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## Nurses [sic] knowledge of mass casualty emergency situations, disasters and related laws regulating nursing practice in Michigan and Ohio

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# Nurses [sic] knowledge of mass casualty emergency situations, disasters and related laws regulating nursing practice in Michigan and Ohio

## Abstract

A survey was conducted among 51 emergency department nurses in both Michigan and Ohio from 2008 to 2009. A comparative design was used to analyze the surveyed data. The purpose of the study was to describe and compare the knowledge level of emergency department nurses with regards to disaster nursing, emergency preparedness, and correlating related nursing laws in their respective states of licensure. Results showed that there is no significant correlation between knowledge level of emergency and disaster preparedness and related laws to the state in which a nurse is licensed, but nurses in Michigan reported having more instruction in their nursing curriculum about this topic. Overall, the participants in both states expressed minimal knowledge about emergency and disaster preparedness and related laws; this is not up to current standards of expected practice.

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**NURSES KNOWLEDGE OF MASS CASUALTY EMERGENCY  
SITUATIONS, DIASASTERS AND RELATED LAWS REGULATING  
NURSING PRACTICE IN MICHIGAN AND OHIO.**

By

Ashley Elizabeth Sandmann

A Senior Thesis Submitted to the

Eastern Michigan University

Honors College

In Partial Fulfillment of the Requirements for Graduation

With Honors in Nursing

## ABSTRACT

A survey was conducted among 51 emergency department nurses in both Michigan and Ohio from 2008 to 2009. A comparative design was used to analyze the surveyed data. The purpose of the study was to describe and compare the knowledge level of emergency department nurses with regards to disaster nursing, emergency preparedness, and correlating related nursing laws in their respective states of licensure. Results showed that there is no significant correlation between knowledge level of emergency and disaster preparedness and related laws to the state in which a nurse is licensed, but nurses in Michigan reported having more instruction in their nursing curriculum about this topic. Overall, the participants in both states expressed minimal knowledge about emergency and disaster preparedness and related laws; this is not up to current standards of expected practice.

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## Introduction

### *Background*

During one of my professional development classes, we were asked to do a presentation about nursing preparedness during disaster situations. My group created a survey that assessed registered nurses' (RNs) knowledge about this topic. We disseminated our survey to registered nurses that were in our clinical sites which comprised of nurses in Obstetrics, Pediatrics, and an Emergency Department (ED) in Michigan. As we compiled our findings, we realized that nurses' understanding of laws and procedures that related to emergency and disaster situations were not as sound as we had thought. As a result of the survey we concluded that only 30% of the nurses surveyed answered all of the questions correctly. This lack of awareness sparked my interest into further researching this topic.

I was curious to find out what percentage of nurses in Emergency Departments specifically were knowledgeable about disaster nursing laws because they dealt with these situations more frequently than other nurses. Although I was completing my baccalaureate degree in nursing (BSN) studies and was conducting this study at a university in Michigan, I grew up in Ohio and planned to return there after graduation. Therefore, I decided to survey ED nurses in both Michigan and Ohio.

### *Problem statement*

Practicing nurses are not aware of the International Nursing Coalition for Mass Casualty Education (INCMCE) competency requirements for emergency or disaster situations (see Appendix A). Also, schools of nursing need to include disaster nursing content based on the INCMCE recommendations.

### *Purpose of the Study*

Three purposes guiding this study were to: 1) describe and compare the knowledge level among emergency department RNs with regard to disaster nursing and related laws for nurses in Michigan and Ohio; 2) describe and compare the opinions of emergency department RNs with regard to integrating disaster nursing and related laws for nurses into nursing curriculum; and 3) describe and compare the level of knowledge perceived to be acceptable among RNs who recommend integrating disaster nursing and related laws for nurses into nursing curriculum.

### *Research Questions*

The following four research questions undergird this study:

1. What is the knowledge level among emergency department RNs related to emergency preparedness?
2. What is the content knowledge among emergency department RNs related to disaster nursing laws in their respective states?
3. What are the opinions of emergency department RNs regarding the integration of disaster nursing and related laws for nurses into nursing curriculum?
4. What is the level/amount of content education perceived to be acceptable among emergency department RNs who recommend integrating disaster nursing and related laws for nurses into nursing curriculum?

### *Contribution to Nursing*

With this research, I hope to reinforce contention that emergency and disaster preparedness and related laws should be incorporated in all nursing curriculum. The last

two questions of the survey ask the nurse to reflect on past and possibly present experiences related to disaster and emergency nursing. By using reflection questions, I hoped to provoke the nurses to evaluate their individual values about disaster nursing and think about how they will act the next time they are in an emergency or disaster situation. Hopefully the survey sparked an interest in some nurses to research the correct answers to the questions and laws about the topic and share them with colleagues.

