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Researching communication and communicating research in Health EDRM

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4.11.1 Learning objectives

To understand the key factors to consider in evaluating and researching emergency risk communication programmes, including:

1. Specific objectives of communication before during and after disasters.
2. Particular challenges and opportunities in Health EDRM communication research.
3. Techniques used in measuring behavioural change inspired by communication programmes.
4. Key principles of quality communication – all of which require further research.

4.11.2 Introduction

At the third session of the United Nations International Strategy for Disaster Reduction (UNISDR) Global Platform in 2011, UN Secretary General Ban Ki Moon noted that success is measured by what does not occur — the school that did not collapse; the building that did not fall; the village that was not destroyed (1). However, the data that are routinely available in Health EDRM research – usually from governments – tend to measure failure: death, destruction and economic loss. This presents a particularly difficult challenge for researchers of communication in disaster risk.

Although it may be reasonably straightforward for an engineer to attribute the survival of buildings to earthquake resilience strengthening, it is much more difficult to attribute human survival in an earthquake to understanding of (and giving effect to) the 'Drop, Cover and Hold' message, for example (2). Public health practitioners are familiar with this conundrum.

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They know that measuring interventional practice is easy, but that measuring the success of a preventive programme is always difficult, particularly where human behaviour is involved — and even more so in the case of hazards that occur infrequently. Success is measured by the absence of poor outcomes, but only when a hazard was manifest and risk was minimized. Measuring the absence of an outcome is challenging, particularly when the risk minimization is in the form of a behavioural change made as a consequence of a communication programme. For example, it may be impossible to determine how many cases of enteric disease were prevented by people following advice to wash their hands properly, how many cases of electrocution were prevented by people heeding the message to avoid downed powerlines during a storm, or how many lives were saved by people heading to higher ground on receipt of a tsunami warning.

Communication is one of five key elements of a resilient community, with the others being risk awareness, adaptability, learning and social capital (3). Not only is communication within a community part of resilience in itself, but high-quality communication programmes can also be used to develop the other key aspects of resilience. Communication programmes that identify hazards, quantify risks and convey how to manage them, ideally resulting in population wide-behavioural change, are an essential component of Health EDRM.

Programmes that support communication among experts and general populations can deepen people's understanding of hazards, quantify risks, give guidance on how to manage them, prompt discussions about what can be done at different levels of society and motivate action. They can identify secondary complications of a disaster and ameliorate the psychosocial sequelae of a disaster for months or years afterwards.

WHO has produced a manual titled 'Communicating risk in public health emergencies', which is a guide designed to assist countries in building capacity for risk communication and how risk communication should be carried out before, during and after an emergency (4). However, despite an expert guidelines group and rigorous guideline development methods, including scrutiny of the evidence base for best practice risk communication, the quality of evidence underpinning even the strongest recommendations, using the GRADE (Grading of Recommendations, Assessment, Development and Evaluations) system, was assessed as no better than moderate (5–6). This shows that there is some uncertainty for practitioners of risk communication, but provides opportunities for researchers of risk communication to fill these important knowledge gaps.

Entertainment produces emotional changes, such as laughter, fear and excitement. Art can be entertaining, but goes one step further – with a key requirement of good art being that it makes you think. The art of communication lies in going further still. It requires not only getting people to think, but also inspiring them to change their behaviour. Like art or entertainment, there is a subjective component in the design and the appreciation of a communication campaign. However, communication can also be measured objectively. For example, an objective measure of the success of a communication programme may be whether the target audience have changed their behaviour and whether this behavioural change mitigated the adverse outcomes of an emergency.

There are earlier, intermediary steps to behavioural change. These include whether the communication imparts a greater understanding of the risks of disasters which a population may face and whether the understanding of these risks leads to an improvement in the knowledge required for mitigating them. It is also important to know what beliefs, perceptions, or social norms have shifted, enabling people to translate this knowledge into a change in behaviour, such as improved disaster preparedness kits, actions to build social capital or prompt appropriate responses to early warning systems.

