

ABSTRACT

School safety is a priority within international disaster risk reduction efforts. Providing a safe learning environment and continued access to education after an emergency can limit impacts on students, their families and the community. This study explores New Zealand legislative requirements and emergency management practitioners' expectations of school-based emergency management efforts to identify what preparedness activities schools are expected to undertake to ensure the physical and emotional safety of their students in emergencies. The study combines a review of New Zealand legislation, policy, guidelines and resources related to school safety and emergency management with interview data from three emergency management practitioners. The key finding was that legislation was mostly generic for New Zealand workplaces. It was broad and, at times ambiguous, and schools are not provided with clear disaster risk reduction guidance. The establishment of clear emergency preparedness benchmarks for schools would help address deficiencies and ambiguities identified within the existing legislation. In addition, the development of standard operating procedures for core emergency response actions, such as lockdowns, evacuations and family reunification could provide a consistent approach to school-based preparedness efforts, thereby ensuring student safety.

Legislative requirements and emergency management practitioner expectations of preparedness in New Zealand schools

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Introduction

A school's links into families through their students can be used to build a culture of disaster resilience within communities (Ronan *et al.* 2016). One of the main ways schools can support community resilience is by ensuring they provide students and staff with safe facilities in which to learn (e.g. Peek 2008). In the decade since the initial introduction of the *Hyogo Framework for Action 2005-2015* (HFA), disaster risk reduction efforts have prioritised the safety of school sites and children's continued access to education. A review of global disaster risk management within the education sector resulted in the establishment of the Comprehensive School Safety (CSS) framework (GADRRRES 2014). The CSS framework includes core strategic goals, priorities and indicators from the HFA. It has provided the education sector with an overview of what should be considered when planning for physical safety at schools and ongoing access to education. The CSS framework is built around three pillars:

- safe school facilities
- school disaster management
- risk reduction and resilience education.

Schools are identified as critical infrastructure within the *Sendai Framework for Disaster Risk Reduction 2015-2030* and education is recognised as having a role in achieving the disaster risk reduction (DRR) priorities within the Sendai framework (Shiwaku & Shaw 2016).

New Zealand has agreed, as a signatory to both the Hyogo and Sendai frameworks, to integrate where applicable the principles of DRR and resilience (UNISDR 2005, 2015) into policy and planning at all levels of government. To date, successive governments have undertaken steps towards this goal within the education sector, most prominently in ensuring that schools are physically safe learning environments (e.g. earthquake-resilient school buildings).

The aim of the present study was to explore the legislative requirements and practitioner expectations of school-based emergency management efforts and to identify what preparedness activities schools should take to keep students physically and emotionally safe in emergencies. The study investigated three research questions:

- What legislation directs emergency management efforts in schools?
- What are schools expected to do to meet their legislative responsibilities?
- What monitoring and compliance requirements exist for school-based emergency management efforts?

This research builds on an earlier study examining emergency preparedness in 355 New Zealand schools (Tipler *et al.* 2015), which found that preparedness levels varied considerably between schools, due in part to an absence of clarification within existing emergency management requirements and expectations. For example, under the *Health and Safety at Work Act 2015* (NZ Government 2015), schools are required to develop emergency response plans, but the details of what those plans should contain are up to individual school leaders to determine.

Method

The study combined two data collection methods:

- A review of legislation, policies and guidelines related to safety and emergency management in schools to establish the statutory requirements, and a review of resources available to assist schools in their emergency management efforts.
- Expert interviews with three emergency management practitioners (two from the Ministry of Education [MoE] and one from the Wellington Region Emergency Management Office [WREMO]). The three practitioners interviewed were responsible within their organisations for ensuring that schools were advised and supported in their emergency management efforts. The semi-structured interviews lasted between 30-45 minutes. The interviews were transcribed verbatim, checked twice against the recorded interview and returned to participants for checking, editing and accuracy.

The analysis process combined qualitative description and thematic analysis. A qualitative descriptive approach, as advocated by Sandelowski (2000), recognises there are times when the audience simply requires a straight description of the phenomena. The approach tends to focus on basics such as the who, what, and where of events or experiences. This approach is consistent with the study aim of identifying the requirements and expectations of school-based emergency management. Thematic analysis, as described by Braun and Clarke (2006), was used to organise the descriptive data. The principles of thematic analysis allowed for the data to be viewed in a semantic way to identify and describe patterns and ideas in the data. Data were manually coded

and mapped to enable the categorisation of identified relationships allowing themes and sub-themes to be recognised.