#### *Limitations of the study*

The limitations of this study include: 1) limited generalizability due to a nonrandom sample; 2) potential self-report bias; 3) no cause and effect relationship can be obtained from the study results; and 4) potential for skewed responses due to input from colleagues

#### *Definition of Terms*

*Disaster nursing laws:* amount of reliable content related to the law(s) in the state in which they are licensed, either Michigan or Ohio, to be able to practice safely.

*Knowledge:* the amount of reliable nursing content related to emergency and disaster preparedness to be able to practice safely.

*Mass casualty incidents (MCIs):* an event that generates more patients than available resources can manage by only using routine procedures.

*Registered Nurse:* a graduate of a school of nursing, whether an Associate Degree in Nursing (AND) or Bachelor of Science in Nursing (BSN) degree, with a license to practice as a registered nurse in either Michigan, Ohio, or both.

## Review of the Literature

In August, 2003 the International Nursing Coalition for Mass Casualty Education (INCMCE) released a report titled, *Educational Competencies for Registered Nurses Responding to Mass Casualty Incidents* which outlines what all nurses must know to respond to mass casualty incidents (MCIs) as well as protect themselves and others. The coalition recommends that nurses from novice to expert have a basic knowledge and ability to appropriately respond to MCIs.

While not all nurses must be prepared to be “first responders” to an emergency or MCI including chemical, biological, radiologic, nuclear or explosive event or casualties; “All entry-level nursing education programs should integrate the core competencies throughout the curriculum, and practicing nurses should receive additional training, through continuing education opportunities, to enhance their ability to respond when needed” (p.8).

Since 2003, colleges of nursing have been slowly integrating emergency and disaster preparedness content into their curriculums. The American Association of Colleges of Nursing (AACN) publishes standards that every affiliated nursing program are expected follow. In the newest edition of *The Essentials of Baccalaureate Education for Professional Nursing Practice (2008)*, it states that baccalaureate programs should prepare nurses to, “understand one’s role and participation in emergency preparedness and disaster response with an awareness of environmental factors and the risks they pose to self and patients” (p. 32)

According to both Ohio and Michigan nursing laws and standards of practice, one is legally responsible for any actions that they take. Shank & Souza (2006) stress the

importance of making sure that one has permission to assist a person in need of help due to the fact that one is legally liable for their actions (p.80).

There are many acts and compacts that give reciprocity to licensed professionals during disaster situations to practice outside their state of licensure. The Model State Emergency Health Powers Act allows reciprocity but only during emergencies declared by the governor of the state. The Nurse Licensure Compact and The Interstate Civil Defense and Disaster Compact also allow reciprocity but Michigan and Ohio have not joined either of these compacts (Hall, Render, Killian, Health & Lyman, 2006).

## Methodology

### *Design of the study*

A comparative descriptive design (see Figure 1) was chosen for this study, because there is a lack of current research available which has investigated RNs' knowledge and opinions of disaster nursing preparedness in nursing curriculum, particularly the laws related to nursing practice. Therefore, this design allowed use of a survey tool that combined quantitative and qualitative methods to examine the knowledge differences between two intact groups of RNs without manipulating the independent variable and a potentially clearer description of the variables that must occur naturally in ERs. The results of the study were analyzed in order to determine the similarities and the differences between four groups of registered nurses representing four different hospital emergency departments in two different states.

This type of design is useful in generating hypotheses and in developing theories and it allows for a clearer description of phenomena before causality is examined with an experimental study (Burns & Grove, 2005). There are some weaknesses in using a comparative descriptive design. These include a lack of randomization, control, and manipulation design; the study results usually cannot be generalized to the population studied; and there is an increased risk for

researcher bias. On the other hand, strengths of this design are that it provides knowledge in areas which has little or no previous research.

