most recent reports on this topic show that there is still a long way to run. See, for instance: NATIONAL COMMISSION ON CHILDREN AND DISASTERS, *2010 Report to the President and Congress,* AHRQ Publication No. 10-M037. Rockville, MD: Agency for Healthcare Research and Quality, October 2010, available at: http://archive.ahrq.gov/prep/nccdreport/nccdreport.pdf; SAVE THE CHILDREN (Author: Susan Davie), *Don't leave me alone: Protecting Children in Australian Disasters and Emergencies, Government Report Card on Emergency Management Planning,* Australia, 2013, available at: http://www.emknowledge.gov.au/resource/get/?id=4406. Last accessed: 6 September 2014

take care of people needing help in CBRNE incidents, a duty which is primarily based on the principle of solidarity and our fragility as isolated human beings.

Establishing the limits on the idea of duty of care is, of course, much more complicated, as far as the boundaries between what might be considered a supererogatory duty and a moral obligation are extremely fuzzy. It is obvious that the duty of care would never apply when it involves a high risk to suffer harm or even die. On the other hand, it seems undoubtedly that our moral obligation to cooperate will be undeniable when no risk or harm is involved at all, but only some kind of disturbance. In all those situations which might be placed between both extremes, it is much more difficult to draw a line and analysis should be done case-by-case. But principles, indeed, should always remain the same. The case shown in the next paragraph may serve as a good example of how moral thinking should work in these conflictive circumstances.

4.2 – A special issue: the moral obligation to cooperate in research in a biological major crisis situation

There is still a question that deserves a short analysis. Let us expose it through an example. Let us imagine a fictional situation (extremely difficult to happen in practice, but not impossible at all) when a terrorist group manages to disseminate a synthetic virus able to cause thousands of victims in the EU population. Let us also imagine that a short number of people infected by the virus do not show but mild symptoms of the disease. Under these circumstances, it would be clear that their immunological system includes something extremely efficient in order to defend them against the virus. Thus, researchers would be probably willing to conduct research on them, so as to produce an efficient drug or vaccine against the pathogen. However, all these people could perfectly reject to be part of the research, stating that, as far as they are not a threat against public health, their own interest should never be sacrificed due to public interest considerations. And they could always quote article number two of the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights

and Biomedicine (Oviedo Convention), which states that "*The interests and welfare of the human being shall prevail over the sole interest of society or science*"[22].

In such a situation, should we really preserve those people's interest not to be part of a research, even if it might involve the loss of a considerable amount of human lives? In our opinion, it is hard to provide an answer to this worrisome issue, which involves a clash between the principles of respect to individual autonomy and solidarity. Some key variables should always be kept in mind, such as, for instance:

- The harm that the research might cause. If we are to suppose that the research involves making experiments that cause physical or psychological harm to people who are not at all a threat to public health, then we should not legitimate them. However, if this were not the case, that is, if the subjects would not suffer harm (think, for instance, that they should only provide for a sample of their DNA), then the balance would range to the side of solidarity.

- The probability that those experiments would really contribute to the fight against the disease. The greater this chance would be, the greater the support that the solidarity principle would receive. Sacrificing an individual fundamental right is such a dramatic measure that we should at least be reasonably sure that it would be really useful for an extremely important purpose.

- The range of available alternatives. If we consider that we could arrive to the same result without constraining individual autonomy, then we should never proceed to do so. However, if obliging those people to contribute to science were the only way to reach the foreseen aim, then solidarity should overweight individual autonomy.

Therefore, the principle of solidarity should prevail against individual autonomy, even if individuals could never be considered as a threat to public health if research would cause no harm to them, it could probably cause a huge benefit to someone else and it could be reasonably stated that is the only way to address the

---

[22]Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (Oviedo Convention)

situation. Under these circumstances, an utilitarian approach would definitely arrive at the conclusion that solidarity should be considered as a moral imperative and prevail against individual preferences. Indeed, the Oviedo Convention includes an exception to the provisions made in article number two, previously quoted:

Oviedo Convention. Article 26 – Restrictions on the exercise of the rights

1. *No restrictions shall be placed on the exercise of the rights and protective provisions contained in this Convention other than such as are prescribed by law and are necessary in a democratic society in the interest of public safety, for the prevention of crime, for the protection of public health or for the protection of the rights and freedoms of others.*
2. *The restrictions contemplated in the preceding paragraph may not be placed on Articles 11, 13, 14, 16, 17, 19, 20 and 21.*

As may be seen, Article 26 does foresee a possibility to trace a limit on individual rights when it is necessary in the interest of public safety, and Letter 2 does not include Article number 2 in the list of articles this exception would not be applicable to. Therefore, we must conclude that, in exceptional circumstances, lay people could and should be compelled to cooperate with public authorities even providing for DNA data, samples of tissues and/or blood, etc. We will, anyway, move back to these issues when analyzing data protection issues and human right to privacy.

5   VOLUNTEERS AND VOLUNTEERISM

5.1 – Introduction

Volunteers and volunteerism have increased its impact as a key factor in major crisis response in the last years. Indeed, since the United Nations proclaimed 2001 as the Year of Volunteers, the number of people involved in this phenomenon has constantly increased, together with its international profile and its level of semi-professionalism. Their importance in the response phase to a major incident is sometimes fundamental, especially when it does not require trained personal. The relevance of volunteer engagement in cases such as the earthquakes in Mexico City (1985)[23], Tangshan (1976)[24], or Southern Italy (1980)[25] are perfect historical examples in that sense. In some other occasions, volunteers are extremely useful matching common tasks, a circumstance which allows responders to focus upon specialized work[26].

Its importance, in any case, goes far beyond those facts, as far as volunteerism is a key factor in order to implement values such as solidarity, mutual trust, altruism, reciprocity, etc., acting as a fundamental motivational tool in case of CBRNE major crisis situations. However, it is *"still largely misconstrued and undervalued even though it is one of the principal channels for people to engage in enhancing their own well-being".* That is why it is important to dedicate a paragraph to this issue, highlighting the ethical issues related to it.

---

[23] See: OLSON, R and R. OLSON, "Urban Heavy Rescue", *Earthquake Spectra,* 1987, 3(4), pp. 645-658.

[24] See: QUARANTELLI, E. L., *How Individuals and Groups React During Disasters: Planning and Managing Implications for EMS Deliver.* Preliminary Paper#138, Newark: University of Delaware Disaster Research Center, 1989.

[25] See: NOJI, E. K., "Earthquakes", in: NOJI, E. K., *The Public Health Consequences of Disasters,* New York: Oxford University Press, 1997, pp. 135-178.