Approval for the research was granted by the Massey University Human Ethics Committee.

Findings and discussion

Findings are presented under the three research questions.

Legislation directing emergency management efforts in schools

New Zealand schools exist in a decentralised environment in which individual schools are governed by boards of trustees. These boards are responsible for the safety and welfare of all students, staff and visitors (e.g. parents, volunteers, contractors) on site or engaged in school-related business (e.g. field trips or after hours activities) (MoE 2016a). In particular, schools have a duty of care that requires they undertake appropriate emergency management activities to ensure the safety of students until they can be reunited with their families.

Four pieces of legislation guide school emergency management efforts. Table 1 provides an overview of the requirements of boards of trustees within each piece of legislation.

The following list identifies the known resources available to assist schools in meeting their legislative obligations. With the exception of the requirements within the *Education Act 1989* (NZ Government 1989), the legislation is generic for all buildings and workplaces.

- Safe learning facilities
 - Building Warrant of Fitness (MoE n.d.a)
 - Fire and safety design requirements for schools (MoE 2008)
 - Health and Safety at Work Act 2015 – A practical guide for Boards of Trustees and school leaders (MoE 2016a)
- School emergency management
 - Emergency Management Plan Template (MoE 2012)
 - Managing Emergencies and Traumatic Incidents - 9 Point Checklist (MoE 2009)
 - Pandemic Planning Kit (MoE n.d.b)
 - Traumatic Incidents: Managing Student And Staff Wellbeing (MoE 2016b)
- Disaster resilience education
 - EOTC Guidelines – Bringing the Curriculum Alive (outdoor education resource) (MoE 2016c)
 - What's the Plan Stan? (teaching resource for disaster education) (MCDEM 2009)

The MoE practitioners acknowledged the absence of specific details identifying what emergency management

Table 1: Emergency management legislation and requirements of schools.

Legislation	Requirements of boards of trustees
<i>Education Act 1989</i>	<p>Must provide a safe physical and emotional environment for their students.</p> <p>May temporarily close the school in an emergency (e.g. flood, fire, epidemic).</p> <p>Must exclude staff and students with an infectious disease.</p>
<i>Building Act 2004</i>	<p>Must ensure that all school buildings are safe and can be used without jeopardising the health of staff and students.</p> <p>Must ensure buildings can be safely evacuated in the event of fire (and other hazards).</p> <p>Must develop an evacuation plan and procedures for all school buildings.</p>
<i>Fire Safety and Evacuation of Buildings Regulations 2006</i>	<p>Must have building evacuation procedures in place.</p> <p>Must test evacuation procedures in emergency drills at least once each school term.</p>
<i>Health and Safety at Work Act 2015</i>	<p>Must develop plans and procedures for all foreseeable emergencies including earthquakes and other natural events.</p> <p>Must ensure all staff, students and visitors are provided with the training and education necessary to implement the emergency plans.</p> <p>Must test emergency plans and procedures in regular emergency drills.</p>

activities schools must undertake under the legislation. For example, the health and safety legislation is:

...very ambiguous in the wording, stating 'all foreseeable hazards', 'best efforts', type wording. It has really just left it open to interpretation. (MoE 1)

The absence of well-defined expectations is a weakness of the legislation and has resulted in schools not having comprehensive frameworks on which to base emergency management efforts. Similar research undertaken in the USA (Chung, Danielson & Shannon 2009) identified that governments need to provide clear emergency management benchmarks and expectations of school-based efforts.

School legislative responsibilities

In order to meet legislative responsibilities of keeping students safe in emergencies it is necessary for schools to:

- undertake emergency planning that details how the school will respond in emergencies
- provide staff and students with hazards education and emergency response training to ensure they can implement the emergency plans
- regularly conduct emergency response drills to test plans, education, and training.

Emergency planning

All practitioners identified three aspects of emergency planning as being important: emergency plans, the MoE emergency management plan template and education continuity.