#### a. Population Sample and Settings

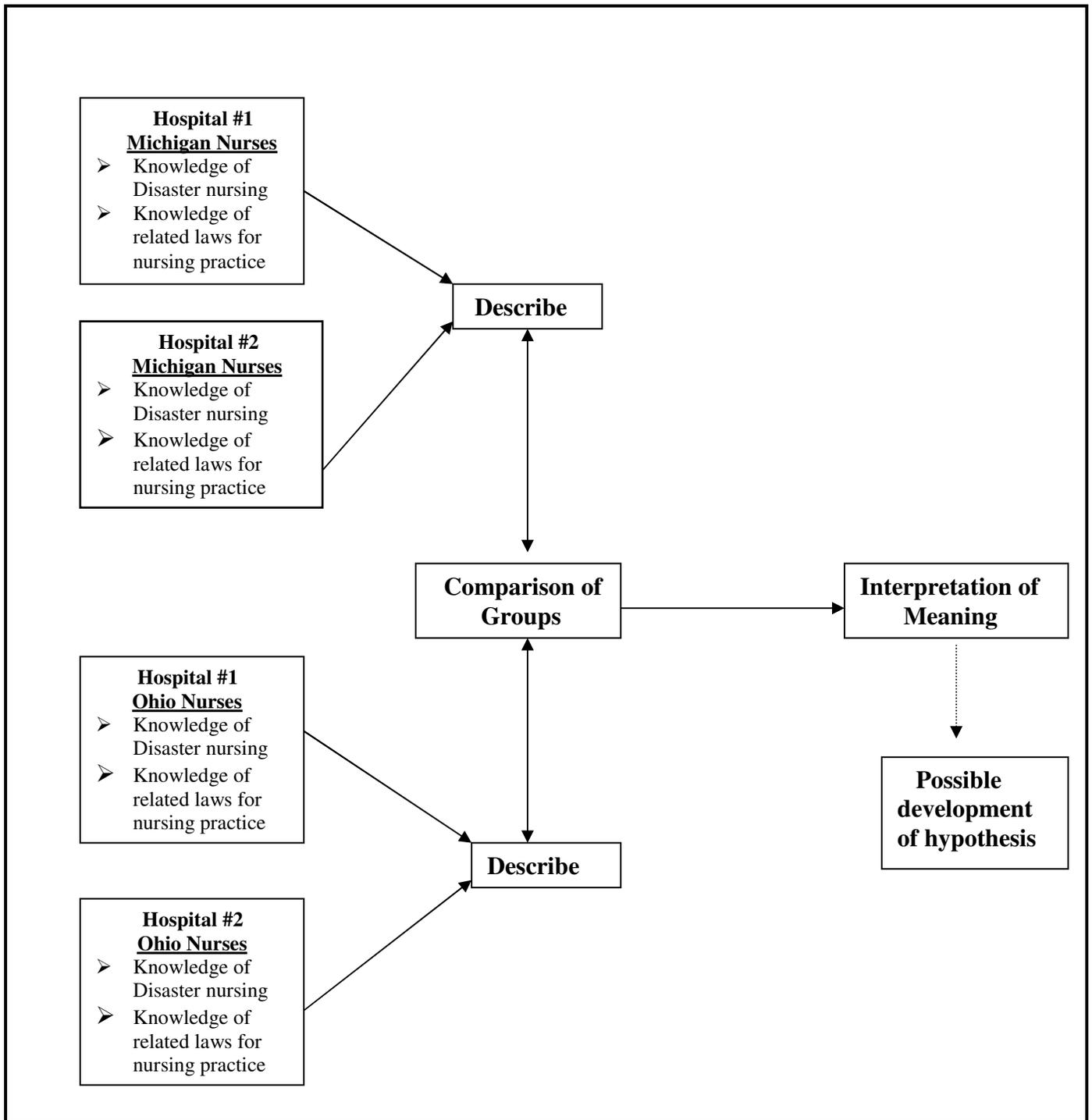
This study was comprised of a convenience sample of emergency department registered nurses (RNs) at two hospitals in southeastern Michigan and two hospitals in northeastern Ohio. The eligibility criteria were nonexclusive to ethnic background, gender, or type of undergraduate registered nursing program completed. The inclusion sampling criterion consisted of being employed as a registered nurse in the emergency department of one of the hospitals included the study. In the original study design, BSN preparation for nurse participants was an inclusion criteria. After meeting with the hospital administration it was found that there was a large number of ADN's in the various EDs and, to capture this data, the ADN's were included in the study without changing the study questions. This inclusion did not skew any of the research questions. The sample consists of 51 nurses, 48% (24) licensed in Michigan and the other 52% (27) licensed in Ohio.

A weakness in using convenience sampling is the lack of control for biases. However, convenience samples are usually readily accessible and inexpensive. Also, convenience sampling allows information to be acquired in areas which have often not been explored (Burns & Grove, 2005). Convenience sampling was used in this study because the sample participants were accessed easily.

#### Settings (Hospitals)

For the same reasons as stated above, a convenience sampling of 4 hospitals (2 in Michigan and 2 in Ohio) were selected for ease of location, travel, and access to entry in both states. All hospitals were large tertiary level facilities located in the central areas of relatively large cities.

Figure 1. Comparative Descriptive Design for Study of ED Nurses in Michigan and Ohio



## b. Data collection procedures

In person contact was made to four Nurse Educators and Directors of the Emergency Departments representing the selected hospitals where the surveys were disseminated to gain permission for the study. Verbal and written approval was obtained from the nurse leaders on the units used to administer the survey. A verbal explanation of the purpose of the study was given and participants signed an Informed Consent form before taking the survey. The explanation and consent form explained that their participation was completely voluntary, without financial benefit, and acknowledges their consent to participate in the study. In addition, the participants were informed verbally and in writing that: 1) their answers to the survey will be kept completely anonymous, 2) there are no apparent risks for participation or negative consequences for them if they chose not to participate in the study; 3) all research data is be stored in a secured, locked file box for a period of one year and then destroyed; and, 4) the aggregate data results may be used for publication in professional journals and at professional conferences. Further information on the consent form advised participants that the principle benefits of the study included gaining insight about nurses' knowledge of emergency preparedness and disaster laws related to nursing practice. Such awareness will help to guide nursing programs in developing this content and including it in nursing curriculum (see Appendices B, C, and D for an examples of the letter of permission letter of explanation, informed consent, and survey tool). The survey tool was disseminated and completed by registered nurses working in the Emergency Departments of four hospitals, two located in Michigan and two in Ohio Surveys were distributed between the months of December 2008 and January 2009.