[26] See: LOWE, S. A. FOTHERGILL, "A need to help: Emergent volunteer behaviour after September 11th, in: Natural Hazards Research and Infrastructure Systems (Eds.), *Beyond September 11th; An Account of Post-Disaster Research.* Special Publication #39, Boulder: University of Colorado, 2003, pp. 293-314.

5.2 – Volunteerism, a clarification

It is important to start clarifying what should be considered as volunteerism and what will be the kind of volunteerism that we will address in this part of our report. According to the UN, *"the terms volunteering, volunteerism and voluntary activities refer to a wide range of activities, including traditional forms of mutual aid and self-help, formal service delivery and other forms of civic participation, undertaken of free will, for the general public good and where monetary reward is not the principal motivating factor"[27]*. Keeping this broad definition in mind, it could be perfectly concluded that people belonging to communities suffering from a CBRNE incident who assume the moral responsibilities that circumstances might bring to their shoulders could be considered as volunteers. However, in our concrete case, we would not work that way. Indeed, we will only consider people who are not faced to such kinds of situation and, still, compromise themselves to help people to fulfill their needs. The rationality behind this decision is quite clear: these last people do not act according to a moral obligation, but following an impulse which commits them to behave in a morally better way that what we could consider to be obligatory.

5.3 – Volunteerism: the ethical issues related to management

The first important topic that should be addressed is that volunteerism is usually an excellent tool in terms of response to major crisis, as previously stated, but could also cause serious problems[28]. Indeed, spontaneous volunteerism *"can overwhelm a response system and, unless coordinated, can make things worse*

---

[27]Resolution adopted by the General Assembly 56/38. Recommendations on support for volunteering. At: http://www.unv.org/en/news-resources/resources/un-resolutions/doc/volunteerism-is-a-means.html. Last accessed: 12 September 2014

[28] As JENNINGS et al. have stated, *"Volunteerism is a double-edged sword. On one side, it is one of the most admirable aspects of any disaster situation and, as such, should be encouraged and applauded. On the other side, it can cause managerial and technical nightmares and reinforce the adage that the road to hell is paved with good intentions"* (See: JENNINGS, B., et als, *Ethical Guidance for Public Health Emergency Preparedness and Response: Highlighting Ethics and Values in a Vital Public Health Service.* Prepared by Bruce Jennings and John Arras, For the Ethics Subcommittee, Advisory Committee to the Director, Centers for Disease Control and Prevention. October 30, 2008, p. 103).

instead of better"[29]. For instance, the impulse of acceding to the emergency area may cause traffic congestion, increase the number of affected people; create public distress, etc.[30]. As a consequence, managing volunteerism is not only a practical, but also a moral issue, as far as it compromises the final objective of crisis response strategies, reducing harm as much as possible. Thus, it is an imperative related to the principle of beneficence to organize and coordinate volunteers in an optimal way. This involves several key issues that should be always kept present:

- Response management and coordination of volunteers requires a single overarching management system, able to match needs and resources, as far as it might be extremely complicated[31]. This is the only way which makes it really possible to optimize the efforts of the volunteers[32].

- Preparedness and planning are always the best strategies to optimize the outputs of volunteerism[33]. Designing procedures, determining facilities and logistics before a crisis will always work better than improvisation. Volunteers who have been participating in aid programs

---

[29] See: MERCHANT, R. M., J. E. LEIGH and N. LURIE, "Health Care Volunteers and Disaster Response- First, Be Prepared, *New England Journal of Medicine,* March 11, 2010, 362; 10, p. 872-873; GREEN W. G., *Freelance Response to the Site-Medical Staff Option of Choice?, The AAMA Executive*, 2003, 1-16

[30] See: SCANLON, J., *Working Paper 75: Convergence Revisited: A New Perspective on a Little Studied Topic,* Boulder: Natural Hazards Research and Applications Information Center, University of Colorado, 1992.

[31] As FERNANDEZ et al. stated, "*Matching volunteers to needs can be challenging*. Organizations that are a part of the formal response often turn away spontaneous volunteers because the organization is unprepared and has not considered how to integrate them" (See: FERNANDEZ, L. S., J. A. BARBERA and J. R. van DORP, "Strategies for Managing Volunteers during Incident Response: A Systems Approach", p. 5, available at: http://www.hsaj.org/?fullarticle=2.3.9

[32] See: HARRALD, J. R., J. BARBERA, I. RENDA-TANALI et als, *Observing and Documenting the Inter-Organizational Response to the September 11th Attack on the Pentagon,* NSF Report. Washington DC: The George Washington University Institute for Crisis, Disaster and Risk Management, 2002; QUARANTELLI, E. L., *Research Based Criteria for Evaluating Disaster Planning and Managing.* Preliminary Paper #246, Newark: University of Delaware Disaster Research Center, 1997.

[33] As the California's Guide states, "*Disaster response and the ensuing recovery can require thousands of overtime hours, as well as additional personnel and resources that agencies may lack. Meanwhile, other important, but routine, services to the community get disrupted for some time, as attention is diverted to the disaster. With a little advance planning, some of those difficulties can be relieved by volunteers. Without advance planning, however, a valuable resource may go untapped and opportunities may get lost"* (See: OES CALIFORNIA, *They Will Come.* Post-Disaster Volunteers and Local Governments, November 2001, p. 1, available at:

for a long time are usually much more useful to those who make a decision after the CBRNE situation has happened. In fact, mobilization of volunteers should be an ongoing process rather than a punctual event[34].

- We should always make profit on well-established organizations with a demonstrated experience in disaster response support aid. They are usually reliable and provide for excellent human resources and coordination tools. Indeed, if organizations are not working, *"freelance volunteers" will come. And freelancing "poses safety problems for the freelancer, other emergency responders, and victims"*[35].

- Some people should not be accepted as volunteers at the first moment, as far as they might suffer from a lack of the necessary skills so as to provide for an effective help. Indeed, some people could easily become victims instead of practitioners once sent to the battlefield[36]. Different kinds of incidents require different levels of training. An explosives major crisis needs lots of people working in the field removing ruins, for instance. Instead, in CBRN crisis, involving untrained people might lead to a disaster[37]. Therefore, we should always remember that volunteers are only useful if they cover real needs. Otherwise, they might even block organizations role in disaster response. However, rejection should always be done in the most possible positive way, for instance, telling the volunteer to postpone his/her engagement till the recovery phase, so as to avoid any kind of discouragement[38].

---

[34] STALLINGS, R. A., "Volunteerism inside complex organizations: Off-duty hospital personnel in a disaster", *Nonprofit and Voluntary Sector Quarterly,* 1989, 18(2), 133-145.

[35] See: FERNANDEZ, L. S., J. A. BARBERA and J. R. van DORP, "Spontaneous volunteer response to disasters: The benefits and consequences of good intentions", *Journal of Emergency management,* Vol. 4, Nº5, September/October 2006, p. 63.

