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Psychosocial Crisis Management in CBRN Incidents

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Psychosocial Crisis Management in CBRN Incidents

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Christoph Unger
President of the Federal Office of Civil Protection and Disaster Assistance

With the termination of the cold war, for many years civil protection shifted its focus away from NBC incidents, nowadays referred to as CBRN incidents. However, the large amount of hazardous material transportation on our roads and railways, as well as industrial incidents, implies threats with which we have to face up to. The threat caused by terrorist attacks is another reason why CBRN dangers are back on the agenda. Authorities and threat prevention organisations, politicians and scientists deal with the prevention and damage limitation of CBRN incidents. From a technical but also psychosocial point of view, CBRN situations pose a challenge. They can cause considerable stress to those directly involved, the population, operational personnel and management, crisis staff and politically responsible persons. Fortunately, step by step, psychosocial aspects have been included in concepts, education and training of the operational staff and management as well as of politically responsible persons.

Together with the protection commission of the Federal Minister of the Interior and other experts, the Federal Office of Civil Protection and Disaster Assistance (BBK) in Germany developed special training concepts including psychosocial recommended procedures for operative personnel and incident officers. Another task of the work group is the inclusion of psychological and sociological findings into concepts to ensure adequate risk and crisis communication in these special damage situations. Since 2008, training on psychosocial crisis management in CBRN situations have been successfully implemented and scientifically evaluated at BBK's Academy for Crisis Management, Emergency Planning and Civil Protection (AKNZ).

We appreciate it that the Federal Agency for Technical Relief (THW) has acted on this topic to initiate, together with BBK, the project "Psychosocial support for civil protection forces coping with CBRN", which has been promoted by the European Commission and which started in February 2011 with the cooperation of partners from Spain and the Netherlands. On behalf of the Federal Interior Ministry, psychosocial crisis management was included into the "Framework concept concerning CBRN protection for civil protection in Germany", a concept which was passed recently.

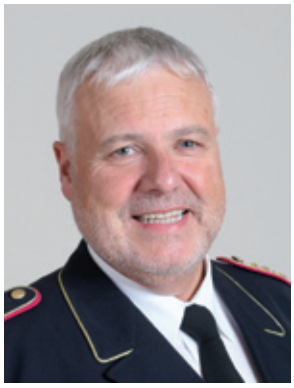
I would like to thank the experts for their competent support, their high commitment in the past and their willingness to contribute to future activities.

Bonn, March 2011

Christoph Unger

President
of the Federal Office of Civil Protection and
Disaster Assistance

Bundesamt
für Bevölkerungsschutz
und Katastrophenhilfe



Hans-Peter Kröger
President of the German Fire Services Association

Damage scenarios leading to the release of dangerous chemical substances, biological agents or radioactive material have increasingly been part of the daily work of our fire services. High technical demands but only limited possibilities to exercise under realistic conditions, the incalculable behaviour of the population and, due to the Personal Protective Equipment, the difficult communication with persons concerned, are some of the reasons why CBRN incidents imply high psychological stress. Not to mention the concern about one's own health and, possibly, the health of the family.

The enhanced confidence in dealing with affected people, above all in the context of a massive number of injured and during extraordinary damage scenarios represents a considerable factor to protect the psychological health of rescue personnel. Therefore, the increased integration of psychosocial competences into the curricula for rescue personnel is necessary. The feedback from participants in the exercise "Psychosocial crisis management in CBRN situations" at the Academy for Crisis Management, Emergency Planning and Civil Protection (AKNZ) underlines how helpful the practical exercise of possible psychosocial actions in critical situations is.

Therefore, the German Fire Services Association and the foundation "Help for Helpers" are supporting the research and training programme, initiated 2007 by the Federal Office of Civil Protection and Disaster Assistance (BBK) which deals specifically with the psychosocial aspect of CBRN operations. The first recommendations resulting from this programme are introduced here.

At the international trade show for fire brigade matters, "Interschutz 2010" in Leipzig, the German Fire Services Association and the foundation "Help for Helpers" in cooperation with BBK were given the opportunity to present possible reactions of directly affected people and of the population involved in CBRN incidents to a large number of operational staff and incident response officers. With the support of professional actors from the training programme at the AKNZ, the relevance of psychological influencing factors on the course of operations and the necessity of psychosocial skills were vividly presented.

Bonn, March 2011

Hans-Peter Kröger

President of the German Fire Services Association

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We furthermore express our thanks to the actors of the Arturo-School of Cologne and the Consol-Theatre of Gelsenkirchen for their committed and impressively realistic impersonation of injured people and for their subtle feedback.

We extend a special thank you to the participants in the 2009 and 2010 pilot seminars for their willingness to experiment and for their valuable ideas.

Psychosocial Crisis Management in CBRN Incidents

Content

Summary of the latest research

Experiences from missions and exercises

Recommended psychosocial procedures for CBRN missions

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Section Psychosocial Crisis Management

Date: December 2009 / updated March 2011

I. Chapter

CBRN Protection - a Current Topic

In Germany, the risk of chemical, biological and radiological incidents (CBRN incidents) has significantly increased over the last years. Thus, we are confronted with a large number of transportation of dangerous goods on our roads and railways. Terrorist attacks with “dirty bombs“ cannot be excluded. Against such a background, CBRN protection has become increasingly important over the last years.

The expert knowledge of uniformed services and staff in management positions is particularly challenged by CBRN incidents. To cope with them, the latest technology must be used. Thorough training is necessary to be able to profit from this technology and to analyse the measured results correctly. The Federal Government and the Länder as well as threat prevention organisations react to this challenge by providing extensive training and further training to uniformed services and management staff. The training matches the latest technical development in CBRN protection. At the same time, the structural guidelines for operations are updated.

Recently, findings from psychology and sociology have been increasingly included in the development of concepts as well as the education and further education in CBRN protection. The starting point is the fact that CBRN missions can put high psychological pressure on all those who are directly or indirectly involved in the process. During CBRN incidents, the number of people who are mentally affected can be considerably higher than the amount of injured persons. Recent exercises have shown that psychosocial knowledge and psychological actions can reduce the fear of the affected people and thus change their behaviour. Thus, the coordination of missions can be improved. By taking psychosocial findings into consideration, the skills and abilities as well as the confidence of the uniformed services are strengthened, when they deal with the people on scene. As has been proved, the stress of the mission is thus reduced and the long-term impact of mental pressure can be prevented.

CBRN incidents can vary considerably. Not all CBRN incidents need psychosocial crisis management. The following statements and recommendations refer to operations which included the release of harmful chemical substances, biological agents or radioactive substances and caused (potential) damage to people. Therefore, psychosocial aspects gain high importance necessitating the integration of psychosocial crisis management into the structure of missions.

At one glance

Psychosocial aspects as part of CBRN protection – why?

1. CBRN incidents may involve a high psychosocial stress potential which has an impact on:

   - Those who are directly involved and their relatives,
   - the whole population,
   - uniformed services and management staff,
   - experts who work in the health and social sector,
   - crisis staff and those who are responsible at a political level.

2. During CBRN incidents the number of people whose mental well-being is in the immediate and medium term affected can be considerably higher than the number of people whose body is harmed by the incident.

3. The correct use of psychological and sociological findings

   - can encourage a cooperative behaviour of injured and other directly affected people. Thus, the course of the operations becomes more foreseeable and structured.
   - can reduce fear responses by those directly affected and their relatives and thus mitigate the long-term psychosocial impact of stress.
   - can give emergency response personnel services and management staff the feeling that they are competent and confident to act even in difficult and unfamiliar missions like CBRN incidents. Thus, the stress of the operation and the long-term psychosocial impact of the incident on emergency response personnel are reduced.
   - makes professional risk and crisis communication possible and allows the population a risk assessment which reflects reality and strengthens their self-help and self-protection possibilities.