Questions were readily answered during the time of the survey. All responses were submitted independently from the participant and did not include input from other sources of reference (people or texts). Once the surveys were completed the participants placed the tool in a secure box which remained unopened until all data collection was ended.

SPSS v. 15 and Microsoft Office Excel (2003) spreadsheets were used to compile the data. Data was kept on a “dedicated study” memory stick and stored in a locked box in a secure location along with surveys and informed consent forms.

### c. Instrument

The researcher-developed survey tool,(see Appendix D), was designed to determine the knowledge of emergency department registered nurses (RNs) about emergency situations, disaster nursing and related laws for nursing practice in their respective states. This 2-page, 7 question survey is comprised of two basic sections: a) demographics and b) general knowledge and opinions. An expert review team consisting of two nursing faculty members was selected to determine the content validity of the survey. The review team had expertise in research methodology, statistics, and instrument development. The expert team reviewed the survey’s format, item style, item content, comprehensiveness/ readability, and appropriateness to nurses.

Content validity was confirmed by an inter-rater agreement of 1.00 and the chosen modality was regarded as being within the domain of content. This instrument was developed to measure use at one point in time. Formal measures of reliability, such as tests of internal consistency and test-retests, were not of primary concern for this instrument because the measures used to identify items and measure constructs were not

expected to remain stable over time. However, informal measurement of reliability was based on a review of surveys which were congruent with the area of interest, the administration methods, and the data analysis methods. For this instrument, these aspects were controlled by the supporting literature, the expert review team, and the pilot study itself (Braun, 2002).

#### d. Data Analysis

The research questions provided direction for the data analysis of this study. The results of the survey were coded and analyzed using Microsoft Office Excel (2003) and SPSS v. 15. Descriptive statistics (frequencies and percentages) were used to describe the samples and to analyze the study results. Inferential statistics were performed using the *t*-test in order to determine if there are any significant knowledge differences between nurses in Michigan and those in Ohio with regard to the study variables.

#### e. Ethical Considerations

Permission to conduct this study was obtained from Eastern Michigan University's College of Health & Human Services Human Subject Review Committee in November 2008 along with written permission from all four hospitals. All participants completed an informed consent before taking the survey. There were no negative repercussions for nurses who chose not to participate as well as for those who did complete to survey. Similarly, there were no financial benefits offered for study participants.

## Results and Analysis of the Study

### *Demographic Data*

The demographic data for the sample is presented in Table 1 along with demographic data by state of licensure and degree. This study was comprised of 51 nurses where 88% (n = 44) were female, 12% (n = 6) were male, and one did not respond. The majority of participants indicated they were between 31-40 years old (41.7%, n = 20). The primary area of practice of the nurses surveyed was the Emergency Department where 46 of the nurses were then working. The other 5 nurses either work in a Pediatric Emergency Department (n = 2), Case Management (n = 2), or did not respond to the question (n = 1).

Past areas of practice were also recorded, but were not used in this study. Sixty-six (66%; n = 33) of the participants reported working in 1 or 2 different areas. The most frequently reported past area of practice excluding Emergency Departments was an Intensive Care Unit. Of all participants, 18 of the 51 nurses reported having worked in an Intensive Care Unit. The mean number of years of practice of all of the nurses surveyed was 14.2 years (SD = 8.6). Nurses who are licensed in Ohio made up 52% (n = 26) of the nurses surveyed and the other 48% (n = 24) are licensed in Michigan, one person did not respond. Nurses with a Bachelors of Science in Nursing represented 60.8% (n = 31) while 39.2% (n = 20) represented nurses with an Associates Degree in Nursing.

Subgroups (i.e., Degree type, and State of Licensure) were examined for differences on the demographic variable. For this examination statistical problems presented with maintaining sufficient group size for all four age groups in the chi-square analyses. To increase group size for examination of age, the categories were further

combined to create two groups, those 21 to 40 and 41 to 65 and over. No significant differences were noted on the demographic variables of age, years of practice, gender or state of licensure between the ADN and BSN groups. Additionally no significant difference between the Michigan and Ohio nurses was found for the variables of gender or (as noted above) type of degree. Significant differences were found between the Michigan and Ohio nurses for the variable of age and years of practice. The Michigan nurses were more likely to be older than the Ohio nurses ( $X^2 = 8.367$ ,  $df = 1$ ,  $p = .004$ ), and similarly they had a significantly higher number of years of practice experience ( $t = 2.54$ ,  $df = 48$ ,  $p = .014$ ).