[36] Ibídem, pp. 57-68.

[37] This is especially relevant in case of biological crisis, as far as people lacking for adequate training, protection, etc. might perfectly spread viruses, provoking terrible effects that could have been perfectly avoided.

[38] As JENNINGS et al. have stated *"Planning should include the provision of resources to supervise, train, and use volunteers effectively. How essential their function is will vary from one emergency situation to the next, but to actively discourage or restrict them from doing something to help is highly undesirable from the long-term point*

- A legal statute of volunteerism would always be recommendable, even if sometimes it is impossible to settle a formal compromise due to the urgency of the situation. A written document stating that the volunteer understands the risks involved in his/her participation and describing his/her concrete tasks in some clauses could be extremely helpful so as to avoid misunderstandings and legal issues[39].

5.4 – Volunteerism: information and consent issues

The second relevant issue to be explored is that of volunteers informed commitment. It is an ethical imperative that all volunteers are offered accurate information about the situation they are to face, the dangers it might involve, the real benefits that their contribution might bring, etc. As Merchant et al, stated, *"Before committing to a relief effort, the volunteer should have a clear understanding of what working in a disaster area will entail: the nature of the worksite, level of security, local weather, and living conditions. For example, the average temperature in Haiti is currently 85°F, worksite conditions are considered dangerous, security is classified as high-risk, and volunteers have no assurance of sanitation, adequate food and water, or access to medical evacuation if illness or injury occurs. Underlying medical conditions or the inability to safely store medications may prevent some volunteers from functioning in such an environment. Emotional challenges are also important to consider, since the pain and suffering volunteers witness can cause extreme psychological distress"[40]*.

We should always keep in mind that volunteers are not in any way obliged to face the risks and disturbances that a CBRNE incident might involve, which could be

---

of view of community well-being and morale, no matter how expedient it may be in the short term" (See: JENNINGS, B., et als, *Ethical Guidance for Public Health Emergency Preparedness and Response: Highlighting Ethics and Values in a Vital Public Health Service.* Prepared by Bruce Jennings and John Arras, For the Ethics Subcommittee, Advisory Committee to the Director, Centers for Disease Control and Prevention. October 30, 2008, p. 104).

[39] Indeed, some American States have already developed state laws related to volunteers. See: FERNANDEZ, L. S., J. A. BARBERA and J. R. van DORP, "Spontaneous volunteer response to disasters: The benefits and consequences of good intentions", *Journal of Emergency management,* Vol. 4, Nº5, September/October 2006, p. 63.

[40] MERCHANT, R.M., LEIGH, J.E, LURIE, N:, "Health Care Volunteers and Disaster Response- First, Be Prepared", Knew England Journal of Medicine, 362, March 2010, pp. 872-873

really considerable. Therefore, they we must be completely sure that they perfectly understand the terms and conditions of their involvement, the real scenario they will have to face, their real commitment with the response, their mental capacities, and all other relevant factors we could think about prior to accepting their involvement. A perfect guarantee of a free informed decision should be, in fact, the result that a morally acceptable volunteerism policy should seek for. Obviously, control systems should be more rigorous in situations which involve higher risks.

6   HEALTH CARE WORKERS: ETHICAL ISSUES

6.1 – Introduction

Health care workers play a major role in the response to CBRNE incidents. They are the ultimately responsible to provide for an adequate treatment to all those suffering from the consequences that this kind of situations might cause to their health. In that sense, health care workers may become a most appreciated resource, especially if the number of affected people is as relevant as to overwhelm the mechanisms that are in place to face the situation.

However, CBRNE incidents might involve a dramatic risk for healthcare workers. For instance, the response to a nuclear or chemical incident might cause them serious harm due to the presence of toxic agents in the affected area. In the same sense, it seems plausible that the exposition to the atmosphere created by a major explosive crisis, such as in the 9/11 terrorist attacks might cause terrible consequences to those who play that risk, including a broad range of diseases, from asthma to depression[41]. Nevertheless, it is clear that it is the case of pandemics which better shows how risky it could be for healthcare workers to get involved in the response to a CBRNE incident. History, indeed, demonstrates that this statement is unfortunately precise. In the case of SARS, about a 30% of the affected people corresponded to healthcare workers and in Toronto, Canada, *"slightly less than half of the 182 cases involved health professionals. Three of those professionals died after exposure"[42]*. In recent times, Ebola has affected and killed some of the practitioners involved in the response[43].

---

[41] According to a research conducted by Mount Sinai Hospital's World Trade Center Health Program, exposition to 9/11 dust increased the risk to suffer from diseases such as cancer, apnea and PTSD. See: ELLIS, Marie, "Hearth risk: 9/11 rescuers more likely to have sleep apnea and PTSD", *MTN,* 21 March 2014, at: http://www.medicalnewstoday.com/articles/274388.php. Last visited: 31 August 2014; GLYNN, Sarah, "Risk of cancer is 15% higher in 9/11 responders", *MTN,* 24 April 2013, at: http://www.medicalnewstoday.com/articles/259600.php. Last visited: 31 August 2014.

[42] See: FLECK, L.M., "Are there moral obligations to treat SARS patients?", *Medical Humanities Report,* 2003, 25(1): 3–4.

[43] See: ASSOCIATED PRESS, "Ebola kills Liberian doctor. Two Americans infected, July 28, 2014, at: http://www.modernhealthcare.com/article/20140728/INFO/307289978#. Last visited: 31 August 2014.

Under these circumstances, it does not seem to be unusual that, in case of a CBRNE crisis, such a pandemic state, a considerable proportion of healthcare workers refuse to attend to their obligations. For example, it has been reported that in the SARS epidemics a number of practitioners did not show up for work[44]. This historical precedent is not an isolated case. Indeed, academic work has demonstrated that health care workers attitudes in case of a CBRNE major crisis survey constitute a potential source of major issue: a study produced in 2005 in Maryland showed that almost half of people working for public health agencies would not report for duty during a pandemic[45].

Keeping this in mind, the issues that need to be faced can be quite easily described: do healthcare workers have a duty to care for patients albeit it involves a serious risk of harm and even death? If this were the case, what would be the limits on this obligation? If they would not accomplish them, what would be the consequences? Or, are we obliged to provide for the adequate measures to make the accomplishment of their duty easier for them?

The answer to these questions cannot be so easily exposed. Indeed, there is a huge debate on this topic which is far from being solved. Even if most of us agree on the moral obligation that healthcare workers have to treat their patients, there is a general disagreement on the basis and range of this obligation and the limits which might be traced. In the next pages we will expose the most relevant arguments and facts on this issue. We will start critically exposing the reasons usually adduced to justify health care workers moral (and legal) obligation to confront higher risks than volunteers and lay people. Then, we will discuss the limits on this duty and the measures that should be adopted to reward their disposition to play those risks.

