Interjurisdictional Variance in US Workers' Benefits for Emergency Response Volunteers

Volunteers who are deployed during times of disaster are critical public health system assets. These individuals share concerns about a variety of subjects with public health law implications, including whether they are entitled to employment benefits before, during, and after disaster response.

We examined and analyzed state employment benefit laws pertaining to emergency response volunteers. We used the Emergency Law Inventory (ELI; https://legalinventory.pitt.edu)—an informatics tool developed at the University of Pittsburgh Graduate School of Public Health that contains more than 1300 statutory and regulatory provisions affecting volunteer activities—to access certain employment laws in 60 jurisdictions.

Analyses of the laws revealed that fewer than half of the jurisdictions have laws that protect seniority, vacation time, sick time, or overtime privileges. Additionally, there is tremendous variance and lack of uniformity among the jurisdictions concerning employment status requirements, geographic constraints, time limitations, and economic impacts. Major disasters often necessitate interjurisdictional response. To facilitate effective deployment of volunteers, employment laws should be uniform across the states. Furthermore, limitations that impede volunteer responders should be eliminated. (*Am J Public Health*. Published online ahead of print September 27, 2018: e1–e7. doi:10.2105/AJPH.2018.304534)

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Recent major events involving volunteer response include hurricanes Harvey, Irma, Maria, and Nate; Pacific Northwest wildfires; and dozens of tornado outbreaks and floods. As the global surface temperatures continue to rise, the intensity and frequency of natural disasters is anticipated to increase.[1] In addition to devastating physical and emotional consequences, disasters have tremendous economic corollaries. Estimated costs associated with Hurricane Katrina exceed $250 billion, with uninsured losses projected at $215 billion.[2] Services provided by volunteers in disaster response reduce economic burdens. For example, although the value of volunteer activity can be difficult to quantify,[3] the American Red Cross (ARC) approximates that its volunteers annually provide $6 billion in services worldwide.[4]

Integration of disaster response volunteers into the public health, health care, and emergency management systems is vital for national health security[5]; however, barriers exist. A survey of Medical Reserve Corps (MRC) unit leaders reveals that nearly one third are concerned that legal issues affect their ability to recruit volunteers, and one fourth indicate that legal concerns impede volunteer response.[6] Some of the legal barriers that volunteers face are liability, scope of practice, and licensure issues.[7] In addition, the volunteer workforce is incredibly diverse. For example, the MRC is composed of more than 200 000 volunteers across the United States and its territories. Approximately 60% are health care professionals, and 40% are from a variety of nonclinical backgrounds. Although this multiplicity allows MRC volunteers to participate in a wide range of emergency activities, it creates dissonance across the network because of variance in knowledge bases and skill sets.

To address some of these concerns, federal directives call for the standardization of disaster preparedness education.[8,9] A working group assembled by the American Medical Association established Competencies for Disaster Medicine and Public Health, setting forth a baseline for knowledge and skills.[10] Competency 10 requires volunteers to demonstrate understanding of legal principles implicated in disaster preparedness and response.[11]

Identifying legal issues and accessing laws relevant to disaster preparedness and response is a challenging endeavor, even for trained legal scholars. Although many laws are openly available on the Internet, it is difficult to identify those laws that are particularly relevant to volunteer activities. The Emergency Law Inventory (ELI; https://legal-inventory.pitt.edu) is a publicly available informatics tool developed at the University of Pittsburgh Graduate School of Public Health (Pitt Public Health). ELI identifies, catalogs, filters, and summarizes more than 1300 statutory and regulatory provisions (collectively "laws") that affect volunteer activities when preparing for or responding to disasters. We describe the development of ELI and how it was used to examine laws that protect volunteers' employment benefits. Research reveals that employment benefits are not standardized across the states and that some laws act as barriers to volunteer participation in disaster response.

THE DEVELOPMENT OF EMERGENCY LAW INVENTORY

ELI is an adaption of the Emergency Law Database (ELDB) previously developed at Pitt Public Health' s Preparedness and Emergency Response

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Research Center, under the Public Health Adaptive Systems Studies project. The ELDB contains more than 5900 laws directing public health system agents to work collaboratively for emergency purposes. We received written survey responses from 98 field testers of the ELDB. Eighty-nine percent of the respondents reported that legal databases are useful for a variety of emergency purposes, including education and training and the clarification of legal responsibilities. Several commentators noted that the configuration of the ELDB searching capabilities needed streamlining and the interface made more user friendly. The ELI project team used these evaluations and other lessons learned during the Systems Studies project to develop and refine ELI.