Table 1

*Results of Demographic Data Analysis*

	ADN	BSN	MI	OH	Total
	% (n)	% (n)	% (n)	% (n)	% (n)
Age <sup>a</sup>					
21-30	5.0 (1)	28.6 (8)	4.3 (1)	32.0 (8)	18.8 (9)
31-40	40.0 (8)	42.9 (12)	34.8 (8)	48.0 (12)	41.7(20)
41-50	30.0 (6)	25.0 (7)	43.5 (10)	12.0 (3)	27.1 (13)
51-65+	25.0 (5)	3.6 (1)	17.4 (4)	8.0 (2)	12.5 (6)
Total	100 (20)	100 (28)	100 (23)	100 (25)	100 (48)
Sex					
Female	95.0 (19)	83.3 (25)	83.3 (20)	92.3 (24)	88.0 (44)
Male	5.0 (1)	16.7 (5)	16.7 (4)	7.7 (2)	12.0 (6)
Total	100 (20)	100 (30)	100 (24)	100 (26)	100 (50)
Current Area of Practice					
ED	90.0 (18)	93.3 (28)	91.7 (22)	92.3 (24)	92.0 (46)
Case Management	5.0 (1)	3.3 (1)	0.0 (0)	7.7 (2)	4.0 (2)
Pediatric ED	5.0 (1)	3.3 (1)	8.3 (2)	0.0 (0)	4.0 (2)
Total	100 (20)	100 (30)	100 (24)	100 (26)	100 (50)
Total Number of Past Areas of Practice Reported					
0	10.0 (2)	13.3 (4)	4.2 (1)	19.2 (5)	12.0 (6)
1	35.0 (7)	36.7 (11)	29.2 (7)	42.3 (11)	36.0 (18)
2	35.0 (7)	26.7 (8)	33.3 (8)	26.9 (7)	30.0 (15)
3	20.0 (4)	16.7 (5)	25.0 (6)	11.5 (3)	18.0 (9)
4	0.0 (0)	3.3 (1)	4.2 (1)	0.0 (0)	2.0 (1)
5	0.0 (0)	3.3 (1)	4.2 (1)	0.0 (0)	2.0 (1)
Total	100 (20)	100 (30)	100 (24)	100 (26)	100 (50)
State of Licensure					
Michigan	50.0 (10)	46.7 (14)	-	-	48.0 (24)
Ohio	50.0 (10)	53.3 (16)	-	-	52.0 (26)
Total	100 (20)	100 (30)			100 (50)
Degree Earned					
ADN	-	-	41.7 (10)	38.5 (10)	39.2 (20)
BSN	-	-	58.3 (14)	61.5 (16)	60.8 (30)
Total			100 (24)	100 (26)	100 (50)
Mean Years of Practice (SD) <sup>a</sup>	15.8 (8.9)	12.1 (17.9)	17.2 (7.3)	11.5 (8.4)	14.2 (8.4)

<sup>a</sup>  $P < .05$  between State of Licensure groups

### *Research Questions*

The research questions are individually presented below. For all of the research questions, multiple survey items related to an individual research question. Where multiple survey items were related to a single research question the responses to the survey items were combined to create a single measurement to give an overall evaluation of the question. Survey items were combined to report a percent correct item score. Scores were calculated to create a single item that assessed the knowledge level of nurses about emergency and disaster preparedness, and for laws correlating to this issue.

**Research question #1: What is the knowledge level among emergency department RNs related to emergency preparedness?**

There were six questions, (question 1, 2, 3, 4a, 4b and 5), in the survey that assessed the nurse's knowledge of emergency and disaster situations. As noted above, responses to individual questions are noted in Tables 2 and 3 by the full sample and identified sub-groups. None of the nurses who completed the survey answered all six of the questions correctly. The results of Survey Question #1, which asked if as a nurse are you required to stop and provide help if you come upon an emergency or disaster situation, showed that 80.6% (n = 25) of BSN nurses answered the questions correctly where only 65% (n = 13) of ADN nurses answered correctly. Nurses by state licensure revealed that 80.8% (n = 21) of nurses licensed in Ohio answered correctly while 66.7% (n = 16) of Michigan nurses answered correctly. Survey Question #2 asks if one is legally responsible for any actions that they take. The results indicated that ADN's have a lower knowledge level about this topic compared to BSN nurses. According to Survey Question #3, all nurses surveyed show that only 33.3% (n = 17) learned about nursing laws

regarding disaster situation and emergency preparedness in their nursing programs curriculum. This varies drastically by state where 45.8% (n = 11) of nurses in Michigan learned about this topic in the curriculum compared to 23.1% (n = 6) in Ohio.

When answering Survey Question #4a pertaining to their role and the employers guidelines regarding emergency and disaster situation, both sub-groups of all Michigan nurses (n = 24), and all ADNs (n = 20) responded 100% correct. Only 36% (n=18) of all nurses answered question 4b correctly which asked if they knew their role outside their place of work if an emergency or disaster occurred. Survey Question #5 was difficult for many nurses to answer. It asked if during a nation disaster, are you able to practice in a state where you are not licensed. Seven nurses left this question blank and of those that responded only 33.3% (n=17) answered this question correctly. Overall nurses in Ohio performed better on question 5 than nurses in Michigan, scoring 50% (n = 12) and 26.3% (n = 5) respectively.