4.11.3 Challenges in doing communication research in disasters

Although these outcome measures may appear to be relatively straightforward to measure, communication research in disasters is difficult for three reasons. First, disasters do not readily lend themselves to interventional studies. Even if a specific intervention can be applied to one group of people while keeping a similar group as a control before, during or after a disaster (which is often logistically impossible), it may be difficult to randomize some to receive a communication programme and some not to receive it (7) (see Chapters 4.1 and 4.3). Opportunities for randomization may present themselves through social media (messaging some people but not others, for example) but such randomization in the wake of a disaster would bring ethical challenges. Because the ethical and logistical difficulties of randomization may be insurmountable following a natural disaster, many evaluations of communication programmes are consequently reliant on observational studies, vulnerable to selection biases that can be at best only mitigated, but not entirely remedied, by careful interpretation.

Second, it is impossible to adjust for all the extraneous factors which may impinge upon a particular behavioural change targeted by a communication programme. For example, language skills may be an easily identifiable confounder of a communication programme, affecting both accessibility to a programme and understanding of a programme. Even within a group which uses the same language, subgroups may have a more proficient grasp of both passive (understanding) and active (persuasiveness) use of the language, which may confound results of a communication programme. Thus, the internal validity of a study to assess a communication programme may be compromised.

Third, when the wider social context of a community is considered, including economic and social factors such as employment or education, demographic make-up, ethics, laws and religions, it becomes very difficult to ensure the external validity of a specific communication programme. At best, principles can be learnt, but communication programmes themselves have to be tailored for and developed with the communities they are meant for. There is no such thing as 'off the shelf' communication.

4.11.4 Techniques to use in emergency risk communication (ERC) research

Notwithstanding these challenges, there are techniques that should be employed in ERC research that can provide some insights into how successfully a communication programme has promoted positive behavioural change with respect to Health EDRM. Only with a thorough, planned evaluation – covering formative process, impact and outcomes – of every ERC project, can techniques be refined and benefits demonstrated.

Effective ERC promotes emergency risk literacy, which is analogous to health literacy, as described by Nutbeam(8). Emergency risk literacy represents the cognitive and social skills that determine the motivation and ability to gain access to, understand and use information in ways that promote and maintain good health through the management and mitigation of emergency risk. However, promoting emergency risk literacy in individuals alone (a behavioural change approach) is unlikely to produce the most beneficial results.

The behavioural change approach of health promotion is based on the belief that providing people with information will change their beliefs, attitudes and behaviours (9). Although a popular model, the provision of information on its own is rarely enough to change behaviour because it ignores the factors in the social environment that affect health, including social, economic, cultural and political factors (10). Similarly, without taking into consideration the broader determinants of health in ERC, risk management is likely to be limited. The development of individual responsibility alone is rarely sufficient to effect sustainable behavioural change.

An extension of the behavioural change model is the self-empowerment approach, in which people are encouraged to engage in critical thinking and critical action at an individual level. This model aims to develop 'risk management skills', including decision-making and problem-solving skills, so that the individual is willing and able to maintain control of their life during an emergency. While this model can be successful for some individuals, it is unlikely to be successful across a whole population because it does not address social norms (11).

4.11.5 Taking into account the determinants of health

In order for ERC to be sustainably successful at a population level, the determinants of health must be taken into consideration. The social determinants of health are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life (12). Determinants of health include education, housing, employment and the environment. They have a far greater effect on health outcomes than the provision of health services alone. Addressing the determinants of health also has a far more profound effect on the ability of a community to manage emergency risk than simply providing the information alone. At the most fundamental level, the three ultimate determinants of disaster risk are poverty, inequity and planetary health (including climate change). These three determinants are also the key

modulators of emergency risk management, and so must be addressed by ERC. These three fundamental issues underpin the great UN initiatives of 2015 – the Sustainable Development Goals, the Paris Climate Change Agreement and the Sendai Framework (Chapter 1.2) (13).