Emergency plans

Emergency plans are essential for the welfare of staff and students (Smith *et al.* 2001). By having plans schools

send a message to families that they are prepared to keep students safe (Johnston *et al.* 2011). School plans need to meet the requirements of various emergency situations, not just those that seem most likely. Plans should include actions to be taken before, during and after an emergency event (Burling & Hyle 1997). The MoE practitioners recognised that development of comprehensive emergency response plans may get unwieldy and schools should create plans that are:

...succinct, very direct, brief, operationalised, and easy to read. More like a checklist rather than pages and pages of information. You can get caught, especially in the education area, of becoming too wordy, too lengthy and [providing] too many options. (MoE 1)

The importance of planning for reuniting families after an emergency cannot be overstated. Schools should develop procedures for reunification. Such procedures are a part of the 'contract' schools establish with parents and caregivers when students are enrolled. The study by Tipler and colleagues (2015) investigated preparedness in New Zealand schools and found that while the majority of schools (91 per cent) reported having emergency plans, only 40 per cent had ensured that staff, parents and caregivers were familiar with family reunification procedures. In an emergency, parents need to know how to collect their children and where from (Chung *et al.* 2009, Johnson *et al.* 2014), thereby avoiding confusion or additional anxiety (Ronan & Johnston 2005). Emergencies can occur at any time in any school and, where reunification plans are not in place, schools risk not meeting their duty-of-care obligations.

Emergency management plan template

In 2010 the MoE produced an emergency management plan template (MoE 2012) to assist schools in their planning. The template combines bullet-point suggestions of what schools should consider (e.g. how

the school advises parents and caregivers in the event of an emergency) and checklists for hazard types (e.g. Fire - ring fire alarm, call 111, if safe to do so extinguish the fire, etc.). Use of the template is voluntary.

We offer the tools and resources on our website. The template is a great example. But it's a horse-to-water situation. We can provide as much water [as we like] but we can't make them drink. And that's the same with these templates. We've made a really good template available to [schools] but it's up to them whether they adopt it. (MoE 1)

The template is formatted to address individual emergency situations (e.g. earthquake, gas leak, violent intruder) and can be modified, allowing schools to develop individualised response plans for emergency events they may face. Planning for individual hazard types is common within the emergency management literature. However, some research (e.g. Chung *et al.* 2009, IFC 2010) advocates focusing on five core response requirements (i.e. shelter-in-place, lockdown, building evacuation, relocation and family reunification) irrespective of the hazard or emergency as each response action can be used for several emergency situations. For example, building evacuation may be the appropriate response in a fire, earthquake, chemical spill or gas leak. By focusing on the five core response requirements schools can have plans in place for any emergency they may face, without the need to develop individual plans for every hazard type.

The MoE template, in its current form, does not provide specific advice or guidance on any of the five core response requirements. Nor does it include information about planning for education continuity. Gaps within the plan template may be addressed by using other guides and documents. For example, a best practice emergency planning guide was developed by the Ministry of Civil Defence and Emergency Management (MCDEM) and the MoE (2011) for use in early childhood education services. The guide includes advice on developing plans, case study examples, checklists, templates and frequently asked questions. Much of the material in the guide is relevant for schools. In addition, the MoE practitioners suggested, where appropriate, schools get advice

from other emergency management professionals (e.g. emergency services, CDEM staff in local and regional councils or private security companies). Engaging such professionals to assist schools' emergency management efforts was encouraged by Chung and colleagues (2009) in their recommendations for US schools. However, not all schools are in a position, either financially or geographically, to access external professional expertise. It is necessary for the MoE (or other agencies, e.g. CDEM) to provide schools with access to basic information to meet legislative and duty-of-care obligations.

Education continuity

International school preparedness literature (e.g. IFC 2010) indicates that the interruption of education after an emergency or disaster can lead to students having extended absences or dropping out of school, which can have negative implications for students, their families and the community. Furthermore, the re-establishment of children's routines after an emergency, in particular returning to school, can help the recovery process (e.g. Peek 2008). The MoE practitioners acknowledged the importance for family and community recovery of re-opening schools as soon as possible after an emergency event.

[Until] parents have some place to put the kids into school they're not going to be able to go back to work. And so there's a flow-on effect, financial and social implications... the functioning of the community as a whole. (MoE 1)

It is also important for children to get back into their normal routines. (MoE 2)

To that end, it is essential that schools plan for what will be required for them to operate, even if at a reduced capacity, after a large-scale or prolonged emergency event. Although the importance of schools planning for ongoing operations after an emergency was recognised by the MoE practitioners, no specific education continuity resources or guidelines are available from the MoE (or elsewhere) to help schools prepare. Research suggests (e.g. Peek 2008) that failure to provide for



Students and staff receive hazards education and emergency response training so they understand what to do in an emergency.

Image: David Johnston

ongoing education needs after an emergency can negatively impact student academic performance and long-term educational outcomes, especially those suffering from additional or pre-existing challenges (e.g. displacement, family instability).