In the German and European language area, there has been little scientific and practical knowledge about psychosocial crisis management in CBRN incidents. The topic has not been included into special training on CBRN. Even at the international level, publications on this special topic have been few and far between (Havenaar et al., 1997; Holloway et al., 1999; Hyams et al., 2001; Kawana, 2001; Stein et al., 2004; Ursano et al., 2004; Balaratnasingam & Janca, 2006; Raphael & Stevens, 2008).

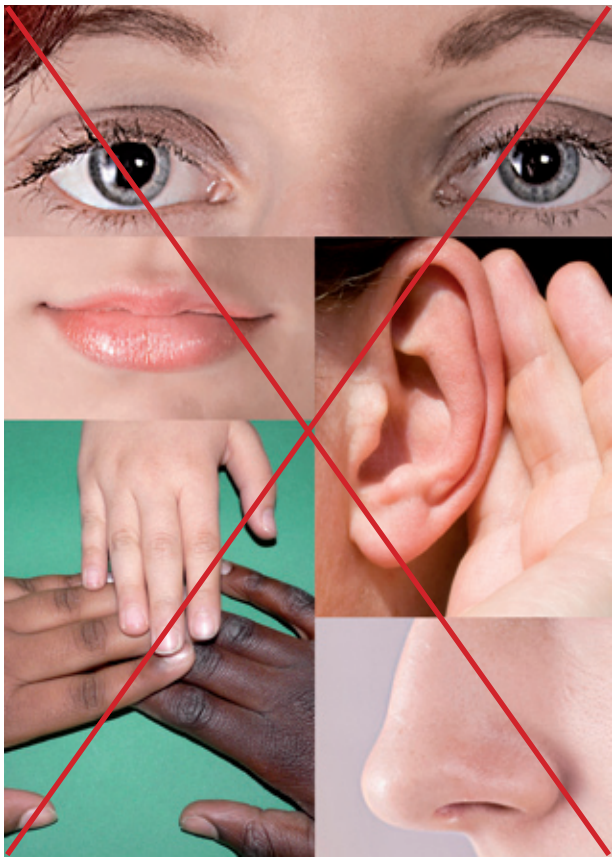
That is why the Federal Office of Civil Protection and Disaster Assistance (BBK), i.e. BBK's section "Psychosocial Crisis Management", established an interdisciplinary expert group in 2007, which consists of scientists from various disciplines and experienced emergency response personnel and managers from the field of CBRN protection. Since then, this expert group has met on a regular basis. The creation of the group was supported by the sections "Technical CBRN Protection", "Health Protection against CBRN Hazards, Epidemics Control Management" as well as by the training/instruction section "Special Sciences Applied in Civil Protection". The aim of this expert group is the further development of research questions and recommended procedures for the practice which are based on national and international scientific findings and mission experiences concerning psychosocial crisis management in CBRN incidents.

After the screening and evaluation of national and international literature, the development and testing of a training concept for psychosocial crisis management in CBRN incidents was decided which addresses rescue teams and incident commanders. The first results of the experts' work and of the training project are summarised in this text.

II. Chapter

Psychosocial Stress in CBRN Incidents and its Impact

Radioactive, biological and some chemical substances cannot be perceived via the senses (smell, sight, touch, taste, hearing). The “invisible enemy” leads to uncertainty and fear.



The difficulty of perceiving damaging substances, of defining them quickly and correctly and of specifying their short- und long-term impact, is characteristic of CBRN incidents. Special equipment and time are necessary to trace and define the substances. The assessment of their damaging potential is not always possible.

It is difficult to protect oneself against an “invisible unknown enemy”. That is why people who are directly affected (injured people, relatives and witnesses) as well as the population in general but also emergency response personnel and management staff might be filled with feelings of fear, uncertainty, helplessness and loss of control when confronted with CBRN incidents. It can happen that emergency response personnel arrive at the scene of the incident without knowing that they have to deal with a CBRN event. Therefore, on top of it all, they might be concerned about their own health, when they learn about the nature of the incident.

Typical stress factors during chemical incidents

- Many chemical hazardous substances are noticeable (e. g. visible gas cloud, biting smell, skin irritations, breathing problems). That is why uniformed services normally perceive chemical incidents as less threatening than radiological or biological incidents.

- Nevertheless, because of the variety of possible chemical substances, the identification of a hazardous substance or mix of hazardous substances can be difficult and time consuming.

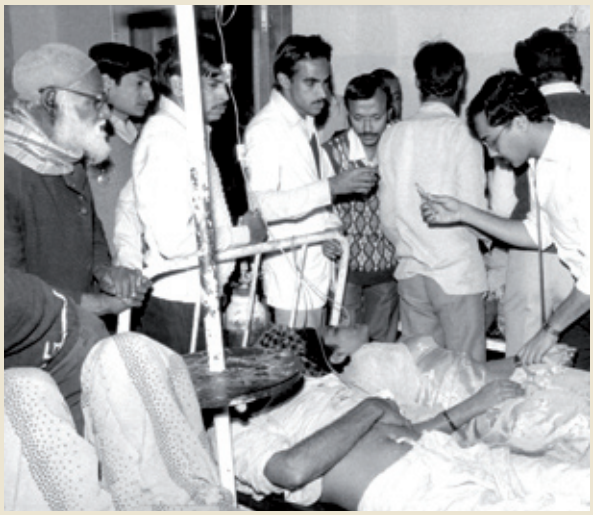
- However, often only after exact identification and quantitative determination, it becomes clear whether the contact with the released substance has a damaging effect. This situation can fill those directly affected and also the uniformed services with uncertainty and worries about their health – especially while they are waiting for the test results.

- If the genetic material is changed by the substances, the following generations can be affected.

- If the substances are carcinogenic, it is difficult to assess the individual risk of contracting cancer.

Example: Chemical incident Bhopal 1984

On 3 December 1984, after a technical breakdown at a chemical plant in India's Bhopal, several tons of the highly poisonous substance of Methylisocyanat (MIC) were released into the atmosphere. Up to 20,000 people died, the 500,000 survivors suffered from serious implications, such as damage to the eyes and blindness, chemical burns of skin and lungs, damage to the inner organs and infertility or deformities.



Example: Toxic gas attack with Sarin 1995

On 20 March 1995, the Japanese sect Aum Shinrikyo committed a toxic gas attack on an underground station in the centre of the government district in Tokyo. Due to the fact that the „home-made“ Sarin had a small degree of purity, there were “only” 12 dead people. During the hours and days after the attack, more than 5,000 people were medically treated. The ratio between physical and mental injuries corresponded to one person who was physically harmed and finally 6 – 10 people who suffered from psychological damage.

Example: Chemical incident Seveso 1976

On 10 July 1976, in a chemical factory in the region around Seveso, North Italy, a chemical accident caused the release of the highly poisonous dioxin TCDD. 1,800 ha of a densely populated area were contaminated. As a result, 190 victims suffered from chlorine acne, 70,000 animals had to be slaughtered and long-term serious damage was done to flora and fauna. Extensive decontamination work in the environment (earth, houses) and follow-up examinations of more than 200,000 persons were necessary.