Phase I: Convening a Partnership

An innovative academic–public practice–private partnership was established between Pitt Public Health; MRC units headquartered in local health departments in Allegheny County, Pennsylvania, rural eastern Ohio, and New York City; and MAYA Design (a Web site developer). Pitt Public Health had a strong prior relationship with each health department that housed the MRC units that included cooperative projects, workforce trainings, experiential learning opportunities, ELDB field testing, and research collaborations. MAYA's scientific expertise and state-of-the-art resources were critical for streamlining the coding methodology and designing an intuitive, user-friendly interface.

Academic–public health practice partnerships can significantly contribute to a well-functioning public health system,[12] including improving emergency preparedness capabilities.[13] The addition of a private sector partner can augment resources and enhance expertise; however, such collaboratives are not always successful. Lack of time, funding, and interest among health department employees are cited as impediments to success.[14]

Internally, Pitt Public Health assembled a multidisciplinary team including an attorney, two JD/MPH students, and one law student (collectively "legal team"), as well as two program evaluators (the evaluation team), a project coordinator, and a graphic designer. The project benefited from the institutional knowledge, historical perspective, and continuity of two team members involved in the development of both the ELDB and ELI.

The evaluation team distributed a self-assessment survey to the partnership via Qualtrics during project months 6, 12, and 20. We included questions about leadership, management, critical characteristics of the process, individual empowerment, bridging social ties, synergy, and collaborative problem solving.[15] The collaboration showed high levels of functioning for leadership, management, and critical characteristics of the process, synergy, and collaborative problem-solving. We ranked individual empowerment lower than the other key constructs. Bridging social ties scored well, with the exception that the partners did not start new ventures together. This may have resulted from their historic relationships.

Phase II: Establishing Parameters

We gathered qualitative data through volunteer interviews conducted by Pitt Public Health, MAYA, and the MRC partners. More than 80 volunteers were asked open-ended questions. Affinity clustering methods exposed legal themes, jurisdictional scope, and volunteer profiles. We identified four legal topics as impactful to volunteer engagement: liability, scope of practice, license reciprocity, and workers' benefits. Volunteer feedback indicated that the jurisdictional scope of ELI should reflect workforce deployment locations; therefore, ELI includes laws in 60 jurisdictions: 50 states; Washington, DC; federal law; and 8 US territories. We identified 12 distinct roles and two global categories as most prominent in disaster response: dentist, emergency medical services (EMS), firefighter, governmental public health, law enforcement, mental or behavioral health professional, student or minor, nurse, pharmacist, physician, social worker, veterinarian, other medical professional (such a podiatrist, physical therapist, and physician assistant), and other volunteer.

Phase III: Developing Legal Methods

Quantitative data gathered in Phase II informed quantitative legal methods in phase III. The coding methods that were used are similar to the mapping methodology described by Anderson, et al.[16] Both approaches blend empirical and legal research methods resulting in greater transparency, replicability, and objectivity than traditional legal research. Because of the breadth of the study's jurisdictional parameters and difficulty in accessing local ordinances, we limited searches to federal, state, and territorial law.

Robust legal methods ensured comprehensiveness. The principle investigator held an initial four-hour training session for the legal team. The legal team conducted weekly meetings to ensure coding consistency. Exclusion and inclusion criteria established relevance. We discussed questionable provisions and, when necessary, revised the relevance criteria.

We performed initial research using LexisNexis, a subscription legal database. Searches originated by examining the table of contents for the statutory, then regulatory, provisions in each distinct jurisdiction. As described in Box 1, we selected titles and chapters with keywords then individually examined them for relevance.

We then performed broader searches, consisting of a combination of Boolean operators and keywords, to uncover laws housed in less obvious titles and chapters.

More than 2000 laws were individually screened for relevance. We deemed approximately 1300 laws significant and coded them using a streamlined Google form customized by Pitt Public Health and MAYA. Because some laws contain more than one legal topic, the number of summaries approaches 1600. Coded sections include jurisdiction; role; citation; legal topic; triggering condition (whether a law was generally applicable only following an emergency declaration); summary title (a short description of the coded provision); and, summary text (a description of the law using common words). MAYA imported the legal data from the Google form into the ELI interface.

