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ARTIFICIAL INTELLIGENCE ETHICAL COMMAND DILEMMAS

Italian avalanche response; Public communications during London terrorist attack; IEDs in Iraq; Evolutions in medicine, a tactical medic's perspective; Virtual reality; Scanning risk landscape horizons; Role of lawyers in a crisis; Drones & robotics; Disaster epidemiology; Climate change & security; EENA & Waze pilot project

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Editor in Chief

Emily Hough emily@crisis-response.com

Chief Scientific Editor

lan Portelli, PhD, BCDM ian@crisis-response.com

Sales & Marketing Director

Kirsty McKinlay-Stewart kirsty@crisis-response.com

Global Operations Director

David Stewart david @crisis-response.com

Design & Production

Chris Pettican chris@crisis-response.com

Subscriptions & Administration

Thomas Morgan subs@crisis-response.com

Subscriptions

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subs@crisis-response.com

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backissues@crisis-response.com

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comment

ince the publication of our last issue in December 2016, exciting changes have taken place. I am delighted to be able to inform readers one of the owners of CRJ.



The new ownership of *CRJ* brings a fresh dynamism and outlook, ensuring that we maintain our position as the foremost international, multidisciplinary platform 90 for practitioners, academics and all other individuals and organisations that are involved in crisis preparedness, planning and response.

We have ambitious plans for the future and there will be constant updates on what we are doing via the CRJ website. Twitter feed. Linkedin Group and our monthly e-newsletter.

In addition to publishing CRJ, Crisis 92 Management Ltd provides a wide range of services across the crisis management and resilience arena, including consultancy and training services - bringing the talents of some of the finest and most respected experts across the globe to this endeavour.

The future for *CRJ* is a positive evolution 97 rather than a dramatic change, and we want our community to help shape that change. We have started this process with a slight tweak in terms of the publication's format and size, which have been redesigned so that we can include even more information within our pages.

You will find the content and scope are as wide-ranging as ever - from reports on the avalanche tragedy in Italy (p12) and the London terrorist attack (p16), to horizonscanning articles on the threat landscape (p48) and climate change and security (p44). We discuss technology innovations in the form of virtual reality (pages 30, 34 and 68) and look at resilience more generally with a host of other articles.

The most vital element of the CRJ remains its community - our global readers, advertisers, authors and Editorial Advisory Panel – and we are committed to making sure that the quality and relevance of our content are maintained and developed even further.

The new team has already been out and about at various shows and events around the world and hope to meet many, many more of you over the coming months.

Emily Hough







Psychosocial preparedness: Soft skills in disasters

Belinda Ekornås and Nils Petter Reinholdt describe the features of their work in psychosocial preparedness, including a new learning portal and lessons learnt from the interdisciplinary collaboration involved

fter the devastating terrorist acts in Oslo and Utoya in 2011, the Norwegian Parliament ordered a formal evaluation. The Gjørv Report (NOU 2012) revealed serious shortfalls in Norway's emergency preparedness and ability to avert threats, underlining the importance of psychosocial preparedness training in municipalities and police districts. The commission stated that care for those affected and their next of kin should be organised within the framework of an information and support centre. In order to implement this strategy, it recommended joint exercises with the participation of municipalities, police, hospitals and relevant first responders.

This point was further emphasised by the evaluation

The aim of the project has been to embed psychosocial preparedness in a way that harnesses innovative technology, so as to help all those who might be affected by a crisis or disaster

report conducted by the Norwegian Directorate of Health, which said: "Emergency preparedness plans for the services must be more comprehensive in the psychosocial field, regularly practised, and include all those expected to play a role."

As a response to these reports, an extensive effort was launched to improve the quality of crisis intervention and prevention.

The Regional Centres - Violence, Trauma and Suicide Prevention (RVTS) were assigned to provide competence to personnel working with crises and disasters. The National Health Emergency Plan (2014) states that RVTS should contribute to integrated emergency services, as well as preparations for the prevention and management of health consequences from incidents, including accidents, emergencies and disasters.

This led RVTS East in Oslo to prioritise the psychosocial safeguarding of those affected by crises and disasters. This perspective is included in all of its educational activities, training and full-scale exercises. It has also embedded psychosocial preparedness in developing new methods that harness innovative technology, such as the development of a web-based educational portal.

Based on existing research and experience, Hobfoll

and colleagues (2007) proposed the following principles to prevent adverse psychological effects after disasters: Promote safety; calm and reduce physiological activation; increase belief in individual and collective efficacy (self-efficacy); promote social support and solidarity; and create hope and faith for the future.

These principles are essential in all psychosocial care and are integrated in RVTS East measures. Its work in psychosocial preparedness is further guided by the principle that affected people are displaying normal reactions to an extraordinary situation.

This line of thought brought about a need to move away from the tradition of symptom checklists and 'to do' lists. Instead, RVTS East chose to collaborate with a professional film company to increase and enrich the learning experience and show the importance of strategies that enhance resilience in crises through the dissemination of knowledge. This collaboration made it possible to present realistic scenarios and tell case stories relevant to professionals working in the field of psychosocial preparedness.