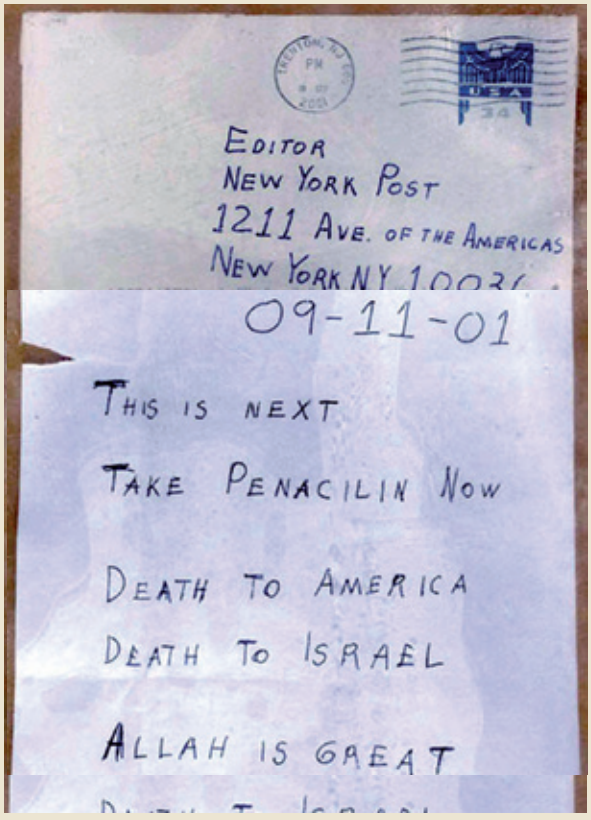
One of the reasons why work in the factory was initially continued was the fact that the danger potential of the dioxins was not yet known. Therefore, the population in the neighbourhood was only alarmed with considerably delay.

Typical stress factors during biological incidents

- As a rule, biological agents are not perceivable.
- Clear verification is only possible in a specialised laboratory. The process can take several hours or up to several days.
- Sometimes, biological agents lead to symptoms of illness only after hours or even days (incubation period). During this period, it can happen that contractible pathogens are spread unnoticed.
- If the disease is infectious and can therefore be transmitted from one person to another one, the contacts of ill people must be medically registered, supervised and, if necessary, medically treated during and after the incubation period.
- Die Behandlung kann mit einer Einschränkung der persönlichen Freiheit verbunden sein, auf die die Einzelnen und die Bevölkerung vorbereitet werden müssen (z.B. Quarantäne).
- The treatment may involve limitation of personal freedom. It is necessary to prepare the individuals and the population for such restrictions (e.g. quarantine).

Example: Anthrax-attacks 2001

In 2001, the dispatch of letters with Anthrax-spores leads to the death of five people in the USA. In the following weeks and months after the incident, many people, especially in the USA and Europe, were worried. 33% of the people in the USA said they feared to get in contact with Anthrax. 34% took preventive measures before they opened their letters. Across the world, police and health authorities registered thousands of phone calls from concerned citizens. The same reaction was shown by post office staff who claimed that the postal items showed irregularities.



Example: SARS-pandemic 2002 / 2003

The Severe Acute Respiratory Syndrome (SARS) was first observed in the Chinese province of Guangdong in November 2002. The agent of SARS is a virus which was unknown at that time.

During the years 2002 and 2003, the SARS pandemic spread within a few weeks to most continents and caused the death of almost 1,000 people within half a year.

Example: “Swine flu” 2009

The media coverage of the “swine flu” in 2009 clearly reflected some aspects of risk and crisis communication when confronted with a biological threat. Thus, controversial expert statements in the media as well as discussions concerning “two-tier vaccinations” lead to uncertainty in the population as to the necessity and potential damage of vaccinations.

Typical stress factors in radiological/nuclear incidents

- Radioactivity or ionising radiation cannot be noticed and is perceived as hardly controllable.
- However: It is possible to quickly and accurately measure radiation by using special equipment.
- To some extent, it is possible to assess the radiation exposure via the radiation dose. However, even when the radiation dose is low, long-term damage cannot be definitely excluded. At the same time, natural radioactivity is always present.
- Children and also pregnant women are particularly at risk of sustaining lasting damage to their health..
- Damage caused by radiation exposure can be delayed (by years or even decades).
- The following generations can be affected.
- It is difficult to assess the individual middle- and long-term risk of disease caused by radiation (e. g. later health restrictions, cancer or hereditary defects).

Example: Contamination by radioactive Polonium 2006

The death of the assumed former Russian agent Alexander Litwinenko was caused by Polonium-210 poisoning. After Litwinenko‘s death on 23 November 2006, British authorities confirmed that the patient’s urine contained a high concentration of this radioactive substance. Many people in London and in Hamburg reacted by expressing their fear of a possible contamination and contacted the authorities.

Example: Reactor accident Tschernobyl 1986

Due to meltdown and an explosion in the atomic reactor in Tschernobyl (Ukraine), the world-wide most serious accident since the civil use of nuclear power happened on 26 April 1986. Large amounts of radioactive material were released into the air and were mainly spread over the region north-east of Tschernobyl, but also over many regions in Europe and finally over the entire northern hemisphere. Until today contamination can be detected in many countries and regions.

The amount of deaths, caused by the accident, cannot be specified. Many children contracted thyroid tumors. In many cases, the cause of diseases is traced to the radiation as the possible cause. Furthermore, the incident had a mental, social, ecological and economic impact..

Example: Goiania 1987

On 13 September 1987 two street sweepers stole, among other things, a source holder containing C-137 from a radiation therapy facility situated in a closed down cancer clinic. They took it with them and dismantled it further. As it radiated a beautiful glow in the dark, family and friends were invited. Acute symptoms (sickness) were wrongly diagnosed. On 28 September a suspicion of radiation damage was formulated. On 30 September an examination for radiation of 112,800 people took place in a football stadium. The result was that 249 people were found contaminated. Furthermore, the incident lead to 3,500 cubic metres of contaminated waste.

In the immediate and medium term, CBRN incidents can cause a high number of mentally affected people whose behaviour can hardly be predicted.

Even if only a smaller number of people are physically injured by CBRN incidents, nevertheless, the situation remains critical as fears, uncertainty, helplessness and loss of control, caused by the confrontation with an "unknown enemy", lead to a high number of mentally affected people. Not only the people who are directly affected by the incident, but also their relatives and the immediate witnesses show stress symptoms. The mental stress goes far beyond these groups and, due to the quick distribution of information via the media or public institutions, affects many more people and groups of the population. That this is the case was proved, for example, by the catastrophe of Tschernobyl in 1986, the Sarin-attack in Tokyo in 1995, the Anthrax-attacks in the USA in 2001, the Polonium-case in Hamburg in 2006, the SARS-pandemic in 2002/2003 and the discussion concerning "swine flu" in 2009.

During the **acute phase** of an incident, the individual reactions of those who are directly affected can vary considerably. They include a calm and composed behaviour, the quiet or vehement expression of concern and desperation and hectic activity or aggressive behaviour. In any case, CBRN incidents trigger a high amount of fear. The physiological stress reactions can be taken as an indication of exposition and damage perceived by the persons concerned - a feeling which increases the fear even further. They have the comprehensible wish to be taken away from the danger zone as quickly as possible or to flee. The result can be an uncontrollable stream of people trying to escape who possibly spread the hazardous substances even further.

Furthermore, special agents or substances can cause mental symptoms such as blackouts or impaired perception and thinking. Often it is hardly possible to diagnose whether the symptoms are caused by the exposure to the substance or by the mental reaction after the incident.

Due to the concern of having been exposed to a harmful agent, even people who were not exposed to the substance can develop symptomatic physical reactions (mass sociogenic illness) and therefore address the health care systems (NATO & OTAN, 2008).

During the **weeks after the incident**, like in other complex damage situations, persons concerned normally react by showing acute stress reactions which can vary from grief due to loss, the need for social contacts and even anger and rage. The typical reaction to CBRN situations can manifest itself by experiencing an ongoing feeling of an unspecified threat and uncertainty which is triggered either by actual or anticipated contamination. The long-term consequences are incalculable (Raphael & Stevens, 2008).

In the **long-term course**, some of the affected persons can develop psychic traumatic after-effects, such as posttraumatic stress disorder, depression, anxiety or traumatic grief. According to initial empiric results, one can assume that, due to CBRN situations, the ratio of somatisation disorders is higher than in other damage situations. The worried observation of one's own body for possible signs of illness or the evaluation of stress and anxiety reactions as an indicator of a physical illness can abet such a development (Kawana, 2001; Engel et al., 2007; Raphael & Stevens, 2008).

How does the general population react?