Addressing the determinants of health and disaster risk requires a collective action model – a socio-ecological approach that takes into account the interrelationship between the individual and the environment. Although individual empowerment is necessary, it is not sufficient to generate change at a population level. The collective action model generates population-level change by encompassing ideas of community empowerment and requiring people to individually, but also collectively, acquire the knowledge, understanding, skills, and commitment to improve the societal structures that have such a powerful influence on a community's ability to manage disaster risk (14). It engages people in critical thinking in order to improve their understanding of the factors affecting individual and community well-being. It also engages groups of people in critical action that can contribute to positive change at a collective level.

4.11.6 Components of communicating risk effectively for emergencies

Whichever model is used, there are three essential components to communicating risk effectively for emergencies (4): building trust, integrating communication into prevention, preparedness, response and recovery and specific techniques (including developing a compelling message with the target community, identifying the appropriate balance of media for communicating the message and evaluating the programme).

1. Building trust

Techniques used in both the development and the evaluation and research of communications strategy may be similar, and involve a mix of qualitative and quantitative methods (Chapter 4.13). Audience reach data is often already available from print and broadcast media, which may indicate which media are most trusted for, and used to garner, information. Generally, familiarity engenders trust in individuals, so elders are often more trusted than younger people, but this may need to be confirmed at a local level through surveys, focus groups and interviews.

2. An integrated approach

Communication needs to be integrated into every level of risk management. Bringing media and communication experts into the planning process is more likely to produce messaging which is acted on than simply providing information to the media. Moreover, commercial media have skills in measuring content and effectiveness of messaging beyond that usually found in health organizations. Experts in communication can provide valuable advice when considering the choice and balance of the multiple means by which the message is conveyed. This will also require careful consultation with 'target' communities and their agencies. There is also useful information to be garnered from wider consultation with other agencies (such as government, nongovernmental and private business), which can inform the communication process. For example, some agencies will have information on which people in a community are key

influencers and certain agencies may have specific skills in messaging. The planning process should cover all aspects of emergency risk management, starting with identifying and mitigating risk. During an emergency response, communication will usually focus on immediate survival issues ('drop, cover and hold' in an earthquake; 'seek higher ground in a tsunami', for example). Once the immediate threat is over, there will be a much longer period of recovery involving primary care, maternal and child health and subsequently an even longer period of psychosocial recovery that will involve employment, housing, education and the agencies responsible for the wider determinants of health.

3. Specific techniques

The seven Cs of a good communication were originally described more than sixty years ago in the context of 'public relations' (15), but these principles have been adapted for many areas of communication, including humanitarian relief (16):

- Correct – evidence based
- Concise – pithy
- Clear – it says what you mean
- Courteous – cultural values are important
- Complete – as comprehensive as possible
- Considered – with the target community and the agencies which serve them
- Concrete – be specific, not vague.

Despite the apparent objectivity of this schema, developing a good message is more art than science, which is why the involvement of a good communications team in message development is important. Good advertising slogans are often attributed with improving the sales of a product – sales of Nike running shoes went up tenfold in ten years after 'Just Do It' was introduced, for example (17) – but slogans to change behaviour during a disaster are more difficult to develop and more difficult to evaluate. 'If it's brown, flush it down; if it's yellow let it mellow' was a slogan used to minimize toilet usage and protect the fragile sewerage system after the Christchurch earthquakes (18). It ticked most of the seven Cs, but there has been no formal evaluation of the message's success.

Deciding which media to use can be difficult. Increasingly, social media is used to convey messages (19), but conventional television, radio and print media still have a place. For example, Katy Perry, Barack Obama and Justin Bieber each have more than 100 million followers on their Twitter accounts, but more than 3.5 billion people watched the FIFA world cup final on television in 2018. In some cases, a 'soapbox' presentation to an audience may be the best way to deliver a message, especially if power is out and buildings are destroyed. Once again, consultation with the target audience is important, using a collective action model of health promotion. Local knowledge can help decide which media mix will gain the greatest attention.