---

[44] As the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group stated, *"workers generally showed heroism and altruism in the face of danger during the SARS outbreak, but some balked at caring for people infected with SARS, and a few were dismissed for failing to report for duty"* (See: UNIVERSITY OF TORONTO JOINT CENTRE FOR BIOETHICS PANDEMIC INFLUENZA WORKING GROUP, *Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza,* 2005, p. 10. Available at: http://jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf. Last visited: 31 August 2014).

[45] See: BALICER, R. D., OMER, S., BARNETT, D., and EVERLY JR., G., "Local public health workers' perceptions toward responding to an influenza pandemic", *BMC Public Health,* 2006, Apr 18(6): 99.

6.2 – Are health care workers obliged to play higher risks than lay people? The historical background

It is often stated that the problem about the ethical issues related to the obligations of health care workers, specifically physicians, in case of pandemics is quite recent, as far as in the ancient times, Physicians "did not perceive patients to be infectious"[46]. Therefore, no ethics related to pandemics were ever developed at that time. The academic literature shows a vivid debate about what happened in the next centuries. Some scholars – usually called traditionalist - consider that a sort of ethics of epidemics started in the fourteenth century and we could talk about a certain tradition on this topic. Some others –usually called nihilists - directly reject this point of view, considering that we cannot talk about medical ethics on pandemics prior to 1847[47].

In any case, it is quite agreeable to state that situation changed in the nineteenth century. The first modern medical code, the American Medical Association Code was approved in 1847. This first version of the Code included a statement like this: *"When pestilence prevails, it is [physicians'] duty to face the danger, and to continue their labors for the alleviation of suffering, even at jeopardy of their own lives"*[48]

However, the duty to treat patients at personal risk was removed from the AMA Code in 1957[49]. An appropriate explication for this change has been provided by Robert Baker: *"One explanation is that doctors had come to believe – mistakenly as it turned out – that antibiotics and vaccines would soon eliminate the threat of infectious epidemics and pandemics. Thus, medical ethics specifically addressing practitioner conduct during epidemics appeared to be dated and gratuitous – until HIV/AIDS made*

---

[46] See: HUBER, S., & M. WYNIA, "When pestilence prevails: Physician responsibilities in epidemics", *American Journal of Bioethics,* 2004, 4(1), W5–W11.

[47] See: BAKER, R. "Medical ethics and epidemics: a historical perspective", in GALINT, J., S. PHILIPOTT, R. BAKER and M. STROSBERG, (Ed.), *Ethics and Epidemics.* Advances in Bioethics Series, vol, 9, 2006, p. 97.

[48] See: HUBER, S., & M. WYNIA, "When pestilence prevails: Physician responsibilities in epidemics", *American Journal of Bioethics,* 2004, 4(1), W5–W11.

[49] CLARCK, Ch. C., "Doctors, duties, and dangers: the reasonable physician and contagious populations", in GALINT, J., S. PHILIPOTT, R. BAKER and M. STROSBERG, (Ed.), *Ethics and Epidemics.* Advances in Bioethics Series, vol, 9, 2006, p. 164.

its presence felt in the late 1980s[50]. Indeed, when HIV/AIDS came into scene, the debate on the responsibilities of the health care workers suddenly resurrected and it has not ended.

The relevance of this new threat provoked the AMA's Council on Ethical and Judicial Affairs (CEJA) to make a statement in 1986, declaring that "*Physicians and other health professionals have a long tradition of tending to patients afflicted with infectious disease with compassion and courage. However, not everyone is emotionally able to care for patients with AIDS. If the health professional is unable to care for a patient with AIDS, that individual should ask to be removed from the case. Alternative arrangements for the care of the patient must be made*"[51]. However, this opinion was defied by a high number of scholars belonging to the field of bioethics, such as Annas[52], Arras[53], Daniels[54], Pellegrino[55], etc. who were asking for an increased moral commitment. Nowadays, it is quite unanimously accepted that a negative to treat a HIV/AIDS patient would be fully unacceptable from both an ethical and legal point of view. However, the kind of pandemics that could be linked to a biological major crisis nowadays do not have much to do with HIV/AIDS[56]. Thus, the

---

[50] See: BAKER, R. "Medical ethics and epidemics: a historical perspective", in GALINT, J., S. PHILIPOTT, R. BAKER and M. STROSBERG, (Ed.), *Ethics and Epidemics.* Advances in Bioethics Series, vol, 9, 2006, p. 97

[51] COUNCIL OF ETHICAL AND JUDICIAL AFFAIRS OF THE AMERICAN MEDICAL ASSOCIATION. CEJA Report B – I-86: Statement on AIDS. Chicago: American Medical Association, 1986.

[52] ANNAS, G., Legal risks and responsibilities of physicians in the AIDS epidemic. *Hastings Center Report,* 1988, 18(2), 26–32.

[53] ARRAS, J., "The fragile web of responsibility: AIDS and the duty to treat", *Hastings Center Report*, 1988, 18(2), 10–20.

[54] DANIELS, N., "Duty to treat or right to refuse?", *Hastings Center Report,* 1988, 18(2), 36–46.

[55] PELLEGRINO, E., "Altruism, self-interest, and medical ethics", *JAMA*, 1987, 258, 1939–1940.

[56] As MALM et al. have stated*," the recent and emerging threats of other serious infectious diseases, such as severe acute respiratory syndrome (SARS), drug-resistant tuberculosis, Ebola, and a humanly transmissible avian flu, show this context to be woefully narrow. Among other things, the speed with which influenza can spread shows that such a virus has the potential to overwhelm and ultimately shut down a healthcare system in a way that AIDS never did. Thus, not only are we concerned with the duty of, say, a surgeon to set the broken leg of an HIV+ patient, but also with the duty of physicians in general to treat flu victims qua flu victims, both to aid the victims themselves and to limit the spread to others. This may necessitate longer hours (and corresponding increased exposure to the virus), potential quarantines, and assignments outside one's normal area of practice. And given that a functioning healthcare system requires the contributions of all sorts of workers, discussions about the duty to treat need also to examine the duties, if any, of nurses, paramedics, technicians, public health workers and various core staff*" (See: MALM, Heidi, MAY, Thomas, et al., "Ethics, Pandemics, and the Duty to Treat", *The American Journal of Bioethics*, 8:8, 2008, p. 4-19 (4)).

factors to be considered when discussing this topic have considerably changed in the last years, as we will show in the next paragraph.