CBRN incidents cause a lot of media coverage. Immediately after their occurrence, major incidents are comprehensively covered and distributed by the media. Quickly the whole society is affected by the news. The range of media information includes the neutral factual report as well as contributions which hype up the incident as a major disaster. It can be taken for granted that the media focuses on the dangerous substance, i.e. "the invisible enemy". The feelings of uncertainty and fear are increased by the quick public distribu-tion (special programmes, Internet forums etc.) and the numerous contradicting expert opinions.

It is difficult to predict how the population reacts to the information. Principally, however, the following points reflect reality:

- In Germany and in other European countries we live in very multi-faceted and multi-cultural societies. Therefore, it can be expected that the reactions of the population are not uniform. In fact, we have to differentiate between reactions from different groups (e. g. children, young people, old people, migrants, religious communities, social or political interest groups/ lobbyists, political representatives, media representatives etc.). The reactions will vary depending on the damage situation and on which of these groups are directly affected.

- Contrary to the prevailing opinion and the pictures distributed by the media ("disaster movies"), people show a rather social, cooperative, prudent and helpful behaviour and not a destructive one when they are confronted with major accidents or even extreme threat situations. Uncontrolled panic or even mass panic occurs only very rarely. The extent of looting during a disaster is considerably lower than expected.

- Depending on the damage, the frequent use of institutions of the health system and also of other social institutions (churches, psychosocial services, citizens' helpline/hotline etc.) is to be expected.

- The quick and comprehensive information network between the citizens, e. g. via Internets forums and telephones is highly likely. Therefore, the authorities cannot act on the assumption of distributing selected information to an uninformed population.

- Public statements from associations, organisations, political parties etc. are to be expected. They profit from the damage in order to underline their social, political or ideological positions and interests.

- Likewise the creation of special interest groups (groups for the protection of victims, protest groups etc.) as an answer to the CBRN incident is to be expected. These groups present themselves to the public in a more or less expressive way.

During all complex threat and damage situations which are covered by the media, great importance is attached to qualified risk and crisis communication (press and PR work which includes the management of operations). Against the background of wide-spread uncertainty and a high information demand on behalf of the population, risk and crisis communication which takes psychosocial aspects of crisis management into account is particularly important. It is important to abandon the widespread opinion that the population can be controlled by clever PR work. Risk and crisis communication only works interactively. Citizens react to (official) information not least because, at the same time, they catch up with the latest via numerous other sources. Therefore, qualified PR work must be sensible and comprehensible and should treat citizens as serious alliance partner..

During CBRN operations emergency response personnel services work under difficult conditions

CBRN missions are technically challenging and also put a lot of physical strain on the first responders. Often there is a lack of routine, as major missions do not happen very often and as chances to practice an emergency case are limited. Work under Personal Protective Equipment (PPE) is exhausting; orientation and communication become more difficult. Measures which normally run smoothly – including the psychological and social support of the injured and affected people – or the use of deescalation techniques become more of a struggle under PPE. Protective clothing does not only limit communication and the ability to move but also implies the concern that the PPE might be damaged.

In connection with terrorist threats and the bomb attacks on local trains in Madrid (14/03/2004) and London (07/07/2005), executed by Islamic terrorists, another issue has been recently discussed by those who are involved in missions. The so-called second attack (delayed attacks which hit the uniformed services when they arrive at the scene) has caused an increasing amount of concern, even more so as the use of a "dirty bomb" cannot be excluded.

During CBRN missions the first responders are not only challenged by the medical treatment of injured people, but also by the confrontation with a good number of worried people who, due to necessary decontamination measures, must stay in the danger zone for a long time and whose behaviour can hardly be predicted.

Because of these mission conditions, emergency response personnel are often limited in their confidence to act and insecure in their decisions. The analysis of missions, the observation and evaluation of exercises show that action strategies, which are normally successfully put into practice, are in CBRN missions less coordinated and structured than during other operations.

In the danger zone and before the decontamination, the firefighters have to rely on their own skills when it comes to the psychosocial care of the people on scene. It is not possible to consult experts in emergency pastoral spiritual guidance or crisis intervention measures as they are normally not trained for missions with Personal Protective Equipment (PPE) and protective respiratory masks.

If decontamination measures are necessary – in particular in cases of mass casualties – the emergency response personnel have to anticipate a high mental stress factor and fearful or aggressive reactions of the affected people. Their feelings of insecurity, concern, anxiety and helplessness become even worse when they see the rescue personnel in their protective clothing. Another stress factor is caused by the fact that they have to wait until the decontamination process starts. That is why the feelings of concern and anxiety can increase. It is possible that the individuals or even entire groups build up an aggressive behaviour. Furthermore, the necessity of handing over personal objects adds to the feeling of insecurity. The fact that they have to undress in public is accompanied by feelings of shame and embarrassment. Feelings such as the loss of privacy and personal vulnerability as well as ethic and moral problems can lead to massive stress reactions of the affected.

It is possible that aggressive reactions endanger the firefighters. If, at the decontamination site, e. g., a father can only be excluded from the medical care of his child by force, two to three firefighters are involved in this activity. Furthermore, additional danger can be caused when, for example, the protective clothing is damaged.

In the danger zone, the firefighters are in charge of calming down a potentially high amount of frightened, concerned and possibly aggressive people and of encouraging them to cooperate and be patient. By doing this, they have to rely on their own resources, because expert personnel from psychosocial emergency help (e. g. emergency pastors, crisis intervention team-staff) are only active in and outside the shut-off zone. They cannot be deployed in the danger zone nor before and during decontamination.

Under Personal Protective Equipment, emergency response personnel can only to some extent address the affected by relying on well-known measures of communication.

Often, little gestures, appropriate words or the adherence to simple rules of psychological first aid are enough to calm down intimidated, fearful and excited people. Thus, all emergency response personnel services know the calming effect of speaking to the affected or of discreetly keeping physical contact and of turning to them (eye-level). For emergency response personnel it is difficult to put these and other basic rules into practice, when they are wearing Personal Protective Equipment (PPE). PPE involve high physical stress, and they limit the ability to speak and move. That is why many firefighters, who are wearing PPE during a CBRN operation, refrain from familiar measures of communication. However, by doing this, they feel limited in their mission-related skills and abilities, when they deal with the affected.

Emergency response personnel are worried about the well-being of their relatives.

Because of the many uncertainty factors and ambiguities concerning the damaging substances in CBRN incidents, their impact and long-term effect, emergency response personnel are also concerned about their own health. At the same time, the well-being of partners, family members and friends has priority for them. For the emergency response personnel, a CBRN incident can involve the conflict of being bound to the scene of the incident and of wanting to look actively after loved ones.

At one glance

Psychosocial stress profile during CBRN incidents: Directly affected people, general population and emergency response personnel

1. Lacking information – missing knowledge

- Initially, the incident and the amount of released substances can be unclear for a longer time (hours or even days).
- Damaging substances cannot be perceived via the senses (biological, radiological/ nuclear) or only to some extent (chemical).
- It is difficult to control the substances.
- It is not always clear how long the effect and the damaging impact of the substances can last.

2. Insecurity and anxieties as prevailing feelings

- Fear of infirmity and death,
- Fear of damage due to the contact with other people,
- Fear for one's own health and the security of relatives and friends,
- Fear of damaging other people (biological, radiological/nuclear),
- Worries whether sufficient treatment/care possibilities are available,
- Fear of long-term effects (e. g. health limitations, irreversible physical damage, cancer, mutagenic effects).

3. Difficult mission conditions

- Extremely high physical stress,
- High technical demands,
- Due to lack of routine, insecure actions,
- Confrontation with a high number of mentally affected people among those who are directly involved,
- Confrontation with the unpredictable behaviour of the population,
- The deployment of spiritual emergency advisors, crisis intervention teams etc. in the danger zone is not possible, fire fighters must therefore assume psychological first aid,
- Limited action and communication possibilities under PPE,
- Fear of a second attack after terrorist attacks.