To capture a single summative measure of general knowledge related to emergency preparedness to answer this research question, a mean score was created for Survey Questions 1, 2, 3, 4a, 4b and 5 (see Table 4.) No participant scored all items correctly (100%) or all items incorrectly (0%). Participants could score between 0 and 6 based on how many questions they answered correctly about emergency and disaster preparedness and laws. The overall sample mean was 5.39 (SD = 1.08). The t-test failed to identify any significant group differences between the BSNs and ADN, or the Michigan (MI) and Ohio (OH) subgroups.

Table 2

*Responses to Survey Items by State of Licensure of Respondent, and Total Sample (n = 51)*

	<b>MI</b>		<b>OH</b>		<b>Total</b>	
	% Yes (n)	% No (n)	% Yes (n)	% No (n)	% Yes (n)	% No (n)
<b>1. In a disaster or emergency situation, as a nurse, are you required by law to stop and provide additional help?</b>	33.3 (8)	<b>66.7 (16)</b>	19.2 (5)	<b>80.8 (21)</b>	25.5 (13)	<b>74.5 (38)</b>
<b>2. During a disaster or emergency situation, are you legally responsible for any actions that you take?</b>	<b>60.8 (17)</b>	29.2 (7)	<b>65.4 (17)</b>	34.6 (9)	<b>68.6 (35)</b>	31.4 (16)
<b>3. Did you learn about nursing laws regarding disaster situations and emergency preparedness in your nursing programs curriculum?</b>	<b>45.8 (11)</b>	54.2 (13)	<b>23.1 (6)</b>	73.1 (19)	<b>33.3 (17)</b>	64.7 (33)
<b>4a. Do you know your expected role according to your employer's guidelines in and emergency or disaster situation that occurs in or around your place of work?</b>	<b>100 (24)</b>	0.0 (0)	<b>88.5 (23)</b>	11.5 (3)	<b>94.1 (48)</b>	5.9 (3)
<b>4b. Do you know your expected role in an emergency or disaster situation that occurs outside of your place of work?</b>	<b>43.5 (10)</b>	56.5(13)	<b>30.8(8)</b>	69.2 (18)	<b>36.0 (18)</b>	64.0 (32)
<b>5. During a national disaster, are you able to practice nursing in a state that you are not licensed?</b>	73.7 (14)	<b>26.3 (5)</b>	50.0 (12)	<b>50.0 (12)</b>	52.9 (27)	<b>33.3 (17)</b>

*Note.* Correct direction of answer to survey question in bold and italics

Table 3

*Responses to Survey Items by Education Degree of Respondent, and Total Sample (n = 51)*

	ADN		BSN		Total	
	% Yes (n)	% No (n)	% Yes (n)	% No (n)	% Yes (n)	% No (n)
<b>1. In a disaster or emergency situation, as a nurse, are you required by law to stop and provide additional help?</b>	35.0 (7)	<b>65.0 (13)</b>	19.4 (6)	<b>80.6 (25)</b>	25.5 (13)	<b>74.5 (38)</b>
<b>2. During a disaster or emergency situation, are you legally responsible for any actions that you take?</b>	<b>60.0 (12)</b>	40.0 (8)	<b>74.2 (23)</b>	25.8 (8)	<b>68.6 (35)</b>	31.4 (16)
<b>3. Did you learn about nursing laws regarding disaster situations and emergency preparedness in your nursing programs curriculum?</b>	<b>30.0 (6)</b>	70.0 (14)	<b>35.5 (11)</b>	61.3 (19)	<b>33.3 (17)</b>	64.7 (33)
<b>4a. Do you know your expected role according to your employer's guidelines in and emergency or disaster situation that occurs in or around your place of work?</b>	<b>100 (20)</b>	0.0 (0)	<b>90.3 (28)</b>	9.7 (8)	<b>94.1 (48)</b>	5.9 (3)
<b>4b. Do you know your expected role in an emergency or disaster situation that occurs outside of your place of work?</b>	<b>50.0 (10)</b>	50.0 (10)	<b>26.7 (8)</b>	73.3 (22)	<b>36.0 (18)</b>	64.0 (32)
<b>5. During a national disaster, are you able to practice nursing in a state that you are not licensed?</b>	47.1 (8)	<b>42.9 (9)</b>	70.4 (19)	<b>29.6 (8)</b>	52.9 (27)	<b>33.3 (17)</b>