4.11.7 Research and Evaluation

The evaluation and research of any communication campaign requires a mixture of quantitative and qualitative methods (Chapter 4.13). Data gathering tools include focus groups, surveys, interviews, case studies, social media and/or website monitoring ('hits'). A series of measurements – formative (baseline), process, impact and outcome measures – will need to be budgeted for, in order that changes in awareness, knowledge and ultimately behaviour can be tracked over time. Questions about specific communication programmes can be added to routine surveys or market research, as well as specific surveys tailored to the programme be carried out. Well-funded, well-designed and well-implemented surveys should follow a communication strategy over time (before, during and after), and be able to compare different specific subgroups targeted by the strategy.

Such surveys are able to concentrate on positive outcomes of communication programmes, where routinely collected data tends to focus on negative outcomes of disasters. Questions should follow the pattern:

- Are you aware of the programme?
- Did the programme convey knowledge to you?
- Did you change your behaviour as a result of this knowledge?

Behavioural changes can sometimes be corroborated by objective measures. WHO has identified gaps in communication research and evaluation which, although they highlight deficiencies in current knowledge, also identify where there are research opportunities in the future. These gaps/opportunities include a lack of longitudinal studies and of studies of behavioural change (outcomes).

The gaps and research opportunities are particularly marked in low-income countries and among low income or vulnerable groups.

4.11.8 Case studies

The following four case studies highlight examples of communication research relevant to Health EDM.

Case Study 4.11.1

The 'All Right?' Campaign, Canterbury, New Zealand 2012

The 'All Right?' campaign is a population-based, multi-media health promotion aimed at improving psychosocial well-being following the 2010-2011 Canterbury earthquakes. It was formatively evaluated and has been continuously evaluated through a series of iterations over several years (20). Methods of quantitative and qualitative evaluation include semi-structured interviews for process evaluation, survey questions developed with a market research company aimed at 400 randomly selected Christchurch residents, and specific tailored questions added to the Canterbury Well-being survey – which is a survey of more than 2000 people carried out initially every two years, then annually to monitor Cantabrians' well-being in the wake of the earthquake sequence (21). In May 2018, half of Cantabrians (population 400 000) were aware of the 'All Right' campaign and of those who were aware of it, nearly 90% thought the messages were useful. More than 70% felt that the messages were useful for them personally and 42% claimed to have done at least one of the simple activities advocated by the campaign including, but not limited to, the Five Ways to Well-Being – Communicate, Learn, Be Active, Take Notice and Give (22).

The 'All Right' campaign in conjunction with the Canterbury Well Being survey, is an example of a thoroughly planned and researched communication programme. Inevitably, well-being is often measured subjectively and may require corroboration with more objective measures.

Case Study 4.11.2**'Staying Alive', Health Professional led Urban Radio, Ghana 2015**

A formative evaluation identified a gap in information, education and communication about policies and practices in healthcare delivery, healthcare financing, training, ethics, research and environmental issues in Ghana (23). In June 2015, medical practitioners collaborated with a private, local, English-speaking radio station to produce and host a weekly health show whose content was aimed at discussing health from the viewpoint of practitioners, clients, policy makers, administrators and financiers in a simplified language for the general public, including healthcare trainees.

Since July 2015, the show, called 'Staying Alive', has aired weekly with audience analysis demonstrating its appeal to a wide range of active listeners. 'Staying Alive' remains one of the only shows in Ghana with a holistic approach to health hosted by health professionals. The evaluation of the impact of the show was crudely measured by the number of messages received and the number of telephone calls during the call-in segment. The integration of Facebook live expanded the reach of the show and Facebook analytics were useful in determining how many people watch the live show. Listener surveys by a commercial media measurement company (GeoPoll) was able determine a high number of people listening to the 'Staying Alive' compared with other English-language programmes but could not measure the impact of the message and its eventual impact on health.

This shows that where resources are stretched, pre-planning and appropriately detailed research and evaluation are difficult; but that international collaboration may help to address the gaps.