III. Chapter

Knowing how to act with Confidence thanks to Psychosocial Knowledge and Actions

Thanks to psychosocial and sociological knowledge and actions, the high stress potential on emergency response personnel and management staff, which CBRN incidents involve, can be efficiently mastered. In CBRN incidents psychosocial basic competence is an important basis for action. Thanks to measures which strengthen the feeling of security, show possibilities to act and which promote social bonding, the affected persons and their relatives can be calmed down during a damage incident. Panic reactions are mitigated, escalation avoided and the readiness to cooperate is considerably increased. Thus, the operations become more coordinated and predictable. Thanks to the implementation of psychosocial measures, the emergency response personnel gain a considerably expanded range of efficiency. Even in difficult and unfamiliar missions – such as CBRN incidents - emergency response personnel and management staff remain competent and confident. Confidence and possibilities to act reduce the impact of stress during operations and long-term stress-related psychosocial implications which might affect emergency response personnel. Therefore, the acquisition and training of psychosocial basic competences in CBRN incidents provide to emergency response personnel, who are deployed in CBRN prevention operations, considerable health protection and should be included in all CBRN basic training.

At one glance

Acting on the basis of psychological and sociological findings concerning CBRN missions

The correct use of psychosocial measures in CBRN missions has the following advantages:

- **Affected persons and relatives can be supported and reactions of fear and panic, which, especially during CBRN incidents jeopardise own and other people's safety, can be mitigated.**
- **Escalations can be avoided.**
- **Cooperation with the affected persons can be encouraged and thus rescue, supply and care be facilitated.**
- **Mission processes become more coordinated, structured and predictable.**
- **Emergency response personnel perceive themselves as competent and confident to act when they deal with the affected persons. This is even true when CBRN incidents are difficult and unfamiliar. Sticking to the acquired skills and confidence reduces stress during CBRN operations and prevents the development of long-term emotional stress reactions.**

IV. Chapter

Recommended Procedures for the CBRN Mission

The following recommendations for emergency response personnel in CBRN operations were put together on the basis of comprehensive literature research of national and international literature about recommended procedures in CBRN missions, many talks with emergency response personnel and management staff in CBRN protection, the professional exchange within the BBK expert group and based on experiences with the training about the topic "Psychosocial crisis management in CBRN incidents" at the Academy for Crisis Management, Emergency Planning and Civil Protection (AKNZ) of BBK.

Attention:
The appropriate medical care of injured people has always highest priority and therefore always priority before psychosocial support.

1. Generously close off the area!

When a vast number of people are contaminated, it is particularly challenging to keep them on the site of the damage, to prevent the uncontrolled removal of contaminated persons and to prepare the people for waiting time. As a rule, mass panic happens only rarely and if so only under special circumstances. Panic reactions most likely happen when people feel threatened and do not have a lot of space, a fact which limits the possibilities to escape and move. The personal and/or spatial feeling of being "trapped" (picture 1) of people who feel threatened triggers panic and aggressive reactions. Exercises and training situations are proof of such behaviour.

That is why it is recommendable to close off and limit the area as generously as possible and to allow for enough "free moving space" for the people. It is easier to dissolve the movement of bigger groups of people when the emergency response personnel (EK) mingle with the affected people (B) to split up the crowds in smaller groups (picture 2).

Attention:
The safety of the emergency response personnel has priority. When an uncontrollable movement of crowds takes place, self-protection has top priority and distance to the crowds has to be established.

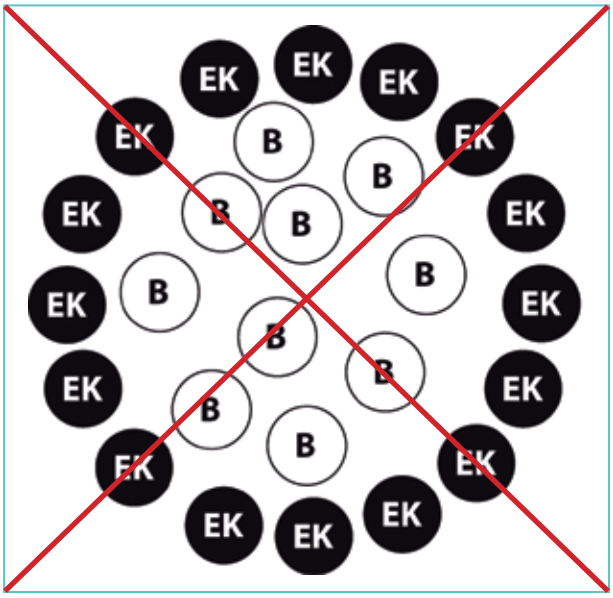


Abb. 1

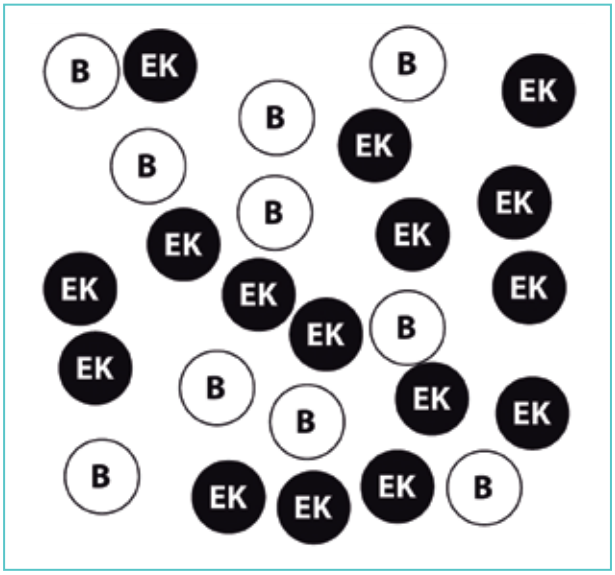
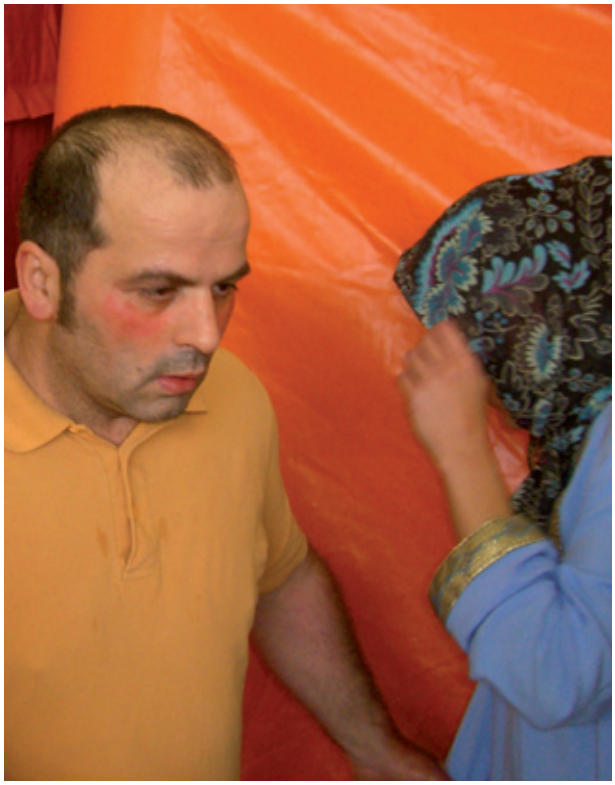


Abb. 2

2. Prepare the people for the decontamination!

In complex CBRN incidents with a huge number of contaminated people, it is necessary to prepare the waiting people for the decontamination.



The following steps are recommendable:

- Depending on the situation and the weather, ask the potentially contaminated persons to take off their outerwear in order to avoid incorporation and further spreading of the contamination. Inform the affected persons well in advance of these operations. Explain the protective impact of the measures. This alone can have a calming effect.

- Inform the affected persons with the help of pictograms and written information about the reason for the procedure, the course and the effect of the decontamination. It is necessary to put together the information beforehand and to practice the measures in exercises.