We performed multiple levels of intercoder quality assessments. A reviewer without a legal

TITLE AND CHAPTER KEYWORDS

Main Search Term	Synonyms Used
Emergency management	Disaster management, civil defense, civil aid, military aid, military defense
Civil procedure	Civil actions, civil remedies, tort liability, court procedure: limited actions, limitations on liability, actions, suits, arbitration, judicial proceedings
Department of Health	Department of Safety, State Emergency Response Board, Department of Emergency Management, Department of Public Safety, Department of Human Services, Public Health Regulations, Department of Public Health
Professions and occupations	Occupations and professions, state officers and employees, public employees

background provided weekly feedback on legal summaries' readability, consistency, and comprehensibility. The legal team cross-checked 2.5% of the laws in three coded sections that were selected because of their subjectivity: role, legal topic, and triggering condition. We noted and discussed inconsistencies. We totaled the data and reviewed them from all quality assessment iterations. Coding became more consistent over time. For laws 1–500, the legal team attained a 73.53% consistency rate. For laws 501–1000, the consistency rate was 92.11%. We did not perform a consistency check for the remaining laws because of the high percentage of agreement.

Phase IV: Beta-Testing Emergency law inventory

A series of formal gatherings yielded qualitative data used to refine ELI and address training requirements. Pitt Public Health created and facilitated a guided exercise, "Test Drive ELI," to cultivate stakeholder relationships and elicit end user feedback. Seventy-six individuals participated in the Test Drive ELI exercise at the 2016 National Healthcare Coalition Conference, the 2017 National Association of County and City Health Officials Preparedness Summit, three distance-accessible meetings, and an in-person meeting. Because the discussants reported that the ELI interface was intuitive, short educational modules replaced detailed training guides.

THE APPLICATION OF EMERGENCY LAW INVENTORY

In general, the laws in a volunteer's home state confer employment benefits and protections. ELI was used to research the following problem statement: What laws protect volunteers' employment benefits while engaged in training activities or deployed in disaster response?

We chose the "Get Started" button on the ELI homepage. Next, we selected the "Show me laws for all roles" option to capture provisions pertaining to each role designation. The current configuration of ELI does not permit a comparison of laws across states; therefore, when asked "Where are you volunteering?" individual jurisdictions were queried in sequential alphabetical order. When prompted, "Has there been a formal emergency declaration?" we chose the "Not sure" option to include all laws regardless of declaration status. On each state landing page, we selected the Workers' Benefits tab, we individually examined all workers' benefit laws, and we deemed 291 laws relevant and analyzed.

RESULTS PERTAINING TO COMPREHENSIVE BENEFITS

Interjurisdictional comparisons reveal that the most generous leave policies for volunteers ensure that pay, seniority, vacation time, sick time, and overtime privileges are not compromised during deployment (collectively "comprehensive benefits"). As shown in Table 1, 26 jurisdictions (study states), or 45% of the 60 jurisdictions, provide comprehensive benefits.

Employment Status Limitations

Twenty-five jurisdictions limit the provision of comprehensive benefits to state and municipal employees who are registered with the ARC, an executive branch agency, or a federally chartered nongovernmental agency. Exceptions are made for volunteer fire fighters (Connecticut, Delaware, Iowa, and Tennessee), EMS personnel (Connecticut and Iowa), members of canine and rescue teams (Connecticut), and members of the Air Force Auxiliary (Oklahoma). Colorado does not have any express registration requirements.

Twenty-two study states (81.48%) require employer approval before deployment. In Tennessee, a volunteer fire fighter's employer can request a written statement from the fire-chief to verify volunteer service.

Geographic Limitations

Volunteers in Iowa, Nebraska, Oklahoma, Oregon, Rhode Island, and Vermont receive comprehensive benefits only when deployed intrajurisdictionally. Volunteers in Georgia and Idaho, receive benefits when volunteering in their home state or a contiguous one. North Carolina limits benefits to volunteers deployed within the United States.

Time Limitations

Twenty-five study states impose time limitations on the distribution of comprehensive benefits ranging from 5 days (North Dakota) to 30 days (Hawaii, Kentucky, and Puerto Rico). Fifteen days is the most frequently cited period. States vary as to whether days are counted per calendar year, fiscal year, or "12-month period."