6.3 – Are health care workers obliged to play higher risks than lay people? The discussion

At the current time, most scholars consider that health care workers obligation to play higher risks than lay people in the case of pandemics might be linked to one of the following factors:

- *Contract-based consent.* The first and most relevant factor that might justify a special implication of health care workers in the fight against a pandemic is undoubtedly an expressed consent included in the clauses of a labor contract. For instance, if an epidemiologist explicitly agrees to analyse and study viruses for health purposes, considering that task as part of his work, he/she could hardly reject being involved in a research in the case of pandemics, no matter if this might involve or not a risk for him/her. However, the main problem is that it is not so common to find that kind of detailed compromises in labor contracts. And even if we wish, it would be difficult to think about all possible scenarios and obligations. Moreover, health care workers might ask for costly additional pay if they were obliged to sign that kind of clause[57].

- *Implied consent.* Some scholars[58] consider that even if it is true that most health care workers do not explicitly consent to the risk related to a CBRNE major crisis situation, they implicitly consent in that as far as they voluntarily engaged with a profession which involves a high level of risk. Indeed, it is well know that physicians have to deal with sick people and the possibility to get infected should not be a surprise for any of them. However, this argument, which seems quite strong at a first sight,

---

[57] Think, for instance, in the case of an oncologist. It is almost impossible to find a contract related with this medical speciality that includes any kind of reference to the possible obligations of an oncologist in case of a pandemics. If we were to include it, would the oncologist accept it without asking for a kind of compensation?

[58] See: DWYER, J., "SARS as an ethical test". *Eubios Journal of Asian and International Bioethics,* 13, 2003, 142–143¸ FLECK, L.M., "Are there moral obligations to treat SARS patients?", *Medical Humanities Report,* 25(1), 2003, 3–4.

also involves a number of problems. The most relevant is that some of the professions included in the label "health care workers" are not aware at all that their work implies any kind of risk. Moreover, it could even be stated that some medical specialities, such as ophthalmology, dermatology, anaesthesiology, etc. so far to epidemics that is hard to hold that a dermatologist might have in mind the possibility to be involved in a risky situation when he decided to work as such. Another relevant factor to keep present is that most health care workers might have quite an abstract idea of the risks that their profession might involve, but probably they do not fully understand how this could be concrete in practical terms. For instance, most of the physicians who gained their title in the seventies or the eighties were not aware of the risk of epidemics, as far as it was considered extremely low at that time. Would we consider that they gave some kind of implicit consent to risk their lives under such basis? Could it be considered a real informed consent?

- *Oaths and Codes.* One common argument to sustain the special implications of health care work is that all those who develop take oaths or accept codes of ethics which include some special duties[59]. However, the validity of these tools is not universally accepted. Some scholars consider that they should not be applicable if a contract settling the concrete terms of a labor relationship is signed. Some others consider that they are mostly symbolic and do not include concrete obligations, but to "humanity"[60]. There are also those who underline the juridical problems that changes in codes may provoke: are you obliged to respect a code which is not the same that the code that ruled when you became a physician?[61] Finally, it is worth to

---

[59] See: CAPRON, A. M., "Ethical considerations in International Preparedness Planning Efforts", p. 171

[60] American Medical Association (AMA), *Declaration of professional responsibility: Medicine's social contract with humanity*. Chicago, IL, AMA, 2001, Available at: http://www.amaassn.org/ama/pub/category/7491.html. Last accessed September 8, 2014).

[61] See: CLARK, C., "In harm's way: AMA physicians and the duty to treat, *Journal of Medicine and Philosophy,* n° 30(1), 2005, 65-87.

remember that only some of the collectives included in the label "health care workers" are somehow related to oaths and codes. What would be the fundamentals of everybody else's moral compromises?

- *Special training.* Some scholars consider that health care physicians are much more obliged than anybody else to provide for aid as far as their professional training protects them agains contagious[62]. Therefore, *"the expert knowledge and ability of the [healthcare professional]… leads to a higher burden of responsibility to render aid"[63].* However, Malm et al., have persuasively argued that if we consider that it is the ability acquired thanks to this training what generates special moral duties, then we should arrive into a disturbing conclusion: retired health workers, those who have lost their license should also share this duty. Moreover, any of us should be in the same position if the ability required were quite common. For instance, we would be obliged to take care of homeless people, at least under some conditions, as far as we are perfectly able to do so. However, we do not usually accept this kind of arguments[64].

- *Reciprocity.* Finally, some scholars base the special moral obligations of health care workers on what they usually call "reciprocity" or "social contract view". According to this hypothesis, health care workers receive a preferential treat from the society where they live. Their careers are usually subsidized by the public, they are allowed to self-regulate some substantial parts of their activity, they have preferences in terms of access to medicines, vaccines, protective materials, etc. The reciprocity view considers that, in exchange for these privileges, health care workers face higher responsibilities than lay people. However, the weakness of this argument relays on the different status that the

---

[62] HUBER, S. J. and WYNIA, M. K., "When pestilence prevails. Physician responsibilities in epidemics", *American Journal of Bioethics*, 4(1), 2004, 5–11.

[63] See: CLARK, C., "In harm's way: AMA physicians and the duty to treat, *Journal of Medicine and Philosophy,* n° 30(1), 2005, 65-87 (80).

[64] See: MALM, Heidi, MAY, Thomas, et al., "Ethics, Pandemics, and the Duty to Treat", *The American Journal of Bioethics*, 8:8, 2008, p. 4-19 (10)

different members of the "health care workers" category hold in terms of privileges. Should a physician who paid his own training in a private university be less obliged than another one who studied in a public university? What about the nurses? Are they less obliged than physicians because they cost less and enjoy fewer privileges? And the rest of this collective? As might be seen, it is really hard to provide an answer to these questions from the point of view of the reciprocity argument[65].

It is difficult to arrive at a common consensus on the level of risk that health care workers are morally obliged to face in case of a CBRNE major crisis situation. The case of pandemics offers an excellent example in that sense. Therefore, it is necessary to think about the measures that could help us to improve their level of commitment, so as to avoid, for instance, the adoption of compulsory measures when a situation has come and everything starts to go wrong. Measures aimed to support their determination to accept high level of risk might involve privileges for them and their families, as we will explore in the next paragraphs, and will also include a hard work in terms of information, consent, planning, etc., but this seems to be the only way to be efficiently prepared for a pandemics situation.