- Generously close off the area around the decontamination site and screen it sufficiently from view to allow for enough privacy, when the affected persons take off their clothing before the decontamination measures start.

- Should it be necessary to decontaminate for example Muslim female citizens, this could become difficult due to cultural and religious commandments: They are not allowed to take off their clothes in public. In such a case, there are several possibilities to act:

  1) You can refer to the central legal principle of the Islam “Necessity breaks the commandment”: In emergency cases, Muslims are entitled to actions which are normally forbidden.

  2) Obtain support and permission to undress from the male companion of the Muslim woman. Preferably, address a respected member of the family or of the group (e.g. the oldest male member of the family).

  3) If possible, make sure that the psychosocial personnel (emergency spiritual advisors, crisis intervention teams) arrange for the presence of a religious respected person (Iman) in the closed off area.

However: The time spent to convince people who refuse decontamination measures must not go at the expense of affected persons who are willing to be decontaminated.

3. If possible, leave the groups together!

As a rule, groups of people who belong together (families, friends, colleagues etc.) have a calming effect on each other and look after each other in a threat situation. Thus, emergency response personnel are considerably relieved.

For the distribution of information and behaviour guidelines, it is useful when the emergency response personnel choose a "group leader" (alpha-personality) and inform him accordingly. The "group leader" is commissioned to pass on information and behaviour guidelines to the others and to support their implementation.

It is problematical to separate unharmed but contaminated family members from injured relatives. The separation of parents and children is particularly difficult. In case of longer waiting time, it is recommendable to allow a relative to be present at the point where the injured people are assembled until medical first aid and decontamination measures are started. If affected people have to be separated for decontamination, the unharmed relatives are explained where they can later find their partner, their child, parents, their friend etc.

If possible, children should be accompanied by one unharmed parent or another accompanying person while decontamination takes place. For children, who have to be separated from their (injured) parents, it is absolutely necessary to provide a permanent companion. This need not be operational personnel but can also be done by an affected person.

If people in groups reinforce each other in their aggressive behaviour, it makes sense to separate them. Address the individuals directly and also by referring to visible attributes ("You with the red jumper"). Also try to motivate these people to cooperate ("Could you help me please?"). Such a method is more successful than speaking or giving directions to the entire group.

4. Delegate tasks to people who are able to fulfill them!

Especially in CBRN incidents, the emergency response personnel is deeply involved in coping with tactical operation work. Confronted with a huge number of contaminated people in the danger zone, the mental demands of the affected persons (for a contact person, information etc.) can overtax the emergency response personnel. You should by all means profit from the social competence of the citizens! It is helpful to directly address individuals and to assign tasks to them.

The following tasks are possible: To stay with and look after a person, to explain the further procedures and their development to people, to distribute information material. Thus, affected people, who are able to do so, can support others in a calming way. Often there is the concern to overtax the affected persons, who are on the site of the incident, by asking them to help.

However, as a rule, the opposite is the case. To have a concrete task and to be still able to act has a mentally stabilising and calming effect. The time, which emergency response personnel have to invest in instructing individual people, is, thanks to the delegation of tasks, significantly recompensed.

5. Implement the basic rules of psychological first aid even when wearing PPE!

In a CBRN incident too, the basic rules of psychological first aid must be followed (Lasogga & Gasch, 1997). However, emergency response personnel implement psychosocial measures less frequently when they are wearing Personal Protective Equipment. The following recommended actions reflect general rules of psychological first aid. During the preparation for special damage incidents, it is imperative to practice these measures while Personal Protective Equipment is worn.

Attention:
The exposure of emergency response personnel to released dangerous substances while they look after potentially contaminated people must be prevented. Psychological first aid must not lead to any danger.

At one glance

Basic rules of psychological first aid administered by emergency response personnel

- Tell the affected persons that you are present, who you are and what is going on!
- Talk, keep up the conversation, listen “actively”!
- Screen the patient from onlookers!
- Discreetly seek / offer body contact (hand, arm, shoulder)!
- Strengthen the patient’s feeling of being an efficient partner, assign simple tasks to him!
- Give information about injuries and further measures in a comprehensible language!
- Do not lie to the patient!
- Tell him that everything that is humanly possible is done!
- If possible, involve relatives!
- Tell the patient when you have to leave him!

What you should never do!

- Criticise,
- Make accusations,
- Express alarming assessments or diagnoses,
- Discuss reasons for the incident,
- Trivialise what is happening.

Talk to the people concerned who are in the danger zone! This is even possible when you are wearing Personal Protective Equipment!

Operations and exercises show that emergency response personnel who are wearing PPE talk considerably less with the affected persons than in other missions. This is understandable because it is strenuous to speak – especially when heavy breathing protection is worn. Furthermore, the emergency response personnel perceive their own voices as distorted. The affected persons perceive the voices of the emergency response personnel as more silent and inarticulate. Nevertheless, even under PPE direct address is an essential means of reassurance. In this context, priority is given to information about the situation and expected measures. Initially, emergency response personnel under Personal Protective Equipment seem to be very threatening to the people on scene. The direct address, however, – even in a few simple words – allow the contact to the people "behind the mask". Even when the affected persons do not understand every word, the address reduces the feeling of anxiety..

Profit from body language and gestures in order to implement directives and measures!

Under PPE the possibilities to communicate through language are exhausting and limited. Therefore, it is particularly important to use body language in a clear and precise way to contact the affected person and to implement the measures. Even under PPE, body contact has a calming and corrective effect.

The following steps are recommended:

- To accompany instructions by directly "guiding" the people,
- To clarify statements by gestures,
- If possible, to use the same level as the affected when the contact is established.

Inform the people on the scene promptly and truthfully!

To inform the people is a central cornerstone of the psychological support during a CBRN incident. Information is one of the essential means of reassurance and of improving cooperation. It is important to pass on the information promptly, directly and truthfully. During a CBRN incident, the people concerned are particularly interested in the following information: The potential danger to their own health and their relatives caused by released substances, background knowledge about the introduced measures, protection measures, anticipated waiting time. At the beginning of an incident it is not always possible to have all necessary information available. If certain information is not (yet) available, this fact should also be communicated in a truthful way. Naturally, the endeavour to find the information as quickly as possible should then be underlined. It is always better to quickly communicate even incomplete information than no information. If there is only incomplete information available, focus on the fact that this is the current state of information which can change. You should also inform the people when further information can be expected. Communicate information by profiting from all possible means: Direct address, prepared pictograms, written information, loud speakers, media etc. Information should be clearly and concisely phrased, as people under extreme stress conditions can only take in a limited amount of information at the same time. For the same reason, it is helpful to repeat information several times. You should by all means avoid generalisations, playing down and trivialising the situation and commonplace. However, you should also avoid the escalation of the situation by hasty dramatising.

At one glance

Prompt and truthful information as the central cornerstone of psychological first aid

- Give the people concerned a survey about the state of affairs and the situation.

  “Due to an accident, a chemical was released. Our test vehicle has already been alarmed and will arrive in about 20 minutes. As soon as we have the first test results, we will inform you.”

  „Our emergency response personnel work under Personal Protective Equipment in order to be able to access the site of the damage and to assure the best protection for the emergency response personnel.”

- Communicate which steps are taken in order to improve the situation and refer to the whole purpose of some of the measures.

  „Take off your jackets and sweaters and place them at the collecting point. By doing this, you remove a good amount of the dangerous substance.“

  „We are setting up a big tent. There we will give you a warm shower in order to remove what is left of the hazardous substance. Afterwards, you will be provided with replacement clothes.“

  „After having had a shower, you are safe. Please go directly to the marked collecting point then. There our colleagues will further support you.“

  „After the shower you will be examined by doctors and treated, if necessary.“

- Give clear and repeated instructions in order to assure that the people are able to implement them accordingly, e. g. if they have to wait or be evacuated.