Volunteers in Oregon receive comprehensive benefits after the ARC determines a disaster level II or higher. In North Dakota benefits are received if there is a disaster level II or higher or an emergency declaration. In Kentucky, New Hampshire, and Oklahoma, a disaster level III or higher must be issued for such benefits. In Hawaii, Idaho, and Vermont (if services are

TABLE 1—Interjurisdictional Comparison of Comprehensive Benefits for Emergency Response Volunteers During Deployment: United States, 2016–2017

Jurisdiction	Citations	Employment Status	Time Limits	Geographic Limits	Disaster Declaration Required	Employer Approval
CO	CRS 24-33.5-825	Government employees	Yes: 15 d per calendar year	No	No	No, but cannot be deployed if essential to the operation of employer's daily task
CT	Conn. Gen. Stat. 5-249; Conn. Gen Stat. 7-461a	State employees who are volunteer firefighters, ambulance service personnel, canine search and rescue, or with the ARC; municipal employees who are certified disaster service volunteers with the ARC	Yes: 15 d per 12-mo period; Yes: 14 d per year	No	No	Yes
DE	29 Del. C. 6003; 29 Del. C. 5119	State employees certified with the ARC; state employees who are active volunteer firefighters or auxiliary members	Yes: 15 d per 12-mo period; no limits	No	No	Yes
GA	OCGA; 39-2-92	State employees certified with the ARC	Yes: 15 d per 12-mo period	Yes: applied only to disasters in GA or a contiguous state	No	Yes
HI	HRS 78-23.5	State employees certified with the ARC or a federally chartered nongovernmental disaster relief organization; county employees certified with the ARC	Yes: 30 d	No	Yes: disaster level III or higher or a declared disaster	Yes
ID	Idaho Code 67-5338	State employees certified with the ARC	Yes: 120 work hours per 12-mo period	Yes; applied only to disasters in ID or a contiguous state	Yes: disaster level III or higher or a declared disaster	Yes
IL	50 ILCS 122/15; 5 ILCS 335/3	State and local government employees certified by the ARC or IEMA	Yes: 20 working days per 12-mo period	No	No	No
IN	Burns Ind. Code Ann.; 4-15-14-7	State employees certified by the ARC	Yes: 15 d per fiscal year	No	No	Yes
IA	Iowa Code 55.2; Iowa Code 70A.26	State employees who are volunteer firefighters or EMS personnel; public employee certified by the ARC	Yes: the period of emergency response; yes: 15 work days per 12-mo period	No: Yes: applied only to disasters in IA (public employees)	No	No; yes
KY	KRS 61.395	State employees certified by the ARC	Yes: 30 work days per 12-mo period	No	Yes: disaster level III or higher	Yes
LA	La. R.S. 42.450.2	Public employees certified by the ARC	Yes: 15 work days per 12-mo period	No	No	Yes
MN	Minn. Stat. 43A.185	State employees certified by the ARC	Yes: 15 d per 12-mo period	No	No	Yes

Continued

TABLE 1—*Continued*

Jurisdiction	Citations	Employment Status	Time Limits	Geographic Limits	Disaster Declaration Required	Employer Approval
MO	105.267; R.S. Mo.	State employees certified by the ARC or a state recognized disaster volunteer organization	Yes: 120 work hours per fiscal year	Not for 1st 25 state employees	No	Yes: up to 25 state employees can be granted leave unless there is a written order by the governor
NC	NC Gen. Stat. 166A-32	State employees certified by the ARC	Yes: 15 work days per 12-mo period	Yes: only applied to disasters in the US	No	Yes
ND	ND Cent. Code 54-06-14.3	State employees certified by the ARC	Yes: 5 d per calendar year	No	Yes: disaster level II or higher or a declared disaster	Yes
NE	R.R.S. Neb. 81–1391	State employees certified by the ARC	Yes: 15 work days per year	Yes: only applied to disasters in NE	No	Yes
NH	RSA 94 3-c	State employees certified by the ARC	Yes: 15 working days per fiscal year	No	Yes: disaster level III or higher	Yes
NY	NY CLS Pub A 2850-a; CLS Civ. S 82-b; CLS Gen Num 92-c	Public officer, state employee and school district employees	20 days per calender year	No	No	Yes
OK	74 OK St. 840–2.24	State employees certified by the ARC or US Air Force Aux. Air Patrol	Yes: 15 d per 12-mo period	Yes; only applied to disasters in OK	Yes: disaster level III or higher	Yes: up to 500 state employees can be granted leave
OR	ORS 401.378	State employees certified by the ARC	Yes: 15 d per 12-mo period	Yes: only applies to disasters in OR	Yes: disaster level II or higher	Yes
PR	3 L.P.R. A. 703F-2	Government employees certified by the ARC	Yes: 30 d per 12-mo period	No	Yes: emergency declaration in effect	No
RI	RI Gen. Laws 28–49-3	State employees certified by the ARC	Yes: 10 working d per calendar year	Yes: only applies to disasters in RI	No	Yes
SD	S.D. Codified Laws 3-6c-21;3–6c-21	Public employees certified by the ARC	Yes: 10 d per calendar year	No	Yes	Yes
TN	Tenn. Code Ann. 50–1-309	Volunteer firefighters	No	No	No	Optional
VT	3 V.S.A. 265	State employee certified by the ARC	Yes: 15 d per fiscal year	Yes: if disaster services provided outside VT, payment must be authorized by the governor	If services not provided in VT, disaster level III or higher or emergency declaration by the governor	Yes
WV	W. Va. Code 15–5-15a	State employees certified by the ARC	Yes: 15 d per year	No	No	Yes