6.4 – Health care workers and positive discrimination

The case of health care workers is probably the best example of why positive discrimination could be perfectly acceptable from an ethical point of view. Moreover, there are a number of good reasons to consider that protection of heath care workers' health should be a priority in major crisis situations, even if it involves a prima-facie discrimination against some other people. The first is related to the goal that must guide the management of a crisis situation: to increase the ratio of survival and

---

[65] In this sense, MALM et al. stated: *"there, in that argument's variation or flexibility, lies its weaknesses as well. For given the huge differences in benefits, both between and within different categories of healthcare work (e.g. physician, nurse, radiological technician, physical therapist, public health worker), it will be difficult to determine who in fact has the duty and/or to what degree, and thus difficult to use the argument in theoretical or pragmatic ways (...)were we to try to resolve this problem by viewing the duty as a matter of degree, then we would have to explain what that really means within healthcare practice. Would nurses, with their weaker duties, be allowed to go home earlier than physicians? Would they get to say "no" to some patients that physicians were required to treat?"* (See: MALM, Heidi, MAY, Thomas, et al., "Ethics, Pandemics, and the Duty to Treat", *The American Journal of Bioethics*, 8:8, 2008, p. 4-19 (10))

dismiss the ratio of harm. As far as health professionals are essential in order to reach that aim, it would be not only absurd but also unethical to treat them in the same way as most people, as far as we would be arriving at a solution that does not fulfil the main ethical goal that all preparation and prevention measures should include: the minimization of the global harm produced by a crisis[66].

The second reason sustaining positive discrimination refers to the conduct we hope them to develop: as we have continuously mentioned in this paragraph, health professionals are supposed to face a major risk than people who have never compromised to develop a work which is so oriented to someone else's well-being. No matter if this supposition is really well grounded or not, it seems undeniable that it would be unfair not to compensate them for doing so or at least, not to provide them for the best available resources so as to minimize the risks they voluntarily assume[67].

What would this positive discrimination consist of? It seems quite easy to agree on the idea that the first and most relevant positive discrimination measure would be to implement a priority in the administration of vaccines or treatment against the diseases provoked by the CBRNE major crisis situation. This way, we would be, on one hand, accomplishing the criteria of the reward (we would be rewarding health care workers for their personal exposition to a risky situation) and, on the other hand, contributing to minimisation the consequences of the situation (as far as there would be a higher number of healthy health care workers available to attend their professional obligations).

A second and extremely relevant factor should be a preference for their families. In our opinion, it makes a sense that if we are to ask health care

---

[66]CAPRON, A. M., "Ethical considerations in International Preparedness Planning Efforts", p. 172

[67]*"While health professionals may have an obligation to submit themselves to risk for the sake of others, society (and the specific organizations that employ health professionals) has a corresponding obligation to protect them from known hazards while they are fulfilling their professional duties. Society has an obligation to provide health-care workers with the training and tools they need. It is ethically wrong for society to put health professionals in harm's way while failing to provide them with needed resources. Society should strive adequately to provide needed care to all health workers who become ill or disabled in the line of duty, and to provide compensation to their families should they die"*. Ethical Guidance for Public Health Emergency Preparedness and Response: Highlighting Ethics and Values in a Vital Public Health Service. Prepared by Bruce Jennings and John Arras, For the Ethics Subcommittee, Advisory Committee to the Director, Centers for Disease Control and Prevention. October 30, 2008, pp. 14. See also: CAPRON, A. M., "Ethical considerations in International Preparedness Planning Efforts", p. 172.

Contract No. 313077

professionals to face a risky situation, we should at least assure them that we will take care of their families in the best possible way. Such an approach could contribute, for instance, to making quarantine much more acceptable for them. It could also improve their professional attitude, as far as they would not have to deal with the stress provoked by the anguish about their families. And finally, we could dramatically increase their impulse to show up for work: even if they would not be willing to expose to contagious, they might face it in order to improve their families' situation.

6.5 – CBRNE incidents and other professions duties

In previous paragraphs we have mainly focused on the role to be played by health care workers in a CBRNE major crisis situation. Nevertheless, they are not the only ones to put their lives at risk under these circumstances. Police officers, fire-fighters, militaries, etc., are good examples of people who could also be asked to assume a difficult role when something goes really wrong. What could we say about their duties? Is it possible to arrive at the same conclusions as in the case of health care workers?

One might say so, but it seems quite difficult to totally agree on that. Indeed, there is quite a difference between (most) health workers and those who work in high-risk professions related to major crisis response: the latter usually are perfectly aware of the risk their professions entail. Moreover, their work contracts include clauses referring to these issues, clauses which describe the risks that they should have to face if necessary. Of course, in the most extreme case militaries, who are supposed to put their lives at risk, but there are a number of professions which are quite near to this boundary. Of course, this does not mean that they could be exposed to harm or death if it were not necessary at all (this could happen because the situation could be faced in another way or because there would be no way at all to do so). And, of course, whatever previously stated about health professional and positive discrimination should probably be extended to these other bodies: if they are to risk their lives for us, we should at least try to protect them as much as possible.

7   COMMUNICATION POLICY

In the response phase, an adequate communication policy is a key element to an effective response. Issues such as who should take care of communication tasks after the crisis, how the information will be provided and what information should be kept confidential constitute major issues that could make a decisive difference in the final result of a CBRNE situation[68]. Indeed, the final objective of an excellent communication policy in the response phase must be to provide for the means to reaching an excellent public information campaign during the crisis, because, as Seeger[69] stated, *"effective crisis communicators are honest, candid and open in their public communication. Such honesty, in the long run, fosters credibility with both the media and the public. Moreover a response that is less than honest may, ultimately, create the perception of wrongdoing (…) when communicating with the media, organizations should avoid inconsistency by accepting uncertainty and avoiding any temptation to offer overly reassuring messages"[70].*

Thus, response phase mechanisms must, in principle, guarantee that all information regarding the crisis be made available to the public. This is especially relevant in the case of a CBRNE. These crises usually develop trans-boundary issues and so response tools must include the appropriate tools so as to ensure adequate international coordination.

---

[68] Indeed, it could even be stated that *"Community members have a right to be provided with truthful, complete information so that they in turn can fulfill their civic and personal obligations in the context of a public health emergency"* (See: Ethical Guidance for Public Health Emergency Preparedness and Response: Highlighting Ethics and Values in a Vital Public Health Service. Prepared by Bruce Jennings and John Arras, For the Ethics Subcommittee, Advisory Committee to the Director, Centers for Disease Control and Prevention. October 30, 2008, p.95).

[69] SEEGER, Matthew W., "Best practices in crisis communication: An expert panel process". *Journal of Applied Communication Research,* 2006, 34:232–244.

[70] In the same sense, SCANLON stated: as Scanlon points out, *"the principles for effective communication in health emergencies are the same: there is still the need for identification, response and communication, and there are still many of the same ethical issues. But there is also a lot of knowledge and experience in dealing with such problems and the advice is consistent: while there may be ways to improve how information is given out, there is no disagreement that communications during a pandemic should be open, complete and as immediate as possible"* (See: SCANLON, Joseph, "Ethical Issues in Health Communications: Strategies for the (Inevitable) Next Pandemic", in: O'MATHÚNA, D. P., Bert. GORDIJN and Mike CLARKE (Eds.), *Disaster Bioethics: Normative Issues When Nothing is Normal,* Springer, 2014, 77-78).