  „We now start to give you a shower to remove the dangerous substance. We will give you a shower as quickly as possible. Please stay in front of the tent while you wait for your turn. Do not leave this area. Everybody must undergo this necessary protective measure.“

- Use positive statements, such as “You are safe”, avoid negative words such as “danger” or “anxiety”.

  „You are safe here”, “We will get you where you are safe”, but not: “Here you are out of danger“or “You need not be afraid here.“

6. In the event of death, allow relatives to say goodbye!

Whether contaminated relatives, who are also in the danger zone, should be granted to say goodbye to the deceased, has been controversially discussed. Emergency response personnel argue that contaminated people who are able to walk should be decontaminated as quickly as possible. Furthermore, it is argued that highly contaminated relatives, who are at the collecting point for the dead, unnecessarily hinder the operations.

Please consider: During a CBRN incident, it is normally not possible for decontaminated relatives to say goodbye to the deceased. If at all, deceased are only decontaminated when, due to police investigations, a post mortem is necessary. Otherwise, deceased are taken from the danger zone in a tightly locked container. However, active farewell and a "last gaze or touch" can help considerably to understand and accept the death of a close person.

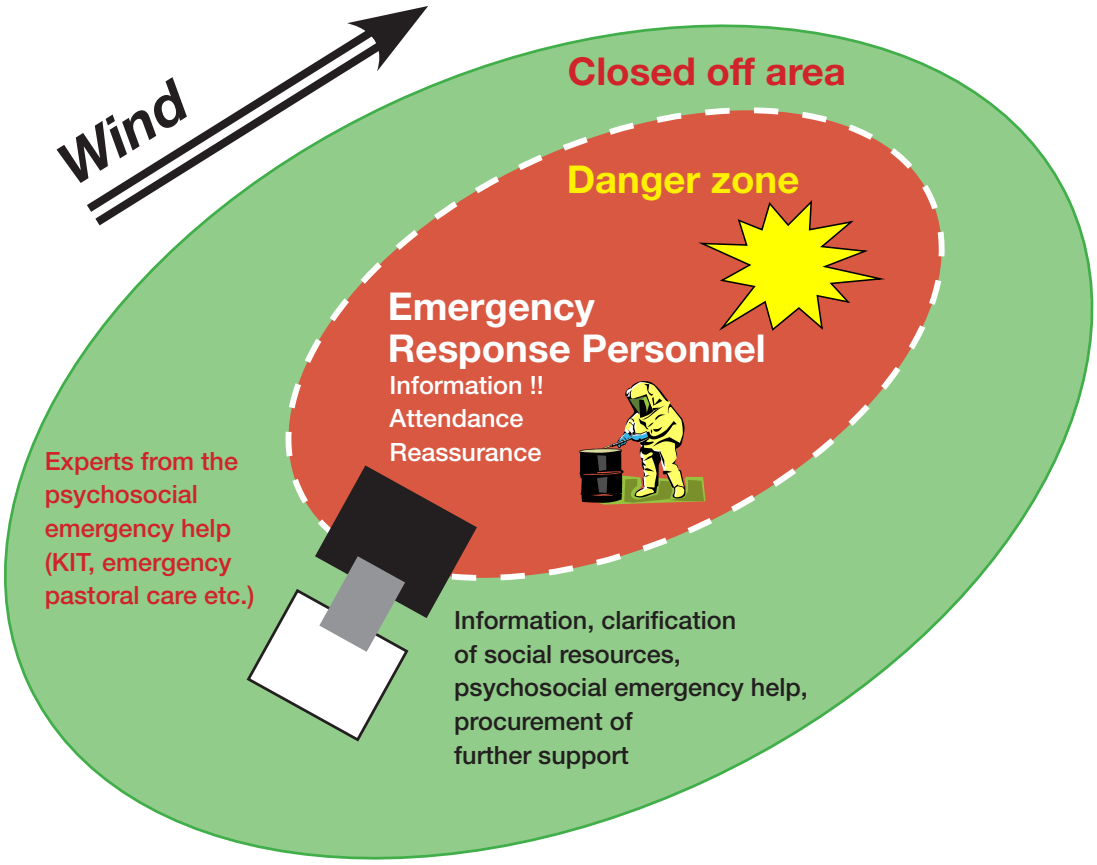
Recommendation: When medical aspects justify it, people should be granted to say their farewell to deceased relatives. When a huge number of people are contaminated, the people concerned have to stay in the danger zone for a longer time anyway. The problem is that it is normally not possible to allow psychosocial emergency personnel (such as emergency spiritual advisors, crisis intervention teams) to accompany the farewell during a CBRN incident. Preferably, the people concerned should be enabled to stay with their dying relatives. If emergency response personnel have to separate them from a dying relative, they should anticipate strong emotional reactions or, as the case may be, massive, even physical resistance.

7. Prepare the people concerned for further support in the closed off area!

To provide psychological first aid in the danger zone is only in the remit of emergency response personnel who are CBRN qualified.

However: Even during a CBRN incident, it is important and helpful to assign psychosocial emergency personnel (emergency spiritual advisors, crisis intervention teams, emergency psychologists) to a mission in the closed off area. The knowledge about the availability of psychosocial emergency personnel in the closed off area and the announcement that these will see to any other tasks (e. g. the search for relatives, clarification concerning provision or accommodation), have a calming effect on the people in the danger zone. The prompt alarm of specially qualified psychosocial emergency personnel for the care of the affected people in the closed off area also relieves the emergency response personnel in the danger zone, because they can offer a prospect to the people by referring to the available support after decontamination. Furthermore, it is recommendable to set up an information point for waiting relatives and witnesses which is located outside the closed off area. The care of relatives, who wait outside the closed off area, is important so that they do not hinder operations and jeopardise themselves or others.

CBRN incident
Delimitation of the functional sectors
according to FwDV 500




Dräger

V. Chapter

Psychosocial Aspects of Risk and Crisis Communication in CBRN Situations

The prompt, truthful and comprehensive information of the affected people and the general population is one of the most important measures of active crisis management, including CBRN incidents. In our modern media society and the age of web 2.0 one cannot assume any more that information about the crisis staff and the PR work of the ministries can be passed on to the population in a controlled and regulated way.

Especially during CBRN incidents, which imply a high degree of uncertainty for those affected and the population, expert information about the situation and the threat potential as well as clear options for actions must be quickly communicated in a generally understandable way. Information which is right from the start transparent and truthful supports the restoration of relative security and strengthens the experience of individual and collective efficiency thanks to the improvement of self-help and self-protection competences within the population (Hobfall et al., 2007).

Risk and crisis communication must be prepared and practiced

- **Experts:** During the preparation for CBRN incidents, it is a good idea to network right from the start with experts from responsible institutions and expert authorities (e.g. Federal Office of Civil Protection and Disaster Assistance, Federal Office for Radiation Protection, Robert-Koch Institute) in order to be quickly able to generate the necessary expert information, if an incident occurs.

- **Set-up of a hotline:** Due to the anticipated information demand of the population, a high volume of calls at the various authorities is to be expected. The prompt creation of a central hotline makes sense. The structural preparation and training of suitable employees to be assigned to a crisis hotline is necessary to allow the implementation of such a hotline.

- **Preparation of FAQ's:** It is advisable to prepare in advance selected answers to questions which might be asked during CBRN situations. However, due to the complexity of possible incidents and the variety of topics, it is not possible to formulate questions and answers for every incident.

- **Training:** Qualified risk and crisis communication including all levels must be tested and practiced beforehand.