*Note.* Correct direction of answer to survey question in bold and italics

Table 4  
*Respondent Performance on Knowledge Items as % Correct*

Number Items Correct (% Score)	ADN (n = 20) Number Items Correct (% Score)	BSN (n = 31) Number Items Correct (% Score)	MI (n = 24) Number Items Correct (% Score)	OH (n = 26) Number Items Correct (% Score)	All (n = 51) Number Items Correct (% Score)
0 (0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0)
1 (16.7)	1 (5.0)	1 (3.2)	1 (4.2)	1 (3.8)	3.9 (2)
2 (33.3)	4 (20.0)	4 (12.9)	3 (12.5)	5 (19.2)	15.7 (8)
3 (50.0)	5 (25.0)	13 (41.9)	9 (37.5)	8 (30.8)	35.3 (18)
4 (66.7)	4 (20.0)	10 (32.3)	6 (25.0)	8 (30.8)	27.5 (14)
5 (83.3)	6 (30.0)	3 (9.7)	5 (20.8)	4 (15.4)	17.6 (9)
6 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0)

**Research Questions #2: What is the content knowledge among emergency department RNs related to disaster nursing laws in their respective states?**

This question presents a subset of data used to answer question one regarding knowledge level, discussed above. Specifically, questions 1, 2 and 3 addressed the content knowledge of nursing laws related to emergency and disaster nursing.

Participants could score between 0 and 3 based on how many questions they answered correctly about emergency and disaster preparedness laws. When an analysis was done of just these three questions, it was found that the overall sample mean of correct answers was 1.76 (SD = 0.79). This indicates that for the three questions on the survey about laws pertaining to emergency and disaster preparedness, on average participants scored less

than two correct for these three items. There was no significant difference between the means of correct answers whether the nurse was licensed in Michigan or Ohio or if their degree was a BSN or ADN.

**Research Question #3: What are the opinions of emergency department RNs regarding the integration of disaster nursing and related laws for nurses into nursing curriculum?**

To elicit the opinions of nurses question 3 asked about the presence of emergency preparation content in their nursing education program and allowed for them to include additional summary comments. Unfortunately out of the sample, only 5 additional comments were made that captured nurse opinions regarding integration of this content into nursing curricula.

As stated above, only 33.3% (n=17) of nurses surveyed learned about emergency and disaster preparedness and laws in their curriculum. According to the results, more nurses in Michigan answered that they had learned about these issues in their curriculum versus nurses in Ohio. Three nurses left comments on their surveys that said they had learned about emergency and disaster preparedness and laws through their work and not school. Two other nurses indicated that when they went to school, which was many years ago, they did not learn about the topic at all.

**Research Question #4: What is the level/amount of content education perceived to be acceptable among emergency department RNs who recommend integrating disaster nursing and related laws for nurses into nursing curriculum?**

This question was unable to be answered. The survey items did not directly inquire about the level/amount of disaster nursing content and laws that should be integrated into nursing curriculum.

### Report of the Study

Many conclusions can be drawn about the answers of the research questions. Table 4 shows how many questions about emergency and disaster preparedness knowledge nurses answered correctly. Most nurses only answered half of the questions correctly. This is extremely disturbing because after events such as 9/11, Hurricane Katrina and emergencies that happen on a daily basis, one would think that these type of questions would be answered with ease. Over the past 10 years many devastating events have brought increased awareness about disaster and emergency preparedness to the public. Nurses should hold themselves accountable and make sure that they know the policies that specifically affect them regarding this topic.

According to the data, ADNs have a better knowledge level about emergency and disaster preparedness than BSNs. This is a surprising finding because more BSNs reported to have learned about this information in their curriculum than ADNs. This could be due to a small sample size, which is why it would be recommended to increase the sample if this study was done again.

There was almost no difference in the knowledge level of nurses whether they were licensed in Michigan or Ohio. Just like the comparison between BSN and ADN, this does not correlate with the data. More nurses from Michigan reported to have learned about this information in their curriculum than nurses in Ohio. Although, this answer could be skewed because as stated above, three nurses left comments after Survey

Question #3 stating that they learned about it in their work setting and not in their curriculum. All three of the nurses that left those comments were licensed in the state of Michigan. This information could conclude that more hospitals in Michigan teach about emergency and disaster preparedness than hospitals in Ohio. This can also be supported based on the results of Survey Question #4 that asked if they knew their expected role in an emergency or disaster situation according to their employer's guidelines. Nurses from Michigan (100%) said that they knew what to do according to their employer's guidelines where Ohio nurses (88%) reported that they knew what to do according to their employer's guidelines. This means that more emergency departments should be teaching this information to their staff. They can do this during training or orientation programs, or by offering refresher courses on emergency and disaster preparedness. In future studies, more than two hospitals per state should be surveyed to confirm these conclusions about in Michigan and Ohio.

Most nurses scored well on the questions that pertained to state nursing laws about emergency and disaster preparedness. Because the overall knowledge level about the topic in general was low but the knowledge about laws are high leads to the conclusion that nurses are aware of the laws, but don't know how to use them in practice.

Overall, according to the standards set by The American Association of Colleges of Nursing, the American Nurses Association, and the National League for Nursing all nurses should learn about emergency and disaster situations and the laws correlating to them in their nursing school curriculum (2008). The majority of the nurses surveyed did not have this information in their nursing curriculum prior to 2001 when these standards were set.