One aspect of education continuity planning discussed by the MoE practitioners was the implication of using school sites to provide interim accommodation for the community after a major emergency event. A lesson learnt from the 2010-2012 Canterbury earthquakes was that when emergency accommodation becomes temporary community accommodation for an extended period it may impact on a school's capability to educate students. For example, using school buildings for community shelters means parts of the school are inaccessible to students and can create potential physical risks to students of 'unknown' people on the school grounds. In consideration of this, the MoE engaged with MCDEM to clarify how school sites may be used in the aftermath of a large-scale emergency (e.g. accommodation or welfare centres) and for how long such use might continue before schools can return to 'normal' activity. The importance of schools returning to the core business of education after a disaster or large-scale emergency is a priority within the CSS literature (GADRRRES 2014). Clarification by the MoE of how schools may be used after an emergency will aid schools in planning for the continuity of education.

A well-developed emergency plan can influence how school officials manage a crisis in the short-term and can affect how schools recover in the long-term (Smith *et al.* 2001). However, developing emergency plans is only part of an effective response. Students and staff need hazards education and emergency response training to implement the plans (Heath *et al.* 2007).

Hazards education and emergency response training

Hazards education

In-roads have been made within the New Zealand education system for the inclusion of hazards education programs in schools. These local efforts have been recognised in the international disaster resilience education literature (e.g. Ronan 2014). The 'What's the plan Stan?' (WTPS) teaching resource was developed in 2006 by MCDEM (updated in 2009) to incorporate hazards education in primary and intermediate school curricula. The WTPS resource contains lesson plans, fact sheets and classroom activities. In addition, WTPS includes basic information about the emergency management obligations of school boards of trustees and offers simple guidelines for conducting emergency drills and practices.

To date no complementary resource has been created for use in secondary schools. Hazards education is not specified within the New Zealand secondary school curriculum and though opportunities exist for the inclusion of disaster-related education within the social sciences (i.e. Years 9 and 10 social studies and Years 11 and 12 geography) and in science (i.e. Years 9 and

10 geology) (Taylor & Moeed 2013). However, inclusion is at the discretion of individual teachers and as such, it is possible for students to complete their secondary school education without exposure to hazards education programs. It was a recommendation of the WREMO practitioner that every student receives some hazards education:

... just some very basic education around natural hazards and what they could do to get prepared in their own household. Just one lesson a year would be sufficient. You could get enough into one lesson I think. (WREMO)

In addition to providing students with information that allows them to take an active role in their own safety, hazards education research (e.g. Ronan *et al.* 2015) has identified positive benefits for families. By promoting home-based preparedness with students and staff, schools can encourage the development of family response plans that support the school's emergency management efforts and community-wide resilience.

Emergency response training

Schools are required to ensure staff and students are provided with the information and training necessary to implement the school's emergency response plans (MoE 2016a). As part of their health and safety professional development program (MoE 2016d) schools must provide staff and students with training in emergency procedures (e.g. identifying types of emergencies, evacuation procedures, location and use of emergency equipment). The health and safety guide for schools provides limited information identifying what should be covered in training programs, potential penalties for non-compliance and which external agencies (e.g. WorkSafe New Zealand) can provide further advice. As with other aspects of school-based emergency management (e.g. plans and drills) specific guidance and standard operating procedures ensure all schools have the training elements in place to meet their legal obligations.

New Zealand research examining school experiences of emergency events recognises the important role that the principal (Tarrant 2011) and staff (Education Review Office 2013) play in helping students and families respond to and recover from traumatic incidents and emergency events. To assist schools in managing traumatic incidents the MoE developed a guide for crisis management teams within schools (MoE 2016b). In addition, the MoE traumatic incident team offer incident management training. The only New Zealand study to ask schools about the use of the traumatic incident training (Renwick 2012) found that only a quarter of schools (255 out of 1020) had been invited to participate in MoE training programs on managing traumatic incidents. However, 'many' schools did indicate a desire to access additional support including professional development or training in managing emergencies and traumatic incidents.

School hazards education programs are invaluable in providing students with information about how



School children practice the 'turtle' as an alternative safety behaviour for when they cannot 'drop, cover, roll'.

Image: David Johnston

to prepare at home and keep themselves safe in emergencies. Supporting such programs with regular emergency response training in drills reinforces learnings and allows schools to test response procedures.