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Case Study 4.11.3

'Amrai Pari' reality TV programme, Bangladesh 2014

BBC Media Action is the BBC's international development charity. It supports media and communication efforts that strengthen governance, improve people's health, increase their resilience and improve emergency response. In Bangladesh, BBC Media Action broadcast a national TV reality show to build resilience alongside roadshows and work with the Bangladeshi Red Crescent to integrate new communication tools into their already established system of long-term, two-way conversations with communities about risk identification and resilience. The Amrai Pari ('Together We Can Do It') reality television programme helps build people's resilience by empowering communities to work together to be prepared for extreme weather conditions. It started as a television programme, but also includes events teaching practical life-saving skills, educational performing arts shows involving music and drama, and festivals with up to 2000 attendees. The programme featured communities adopting low cost, replicable solutions to everyday problems caused by extreme weather and changing weather patterns.

The project reached 22.5 million Bangladeshis, with impact research showing 78% of viewers reporting better understanding of how to prepare for extreme weather – and, more importantly, 47% of viewers reporting they took action after watching the programme (24).

This highlights how BBC Media Action produces communications programmes that are thoroughly formally evaluated and researched and based on tried and tested communication models. Like the 'All Right' campaign in Case Study 4.11.1, the evaluation relied in large part on subjective evaluation.

Case Study 4.11.4

The Pandemic Roadshow, New Zealand 2007

In conjunction with a local virologist, a dietician, a public health physician and an emergency planner, a children's science museum in New Zealand developed six portable exhibits designed to demonstrate the risks of influenza and how they could be mitigated and prepared for. The exhibits were based on the mnemonic CHIRP representing 'Cough etiquette', 'Hand Hygiene', 'Isolation', 'Reducing germs' and 'Preparation'. Cough etiquette showed how far people need to keep apart to prevent the spread of respiratory viruses. Hand hygiene used glow gel to demonstrate how easily germs can spread if hands are not washed properly. Isolation used a domino display to demonstrate how one infected person can lead to many more people succumbing, and how this is prevented by appropriate social distancing. Reducing germs showed how the influenza virus can be transmitted on surfaces which are not cleaned properly. Preparation challenged participants to find appropriate items for an emergency preparedness kit. The sixth display demonstrated a suitable healthy preserved food store for a family of four (and one pet) for a week. This exhibition was circulated among local government leaders, public libraries and schools for two years in conjunction with more conventional preparedness messaging delivered by video or print media.

In the region of New Zealand where the Pandemic Survival Roadshow was used, a random telephone survey demonstrated that the proportion of local population who were aware of the threat of pandemic influenza was almost twice that of the national average. In addition, people who had viewed the Pandemic Survival Roadshow were statistically significantly more likely to have an emergency preparedness kit. Such preparation served the population well during the 2009 H1N1 influenza pandemic and the all hazards approach had spin off benefits when the same population was affected by earthquakes in 2010 and 2011 (25).

This case study shows how awareness following the Pandemic Survival Roadshow was objectively evaluated and compared to other areas across the country. The effectiveness of the programme, particularly with respect to the all hazards approach, was able to be tested (unfortunately) by the Canterbury earthquake sequence, which followed closely after the H1N1 2009 influenza pandemic.

4.11.9 Conclusions

Health EDRM research is inherently challenging, and nowhere more so than in the area of emergency risk communication. However, by integrating communication programmes into all aspects of the disaster cycle, developing the programmes using evidence-based techniques, using the appropriate balance of media for delivering the programmes and following recognized schema for evaluating such programmes, a valuable contribution can be made not only to disaster risk reduction in the communities served, but also to generating transferable knowledge to inform future emergency risk communication programmes in a diverse range of situations and societies.

4.11.10 Key messages

- o **Emergency risk communication (ERC) is an essential part of emergency preparedness.**
- o **The essential components of effective communication during emergencies are trust, integration and the seven “C”s of effective communication – correct, concise, clear, courteous, complete, considered, concrete.**
- o **Research and evaluation of ERC can be difficult in the pressured environment of an emergency or disaster, but can be achieved with careful advance planning.**
- o **In order to learn from and improve ERC, formal evaluation techniques should be applied to ERC, which requires forethought and funding.**

4.11.11 Further reading

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