However, this general criterion – let the information flow - is only applicable to the crisis as such. It does not apply to other issues, such as, for instance, the information about the victims' names, or their health status, not to mention their personal data in general. If the information is not relevant for public health or other public interest reasons, data protection rights should be firmly respected, no matter how unusual the situation might be. The same could be stated about the information related to the military (if they are involved) or the police investigation, in those cases when a terrorist attack is involved. This sensitive information should be kept in secret whenever effectiveness recommends it and it does not compromise the efforts to reduce harm as much as possible. Therefore, all those who are in charge of the response phase tools should implement the necessary tools so as to guarantee a full respect of these fundamental rights.

The question on the *how* information must be offered is also quite simple to answer: experience demonstrates that in case of a CBRNE incident all possible channels should be involved. There are several reasons which support this statement. The first is easy to understand: the higher the number of means to get involved, the higher the probability to obtain public awareness. Of course, in theory this policy could lead to an excess of alarm and a "cry wolf" effect, but experience demonstrates that people are usually more likely to ignore warnings than over-react[71]. The second is a little bit more sophisticated. People usually check information. If they hear a message that attracts their attention (and a message related to a CBRNE major crisis situation is supposed to do so), they will probably try to check its consistency through another information channel[72]. If it is not confirmed, they will think that it has been a mistake.

---

[71] See: SCANLON, Joseph, "Ethical Issues in Health Communications: Strategies for the (Inevitable) Next Pandemic", in: O'MATHÚNA, D. P., Bert. GORDIJN and Mike CLARKE (Eds.), *Disaster Bioethics: Normative Issues When Nothing is Normal,* Springer, 2014, 85. He goes on writing: "*Yet overcoming the myth of panic may require educating the health community and the media, which has shown the same reluctance because of the same mistaken fear that this could cause alarm or panic*".

[72] As PERRY and LINDEL stated, *"Technically any single communication channel cannot meet the information demands (...) Our data on citizen preference suggest two important conclusions. First, a mix of channels should be used to send messages. Second, the news media need to be systematically incorporated into this mix"* (See: Perry, Ron, and Michael Lindell. 1989. *Communicating environmental risk in multiethnic communities*. London: Sage, p. 62).

That is why it is so important to use all the available tools to spread the information[73]. In fact, mass media has a moral obligation to cooperate in the diffusion of accurate information and experience shows that the role to be played by television might be essential in such a situation. Moreover, it is important to keep in mind that the impact of a major crisis depends on the level of audience they reach in the mass media. Thus, mass media is fundamental in order to mobilize volunteerism, provide for international aid, etc.[74]. Consequently, mass media managers should always be perfectly aware of the impact that their decisions regarding a CBRNE major crisis might have and play their role in the most ethical manner.

New technologies and social network development introduces relevant issues in terms of communication policies in the response phase. Indeed, it is clear right now that the raising of these new tools has introduced an element of uncertainty in the communication issue. On one hand, they could be extremely helpful so as to spread the news. For instance, there is a system called Ushahidi, originally developed in

---

[73] As SCANLON stated, *"Although individuals get a great deal of information from the media, they do not necessarily form their opinions from what they hear, read or see. What the media do is make people aware of an issue. But if persons wish to form opinions they consult persons they trust, influencers or opinion leaders, and they consult different persons on different issues (Katz and Lazarsfeld1955). They might ask a female friend with children about a new infant formula but ask someone they work with about a new union contract. In a health emergency it seems reasonable to suggest they will turn to a physician, a nurse, an ambulance attendant, or even someone with first aid training. If all these people have been given the same information directly they will confirm and therefore support what is being said at news conferences"* (See: SCANLON, Joseph, "Ethical Issues in Health Communications: Strategies for the (Inevitable) Next Pandemic", 82).

[74] As the Guidelines for Evaluation and Research in the "Utstein Style" state: *"The news media may present additional ethical problems. They provide the eyes and the ears for the global community, and, in that capacity, tend to set the priorities for international concern. Consequently, only disasters that are covered excessively by the media receive proper attention by the outside world. However, there are endless situations that would merit assistance, but never receive it because the media find them of lesser interest. Should the media have a duty to cover all international tragedies even if such reporting cannot be measured in their ratings and, thereby, by their respective financial status? For example, after the fall of the Mengistu Regime in Ethiopia in 1991, the media ignored the plight of the people, perhaps because the event immediately followed the end of the Gulf War. While it was no problem to raise billions of USD for warfare against Iraq, it was not possible to obtain 20,000 trousers to a refugee camp in Northern Ethiopia to help stop a louseborne relapsing fever epidemic.26 Furthermore, some organisations seem interested in a conflict primarily because it is linked to the interest of the media. During the "War Against Terror" since the fall of 2001, few other disasters have been afforded adequate coverage by the media. A storm that devastated the Canary Islands as well as a cholera epidemic in Nigeria were hardly, if at all, noticed. In the United States, a devastating storm surge in Florida barely made it into the news media. Also, from time to time, it appears that some organizations may provide assistance primarily for the associated media coverage. It seems that they perceive that their obligation terminates when the media attention is gone, since media attention and future funding seem so closely linked"* (Cfr: VV. AA., Health Disaster Management: Guidelines for Evaluation and Research in the "Utstein Style". Chapter 8: Ethical issues. *Prehosp Disast Med* 2002;17(Suppl 3):128–143).

Kenya in 2008, which has demonstrated to be extremely efficient in terms of providing information in cases such as the earthquakes in Chile and Haiti in 2010[75]. In the case of the eruption of Mount Merapi in Central Java, Indonesia, in 2010, a nearby community made wide use of Twitter as a communication tool, together with a community radio called *Jalin Merapi.* Both tools complemented each other making it easier for volunteers to optimize their coordination and providing information to the whole community[76].

However, on the other hand, the emergence of these new communication tools could facilitate the spread of false alarm messages, or the incorporation of sensitive information that should have never been revealed. That is why determining who will be responsible for the transmission of the information is so extremely

---

[75] As the Volunteerism and Disaster Report explains, *"Volunteers monitor and map incoming reports from various media sources including information from Twitter, Facebook, blogs and traditional media such as radio, print and television. Crisis locations are identified and volunteers can reach them more quickly. The technology was initially developed to give cell-phone users the ability to send text messages about locations and events. The messages appear in a web-based map. During the Haiti earthquake, Ushahidi in Nairobi and a technology partner, Frontline SMS, developed a code (9636) for use by people in need anywhere in Haiti. People could send text messages to that number free of charge so the appropriate response group could be deployed to assist. This facility made it possible to identify injuries, lost family and friends, trapped individuals, dead bodies, orphaned children and water needs. In the case of the 2008 Wenchuan earthquake in China, the response was accelerated by the sharing of maps of areas in the province needing assistance. These were transmitted by thousands of volunteers online"* (See: UN. VOLUNTEERS, Volunteerism and Disasters. An extract from the 2011 State of the World's Volunteerism Report, p. 8, available at:
 http://www.unv.org/fileadmin/docdb/pdf/2013/resources/Booklet_SWVR_Volunteerism_and_Disasters.pdf).