Emergency response drills

All New Zealand schools are legally required to conduct fire evacuation drills (NZ Government 2006). Drills for other emergencies (e.g. earthquakes, lockdowns) are also recommended (MoE 2016a). All three practitioners interviewed acknowledged the importance of schools conducting regular (at least once per term) emergency drills as a way of helping staff and students to respond effectively in real emergencies. The MoE practitioners indicated that internal surveys conducted by the Ministry asking schools about the drills found that some schools were undertaking additional drills to those required (e.g. drills for someone suffering from anaphylactic shock or school bus accidents).

Lockdowns are events on which schools most often seek advice from the MoE. To help prepare, the Ministry practitioners recommended schools undertake lockdown drills, but that those drills do not necessarily need to include students, for fear of distressing them. However, research on intruder crisis drills (Zhe & Nickerson 2007) found that well-designed drills in which students are provided with support information about why they are practising such a scenario do not cause undue upset to students. Emergency drills are a fine balancing act of providing a realistic simulation that enables staff, students and visitors to know what risks they may face (Kano *et al.* 2007) without increasing anxiety (Johnson *et al.* 2014). In all cases calm and responsible school staff are vital to an effective response (Smith *et al.* 2001).

The WREMO practitioner recommended that schools regularly conduct emergency drills for the hazards that are most likely to affect them. However, when asked

about what specific elements drills should contain he was uncertain.

I don't think we've thought that through actually... From an earthquake point of view, there is the drop-cover-hold aspect, carefully-exiting aspect, and evacuation-if-necessary aspect. I think that's all we've put to it for schools. But if there are other points, it would be good to know...if we are missing something. (WREMO)

As a result of previous studies (e.g. Johnson *et al.* 2014, Johnston *et al.* 2011, Tipler *et al.* 2016), authors have recommended specific activities be considered when planning and conducting emergency drills. For example, practising alternative safety behaviours in locations outside the classroom, requiring everyone at the school to participate in drills, identifying potential hazards along evacuation routes, accounting for everyone on site at the time of the drill and evaluating the drill including feedback from participants. Such advice would be useful for New Zealand emergency management practitioners to consider when developing standard operating procedures for response drills in schools.

The only resource available to schools to assist them plan and conduct emergency drills is a seven-page overview of simulations and drills within the WTPS teaching resources (MCDEM 2009). Renwick's (2012) review of WTPS found that 73 per cent of schools (462 out of 633) that used the emergency simulation and drills section found it to be 'useful' or 'very useful'. As the WTPS resource was only distributed to primary and intermediate schools it is uncertain what resources or guidelines, if any, are used within secondary schools when planning and conducting emergency drills.

Monitoring and compliance of school-based emergency management

Evidence of monitoring of school compliance with emergency management obligations is limited. Requirements related to school building safety are monitored through a Building Warrant of Fitness, which is renewed annually (MoE n.d.b). In addition, school leaders may be asked about the health and safety and emergency management efforts in education reviews (MoE 2016a). The MoE practitioners identified a need for preparedness benchmarks for schools (e.g. specific content to be included in emergency plans) and that any benchmarks be monitored and regularly audited. However, the absence of measures in place to monitor the effectiveness of school-based emergency management efforts is common within the education sector globally. This was recognised as a priority within DRR research (e.g. GADRRRES 2014). Without consistent monitoring of all aspects of school emergency management efforts it is difficult for governments to assess whether schools have the capabilities to cope in emergencies (Brock 2000), to ensure the safety of their students.

Conclusions

In New Zealand, school boards of trustees are responsible for the safety of the students in their care before, during, and after an emergency. Existing legislation provides the general emergency management requirements schools must meet. However, due to the ambiguity and generic nature of the legislation, there is variation in the extent of emergency preparedness activities schools undertake. Planning for both an effective emergency response and education continuity after an emergency can help reduce impacts on student safety and learning. The establishment of emergency preparedness benchmarks that schools must meet could help address deficiencies and ambiguities within the legislation. It is unrealistic to expect that every school would have access to the expertise needed to develop effective emergency response plans and procedures without additional advice and support from the MoE and, where appropriate, from other emergency management professionals. Providing schools with guidance and standard operating procedures, especially for the five core response actions (i.e. shelter-in-place, lockdown, building evacuation, relocation, and family reunification) could build consistency in school preparedness and maximise potential safety for students. Finally, the development of specific emergency management criteria within the regular school review process to monitor compliance of school legislative requirements would help schools plan for the safety of their students in any emergency event.

School emergency response capabilities are a test of preparedness activities. There is a need to investigate the experiences of how schools respond to real emergencies to determine the effectiveness of their emergency management preparedness and response.

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