Note. ARC = American Red Cross; EMS = emergency medical services; IEMA = Illinois Emergency Management Agency.

performed outside of Vermont), comprehensive benefits ensue after a disaster level III or higher is issued or after an emergency is declared.

Economic Limitations

Employers of nongovernmental volunteers in Iowa can determine whether they can leave work to volunteer and can deduct the absent time from their pay.[17] A reduction of pay can also result for volunteers from the Northern Mariana Islands.[18] In Palau, volunteers will not receive compensation from the national government.[19] A volunteer firefighter in Maine can be charged lost time against regular pay or leave time.[20]

Michigan limits the number of state employees who can be granted paid leave during a fiscal year to 50.[21] West Virginia volunteer firefighters and EMS personnel can lose accumulated leave time and pay if they respond to an emergency before the beginning of the workday.[22] In North Dakota, a volunteer emergency responder can be terminated for not attempting to inform their employer before deployment.[23]

Few jurisdictions address benefits during training. Volunteers in the US Virgin Islands can take leave with pay if training with the ARC.[24] In California, certain volunteer firefighters, law enforcement officers, and EMS personnel can take temporary leave to participate in training.[25] Conversely, in the Federated States of Micronesia, unpaid volunteers will not receive compensation from the government during training.[26] Volunteers in Guam do not receive pay during training unless they use personal or vacation leave.[27]

SUMMARY

Current employment laws across the United States lack uniformity, and standardized minimum benefits are not afforded to all volunteers. Federal law in other arenas, however, has set minimum standards for state compliance, such as privacy protections under the Health Insurance Portability and Accountability Act, essential benefits required by the Patient Protection and Affordable Care Act, and Medicaid mandates. By contrast, the European Union provides workers in its member countries with consistent, generous protections and benefits.[28]

Furthermore, the limitations some jurisdictions place on volunteers are counterintuitive, hinder volunteer participation, and diminish the provision of critical services. Linking the provision of comprehensive benefits to governmental employment and excluding other work environments is inequitable. Limiting benefits to geographic locations deters intrajurisdictional collaborations essential to address major disasters; however, predicating workers' benefits on emergency declarations makes sense. The ARC responds to nearly 64 000 disasters each year; however, 90% of those are house fires.[29] It is almost certain that a disaster declaration at some level would be issued before a multistate, protracted response is warranted. Arbitrary time frame restrictions, especially as few as five days per year, force volunteers to choose between continuing benefits and deployment. Finally, because training is a critical component of emergency preparedness, comprehensive benefits should accrue during reasonable and compulsory instruction periods.

CONCLUSIONS

The development of ELI benefited greatly from the successful engagement of an academic–public health practice–private sector partnership, as well as from end user feedback throughout the entire project period. The utility of ELI was clearly demonstrated when used to compare workers' benefit laws across 60 jurisdictions. The use of ELI revealed serious shortcomings and inconsistencies with respect to volunteers' benefits.

All volunteers deserve equal protection, which will strengthen response capabilities, enhance community resiliency, and, ultimately, improve public health. We, as a nation, expect volunteers to help when disasters strike. By standardizing employment benefits and removing legal barriers, not only will volunteer recruitment and deployment be improved, but those who serve selflessly will be protected while they are protecting us. AJPH

CONTRIBUTORS

All of the authors contributed equally to this commentary.

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REFERENCES

1. US Geological Survey. How can climate change affect natural disasters? Available at: https://www.usgs.gov/faqs/how-can-climate-change-affect-natural-disasters-1?qt-news_science_products=0#qt-. Accessed January 1, 2018.