At one glance

Risk and crisis communication of crisis staff and politically responsible persons

- The population must have confidence in the source of the information and acknowledge it.
- Information must be targeted and clear, openness and transparency are necessary.
- If possible, information should not be held back.
- Information gaps should be openly revealed. It should be communicated when further information is to be expected.
- Damage extent and threat potential should not be trivialised.
- A one voice policy should be aimed at.
- Information and behaviour guidelines must be understandable, concrete and clear. Target-group-oriented, they should be adapted to the receiver.
- The duration of sequences for information supply should be short (3 – 5 minutes).
- Chosen experts should be involved in the processing and distribution of information.
- Politically responsible persons are expected to be able to communicate sympathy and empathy.
- Press offices should actively approach the media in order to distribute adequate information quickly and target-oriented.
- Information and behaviour guidelines should be target-oriented and distributed via all available media (television, radio, Internet).
- Information and behaviour guidelines should be available in several languages.
- Prepared FAQs should be used and incident-specific FAQs by cooperating with experts be developed.
- As quickly as possible, a central hotline should be activated. During large-scale damage situations, a central information centre should be established.
- The involvement of a "media observer/management assistant media" is recommendable. This person can conduct a thorough assessment of the picture as it is conveyed by the media. The expert can also carry out an evaluation of the negative development of the news coverage to develop corrective counteractive measures.

VI. Chapter

Aftercare after Distressing CBRN Missions

Besides a good psychosocial preparation of the operations, mentally stressful operations necessitate thorough mission aftercare. After stressful CBRN missions (e. g. confrontation with severely injured people, injured children, injured colleagues or a huge number of injured people during a CBRN incident), it should therefore become standard to provide mission aftercare, such as group and individual talks offered e.g. by peers, spiritual advisors from the deployed organisations (e. g. fire brigade, police, military) and mission aftercare teams.

During CBRN missions an insight into the situation provided by experts is also necessary, as the information requirements of the emergency response personnel are particularly high.

For the group meeting after the mission it is particularly important to include medical experts. They must be specifically qualified in order to be able to assess the health risks after exposure to chemical, biological or radioactive substances.

In addition to the aftercare in groups, for each member of the emergency response organisations, who participates in the operation, the individual contact with a medical expert should be made possible. The individual contacts make it easier for the emergency response personnel to broach the issue of possible concerns about health matters. It is not relevant whether there was an "objective" exposure to danger or not. Especially when this is perhaps not the case, it is particularly difficult for emergency response personnel to refer to such concerns.

The concern about subsequent damage after the contact with chemical, biological or radioactive substances does not necessarily evolve immediately but it is possible that it is gradually "hatched". Thus, even in the weeks and months after the operations, physical pains, for example headaches, sickness, and skin irritations, can trigger concerns that the pain was caused by the dangerous substance.

Therefore it is not sufficient to provide only mission aftercare directly after the CBRN operation. In fact it is recommendable to include individual talks after the mission and the provision of information into middle-term and long-term aftercare. For both tasks qualified medical experts should be deployed.

It is the special remit of the management to introduce this form of psychosocial care after CBRN missions. It is also important to refer the emergency response personnel to further support, such as the company's medical service or the medical service and psychosocial contact persons, such as the legal accident insurance agency.

VII. Chapter

Recommendations to Incident Commanders concerning the Preparation of Missions

Managers in leading positions have a key role both in the provision and approval of mission aftercare. Naturally, this also applies to the preparation of the mission. Whether psychosocial knowledge as the basis for recommended procedures and skills and abilities is acknowledged, learnt and practiced, depends, to a large extent, on the question whether the managers are open to such an approach.

During the preparation for CBRN missions, the following steps are recommended:

1. The systematic training of the emergency response personnel in aspects of psychosocial crisis management during CBRN incidents,
2. The preparation of information material for the affected persons on the site of the incident and for those who wait outside the closed off area,
3. The preparation of the structural inclusion and alarm of psychosocial emergency response personnel in the closed off area and the inclusion into exercise scenarios,
4. The provision of specialised mission aftercare with medical experts.

1. Training for emergency response personnel in CBRN protection concerning aspects of psychosocial crisis management in CBRN incidents

The training of qualified operational personnel in CBRN protection pursues the following aims:

The overall aim of the training is to strengthen the confidence to act and the skills and abilities of emergency response personnel who are confronted with exceptional situations and work under difficult conditions.

Hence there are the following sub-goals:

- To be made aware of the particular stress factors of a CBRN incident,
- The preparation for reactions of affected people and the population during a CBRN incident,
- The strengthening of psychosocial basic competence, incl. basic rules concerning the provision of information in order to promote the confidence to act and skills and abilities,
- Confidence in information management (above all for incident commanders in leading positions),
- Reduction of stress and pressure caused by the operation thanks to more confidence to act and the improvement of situational support-efficacy and self-efficacy,
- To become aware of stress reactions and the provision of competence for stress management, self-regulation and self-reassurance,
- To strengthen the motivation to profit from careful and sometimes also medical aftercare and from psychosocial offer of care.

The training concerning aspects of psychosocial crisis management for emergency response personnel in CBRN protection include the following contents:

- Information about possible stress factors in CBRN incidents,
- Information about the behaviour of human beings during biological, chemical and radiological incidents,
- Competence in psychological first aid for people concerned (also under PPE). Here practice is obligatory!
- Basic competence concerning the handling of psychological phenomena affecting groups among the population and the affected persons (panic prevention/ panic reduction/ flight behaviour). This has to be practiced!
- Guidelines for risk and crisis communication: Preparation for the multiplier function concerning the information of the population – provision of information and information management,
- Information about possible stress reactions and appropriate self-regulating mechanisms,
- Information about appropriate medical and psychosocial aftercare.

2. Preparation of information material for affected persons on the site of the damage and their relatives

The availability of prepared information for affected persons in the danger zone relieves the emergency response personnel and considerably supports the course of action. Furthermore, it asks the affected persons to become familiar with the situation and the course of events. The information must be phrased in a clear, concise and understandable way. The preparation of information material in several languages (according to the region, for example in Turkish, Russian, and English) would be an asset. Above all, the following material must be prepared for a CBRN incident:

- Pictograms concerning decontamination,
- Written information material about decontamination (development and purpose of the measure),
- Clear sign-posting and marking of the different sections of the operation, above all the delineation to the immediate danger zone, zones in the cut off area such as the waiting area, collecting points etc., and signposts after the decontamination,
- Hints concerning the procedure after decontamination (medical and psychosocial care in the cut off area).

3. Preparation of the structural inclusion and alarm of psychosocial emergency personnel (emergency spiritual guidance, crisis intervention teams, emergency psychologists) in the cut off area and the inclusion into exercise scenarios

During the preparation of CBRN operations, it makes sense to introduce the available forces of the psychosocial emergency care to the special course and segments of the mission. By doing this, psychosocial emergency personnel can be deployed in the cut off area without hindering the course of the mission and without jeopardising themselves and others.

It should be discussed in future whether it is helpful to enable declared personnel from emergency spiritual guidance and crisis intervention teams to work under PPE. Besides the training, such a step would possibly also include the determination of physical fitness. If there is a great number of contaminated people, these specially qualified psychosocial emergency personnel could look after the affected people directly in the waiting area before decontamination and thus considerably contribute to their reassurance and willingness to wait. Furthermore, they could accompany processes of farewell.

The contents of the training for psychosocial emergency personnel, who qualify for missions in CBRN incidents, include:

- Information about the threat potential of chemical, biological and radioactive dangerous substances,
- Information concerning the appropriate protection of oneself and others,
- Information about appropriate medical aftercare,
- Structures, course and segments of operations during CBRN incidents,
- Situation of the personnel under PPE,
- Information about the behaviour of affected people during biological, chemical and radiological incidents,
- Provision of information to the affected people during CBRN incidents after decontamination and to waiting relatives and witnesses outside the cut off area,
- Perhaps introduction to and exercise of the mission under PPE.

4. Provision of specialised mission aftercare

As discussed above, emergency response personnel have an increased information demand over a longer period of time after having completed a CBRN operation. That is why it is recommendable that the incident commander

- consults special experts from the disciplines of biology, chemistry, radiology and medicine as contact persons for queries. Over a longer period of time, these experts should be available to the emergency response personnel as contact persons,
- promotes the self-image concerning bio monitoring.

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