[76] In this sense, have written: *"Advances in Internet and Communication Technologies (ICT) have also enabled new forms of online volunteering that are in many ways reshaping the crisis management landscape. A recent report [15] summarizes emerging approaches to disaster volunteering and provides a detailed account of how in the aftermath of the 2010 Haiti earthquake several new technologies were for the first time combined into effective systems for disaster response. Despite severely damaged local infrastructure, many victims were able to send reports of needs via SMS to Twitter. Members of the Haitian diaspora in the United States then translated the reports from the native Creole into English. Others collected and entered them into the Ushahidi [34] platform, which lets users enter reports, annotate them with basic meta-data such as location, and present the reports on a map with topic filters. Online volunteers also used the Open Street Map platform to construct new digital base maps based on high-resolution satellite imagery of the disaster area that was made available. The United Nations Office for Coordination of Humanitarian Affairs (OCHA) has credited volunteers and the tech. community with collecting more information during the first 48 hours of disasters than OCHA normally does during the first week"* (See: ROSTADIUS, J. et al., "An Introduction for System Developers to Volunteer Roles in Crisis Response and Recovery", in T. COMES, F. FIEDRICH, S. FORTIER, J. GELDERMANN AND T.MÜLLER *(Eds.), Proceedings of the 10th International ISCRAM Conference –* Baden-Baden, Germany, May 2013, p. 875*),* available at:
http://star-tides.net/sites/default/files/documents/files/Are%20Spontaneous%20Volunteers%20a%20Disruption,%20Resource%20or%20Partner.pdf). Last accessed: 6 September 2014.

important in the internet era, so as everybody could be aware of who is to be believed. And it is also essential to keep in mind that impersonal messages are not usually the best mean to communicate the news. Most people will always prefer to have a chance to obtain first-hand information. This involves call centers and specialized staff, previously trained. It is much easier to face this task if plans have been designed before the crisis than if we have to improvise after it starts[77].

Finally, it makes a sense to wonder *when* information should be spread. In this case, the usual consensus is not to delay the transmission of the information, as far as *"In today's globalized wired world information about outbreaks is almost impossible to keep hidden from the public. Eventually the outbreak will be revealed. Therefore, to prevent rumours and misinformation (…) it is best to announce as early as possible"*[78]. Therefore, the criterion must be to inform people whenever it seems necessary, no matter if this could lead to a false alarm situation. Of course, the worry which might be created as a consequence of the information and its consequences should be considered, but in case of doubt, we should proceed to provide for the information, as far as people is much more likely to ignore warning than over-react to it[79].

---

[77]According to SCANLON, "It is also important to make sure messages are released through all possible channels—including, but not restricted to, the mass media—and that call centres are available for people to contact if they have questions. These centres must be staffed 24/7 and monitored because they are key to finding out what sorts of concerns people have. It is also important there be good lines of communication with physicians, clinics and hospital emergency wards because they, too, need to know what is happening and because they will be continually learning about people's concerns. Communications, in short, is not simply drafting and handing out news releases: it is a carefully planned part of the whole system of crisis response" (See: SCANLON, Joseph, "Ethical Issues in Health Communications: Strategies for the (Inevitable) Next Pandemic", 91).

[78] See: WORLD HEALTH ORGANIZATION. 2005.*WHO outbreak communication guidelines*. Geneva:World Health Organization, p. 5.

[79] As SCANLON stated, *"The answer to the question of whether an announcement should be made even when there is uncertainty about a disease outbreak seems clear. The announcement should be made and those making it should be both open and restrained, promising further information as it becomes available. To do less risks eventual disclosure that relevant information was concealed"* (See: SCANLON, Joseph, "Ethical Issues in Health Communications: Strategies for the (Inevitable) Next Pandemic", in: O'MATHÚNA, D. P., Bert. GORDIJN and Mike CLARKE (Eds.), *Disaster Bioethics: Normative Issues When Nothing is Normal,* Springer, 2014, 89).

8 CONCLUSIONS

CBRN events raise significant ethical questions for first responders. Indeed, there are a number of situations in which first responders' operational duties are seemingly in tension with other people's rights. Responders' decisions must be taken quickly, under stress, and amid uncertainty. The aim of this report was to examine *how* such decisions should be approached. Some operational decisions can be supported by "Standard Operating Procedures" (SOPs); however SOPs may not suffice for ethical decisions. The question then, is of how to support responders in ethical decision-making when, *ex hypothesi*, SOPs cannot be relied upon. The outcome of this paper was to present a consequentialist approach to on the spot ethical decision-making in extreme circumstances, but one which incorporates ethical values and rights (such as autonomy) as "side-constraints".

It is quite difficult to arrive at a common consensus on the level of risk that health care workers are morally obliged to face in case of a CBRNE major crisis situation. The case of pandemics offers an excellent example in that sense. Therefore, it is necessary to think about the measures that could help us to improve their level of commitment, so as to avoid, for instance, the adoption of compulsory measures when a situation has come and everything starts to go wrong. Measures aimed to encourage their determination to accept high levels of risk might involve privileges for them and their families, and will also include hard work in terms of information, consent, planning, etc., however this seems to be the only way to be efficiently prepared for CBRN situations.

ANNEX

AMA CODE OF MEDICAL ETHICS
PRINCIPLES OF MEDICAL ETHICS

Preamble

The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility to patients first and foremost, as well as to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honourable behaviour for the physician.

Principles of medical ethics

I. A physician shall be dedicated to providing competent medical care, with compassion and respect for human dignity and rights.

II. A physician shall uphold the standards of professionalism, be honest in all professional interactions, and strive to report physicians deficient in character or competence, or engaging in fraud or deception, to appropriate entities.

III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.

IV. A physician shall respect the rights of patients, colleagues, and other health professionals, and shall safeguard patient confidences and privacy within the constraints of the law.

V. A physician shall continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.

VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical care.

VII. A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health.

VIII. A physician shall, while caring for a patient, regard responsibility to the patient as paramount.

IX. A physician shall support access to medical care for all people.

Adopted June 1957; revised June 1980; revised June 2001.