As an answer to the call from the Norwegian Department of Health, RVTS East took on the challenge of creating a learning tool that could be useful, practical and provide new insights in this field.

Our goal was not to make vet another list of what 'to do' or 'not to do' when terror or disaster strikes. Instead, the tool provides strategies to address psychosocial effects and useful interventions, rather than procedures.

Furthermore, we wanted to include all the areas of psychosocial preparedness and address organisational, family, and individual perspectives. RVTS East decided to meet these challenges by developing an interactive, practical web toolbox for psychosocial preparedness; this can be found at psbs.no.

The web toolbox covers: Crisis interventions and disaster preparedness; challenges before, during and after deployment for military personnel and humanitarian workers; along with terrorism and prevention of radicalisation and violent extremism. The web toolbox also includes a family and child perspective, as well as an organisational perspective, in all areas that the learning portal covers.

The portal's overall aim is to present updated knowledge in a practical and tool-based way that is applicable to a wide range of professionals working in this field, including professionals within the health sector, first responders - both civilian and military - municipalities and other target groups.

Our experience from the multidisciplinary work involved in creating learning films and exercises was that this heightens creativity by challenging implicit rigid ways of understanding knowledge dissemination.

Moreover, it has avoided the fear of some professionals that 'popularisation' of knowledge implies a loss of complexity. For example, when using the web toolbox in education and supervision, our experience is that straightforward and communicative texts and creative visual solutions evoke professionals' curiosity and eagerness to learn more. The films, photos, and animations allow complex issues to be visualised and make it easier to convey the subjective experiences of the helpers, those affected and their families.

Furthermore, the use of profiles, cases and storytelling combined with text, lends strength to the narrative. Including films that portray the experiences of first-hand

survivors or caregivers activates an emotional response, thus increasing identification and insight for users.

RVTS East's guiding principle for organising psychosocial preparedness in disasters is that mastering this subject on an individual level requires organisations to have plans, training and leadership directed towards crisis and disaster management.

Stress management is a central topic in psychosocial care and is included in all our education efforts and throughout the web toolbox. This is, of course, important for people affected by such incidents, as they need strategies to handle the stress brought on by the situation. Professionals also face an enormous strain, both directly from interacting with people in crisis, but also from the pressure to make decisions and take actions within limited timeframes and with sparse information.

Strategies

Our aim is to convey strategies that will help professionals go from 'fight and flight' mode to more emotional control and better decision-making.

For this purpose, RVTS East has translated and included the 'Highres' app in our education programmes, and in the web toolbox to enhance stress management (the app was developed by the Phoenix National Centre for Excellence in Post-traumatic Mental Health, for the Australian Defence).

The guiding principle for the app is resilience, which includes the ability to adapt to change, maintain a level of performance under stress, and to use flexible coping styles and adaptive behaviours. In order to be resilient in adverse circumstances it is important to learn to test, adjust and optimise:

- Test are your reactions the best under the circumstances?
- Adjust identify what is possible to change in the current situation, and then change it. Accept the things that you cannot change, and focus your attention towards what you can change.
- Optimise this is done through training, which involves learning better ways to manage your responses by training and learning new strategies. In order to take emotional control in a crisis you need to stop, breathe, think, and then do.

Our aim is to combine communication, technology and knowledge to interact and inspire each other. We developed the web toolbox, not only to answer the call for improving evidence-based crisis and disaster management, but as a stand-alone creative and novel product, which challenges the tradition and predictability of the professional discourse.

■ The portal is now available in English; go to the website psbs.no

■ Gjørv, Alexandra Bech; 22. juli-kommisjonen (2012): Rapport fra 22. juli-kommisjonen, Norges offentlige utredninger, 2012:14. Oslo: Departementenes servicesenter Informasjonsforvaltning. ISBN 978-82-583-1148-2:

Norwegian Directorate of Health (2012): Learning for better emergency preparedness – The medical response to the terrorist incidents of 22 July 2011, Oslo, ISBN 978-82-8081-256-8; ■ Hobfoll, S E, Watson, P, Bell, C C, Bryant, R A, Brymer, Friedman, M J et al (2007): Five essential elements of immediate and mid-term mass trauma intervention, Empirical evidence. Psychiatry, 70, 283-315. doi: 10.1521/psyc.2007.70.4.283

Authors



Norway, and has contributed on. and published articles in international journals. Currently she works as a special advisor in The Regional Centres - Violence. Trauma and Suicide Prevention



from University of Oslo. He has worked with crisis intervention and disaster management at local, regional and national level in Norway for the past 20 years, including in a wide range of follow-up activities after the terror acts in Norway, 2011. He led the Norwegian Action plan for Suicide

Prevention before he became head

Preparedness at RVTS East, Oslo

of the team for Psychosocial





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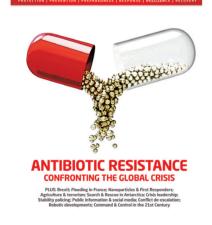
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