2. University of North Texas. UNT experts can discuss Tropical Storm Gustav and Hurricane Katrina's 3rd anniversary. 2008. Available at: http://news.unt.edu/news-releases/unt-experts-can-discuss-tropical-storm-gustav-and-hurricane-katrinas-3rd-anniversary. Accessed January 1, 2018.

3. Brown E. Assessing the value of volunteer activity. *Nonprofit Volunt Sect Q.* 1999;28:3–17.

4. International Federation of Red Cross and Red Crescent Societies. The value of volunteers. 2011. Available at: http://www.ifrc.org/Global/Publications/volunteers/IFRC-Value%20of%20Volunteers%20Report-EN-LR.pdf. Accessed December 29, 2017.

5. US Department of Health and Human Services. National health security strategy and implementation plan: 2015–2018. Available at: https://www.phe.gov/Preparedness/planning/authority/nhss/Documents/nhss-ip.pdf. Accessed November 25, 2015.

6. Watson M, Selck F, Rambhia K, Morhard R, Franco C, Toner E. Medical Reserve Corps volunteers in disasters: a survey of their roles, experiences, and challenges. *Biosecur Bioterror.* 2014;12(2):85–93.

7. Hodge JG, Gable LA, Calves SH. Volunteer health professionals and emergencies: assessing and transforming the legal environment. *Biosecur Bioterror.* 2005;3(3):216–223.

8. Pandemic and All-Hazards Preparedness Reauthorization Act of 2013. Pub L No. 113-5, HR 307. 113th Congress (March 13, 2013).

9. Public Health and Medical Preparedness. Homeland Security Presidential Directive 21 (October 13, 2007).

10. Walsh L, Subbarao I, Gebbie K, et al. Core competencies for disaster medicine and public health. *Disaster Med Public Health Prep.* 2012;6:44–52.

11. MRC volunteer core competencies. March 2015. Available at: http://archived.naccho.org/topics/emergency/MRC/resources/upload/Factsheet-DMPH-Competencies-with-MRC-Framework-Final.pdf. Accessed November 30, 2015.

12. Institute of Medicine. *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century.* Washington, DC: National Academies Press; 2003.

13. Covich JR, Parker CL, White VA. The practice community meets the ivory tower: a health department/academic partnership to improve public health preparedness. *Public Health Rep.* 2005;120(suppl 1):84–90.

14. McCullough JM. Successful academic–public health practice collaboration: what works from the public health workforce's perspective. *J Public Health Manag Pract.* 2015;21(suppl 6):S121–S129.

15. Lasker RD, Weiss ES. Broadening participation in community problem solving: a multidisciplinary model to support collaborative practice and research. *J Urban Health.* 2003;80(1):14–47; discussion 48–60.

16. Anderson E, Tremper C, Thomas S, Alexander CW. Measuring statutory law and regulations for empirical research. *Evaluation Review.* 2010;34(3): 242–266.

17. Volunteer job protection. Iowa Code §100B.14 (2011).

18. Workers' Benefits: Disaster Volunteer Protections. 4 CMC 9701.

19. Workers Benefits: Disaster Volunteer Compensation. 34 PNC 5311(b).

20. Labor and Industry, Employment Practices, Firefighter, Absence for Emergency Response. MRS Title 26, Chapter 7, Subchapter 4-C, §809.

21. Emergency Management Act. MCLS §30.411a (1976).

22. Labor, Wage Payment and Collection, Employers prohibited from discharging employees for time lost as volunteer firemen or emergency medical service attendant. WV Code Chapter 21, Art. 5, §21-5-17 (2011).

23. Military, Volunteer Emergency Responder Job Protection. ND Century Code, Title 37, Chapter 29, §3 (2013).

24. 3 VIC 265.

25. California Labor Code 230.4. Division 2. Employment regulation and supervision. Part 1. Compensation, Chapter 1. Payment of wages.

26. Workers' Benefits: Unpaid Volunteer. 41 FSMC 709(1).

27. Workers' Benefits: Certification as Disaster Service Volunteer. 4 GCA 16105.

28. Fisher C, Putman C, Hassani A. European Union labor law—a comparison between the labor laws of the United States and the European Union. *Business and Management Review.* 2016; 7(5):43–50.

29. American Red Cross. Disaster relief. Available at: http://www.redcross.org/about-us/our-work/disaster-relief. Accessed January 1, 2018.