### *Recommendation for Future Study*

A comparison should be conducted between nursing students who are in nursing programs or have recently completed a program and seasoned nurses who were not required to learn about emergency and disaster situations and correlating laws in their curriculum. Future studies should include the level of implementation; BSN and ADN or just BSN. It would also be interesting to see how many nursing schools are currently abiding by the standards and are teaching about emergency and disaster preparedness. Also, Boards of Nursing should require documentation of continuing education related to this content in order to renew ones RN license.

In future studies, it would be wise to use better survey questions in order to capture the exact data that needs to be collected in order to answer the research questions to their maximum potential. Essentially only half of the research questions could be answered due to a survey that didn't address all of the research questions. This study assumed that only BSNs would be studied; but, after learning of the nurse mix in the EDs for the study, a better research question should have been to ask about the difference between the results of the surveys based on the type of nursing degree the nurse has earned.

In conclusion, the nursing profession is taking a step in the right direction by requiring schools of nursing to add information in their curriculum about disaster nursing, emergency preparedness, and correlating nursing laws. But what about all of the nurses that are currently practicing that are not knowledgeable about this topic? This research study showed that most nurses do not know as much as they should about emergency and disaster preparedness. Continued learning needs to take place by nurses who are currently

in practice in order for them to be practicing safely as nurses, and so they can give the best care possible to their patients and community.

## APPENDICIES

**Appendix A**  
**International Nursing Coalition for Mass Casualty Education:**  
**Educational Competencies for Registered Nurses Responding to Mass Casualty**  
**Incidents**

<b>Core Competencies</b>
<b><i>Critical Thinking</i></b>
Use an ethical and nationally approved framework to support decision-making and prioritizing needed resources.
Use clinical judgment and decision-making skills in assessing the potential for appropriate, timely individual and mass casualty incident.
Use clinical judgment and decision-making skills in assessing the potential for appropriate, individual and mass casualty incident.
Describe the essential nursing care at the pre-disaster, emergency and post-disaster phases for: Individual and mass casualty incidents: children, elderly, pregnant women, and communities
Describe accepted triage principles specific to mass casualty incidents.
<b><i>Assessment</i></b>
Assess the safety issues for self, the response team, and victims in any given response situation in collaboration with the incident response team.
Identify possible indicators of a mass exposure.
Describe general signs and symptoms of exposure to selected chemical, biological, radiological, nuclear, and explosive (CBRNE).
Demonstrate the ability to access up-to-date information regarding selected nuclear, biological, chemical, and incendiary agents.
Describe the essential elements included in a mass casualty incident scene assessment.
Identify special groups of patients that are uniquely vulnerable during a mass casualty incident.
Conduct a focused health history to assess potential exposure to CBRNE agents.
Perform an age-appropriate health assessment, including: airway and respiratory assessment, cardiovascular assessment, including vital signs and monitoring for signs of shock, integumentary assessment, particularly a wound assessment, pain assessment, injury assessment from head to toe, gastrointestinal assessment, including basic neurological assessment, musculoskeletal assessment, and mental status, spiritual, and emotional assessment.
Assess the immediate psychological response of the individual, family, or community following a mass casualty incident.
Assess the long-term psychological response of the individual, family, or community following a mass casualty incident.
Identify resources available to address the psychological impact.
Describe the psychological impact on responders and health care providers.
<b><i>Technical Skills</i></b>
Demonstrate safe administration of medications, particularly vasoactive and analgesic agents, via oral, intramuscular, and intravenous administration routes.
Demonstrate the safe administration of immunizations, including smallpox vaccination.
Demonstrate knowledge of appropriate nursing interventions for adverse effects from medications administered.
Demonstrate basic therapeutic interventions, including: basic first aid skills, oxygen administration and techniques, urinary catheter insertion, nasogastric tube insertion, lavage technique, and initial wound care.
Assess and prepare the injured for transport, if required, including provisions for care and monitoring during transport.
Demonstrate use of emergency communication equipment and information management techniques relevant to mass casualty incidents.
Assess the need for and initiate the appropriate CBRNE isolation and decontamination procedures available.

parties understand the need.
Demonstrate knowledge and skill related to personal protection and safety, including the use of Personal Protective Equipment for: Level B protection, Level C protection, and Respiratory protection.
Implement fluid/nutrition therapy, taking into account the nature of injuries and/or agents exposed to maintain hydration and fluid balance.
Demonstrate the ability to maintain patient safety during transport through splinting, immobilization, and therapeutic interventions.
<b>Communication</b>
Describe the local chain of command and management system for emergency response during a mass casualty incident.
Identify your role, if possible, within the emergency management system.
Locate and describe the emergency response plan for one's place of employment and its role in community emergency plans.
Identify one's own role in the emergency response plan for the place of employment.
Discuss security and confidentiality during a mass casualty incident.
Demonstrate appropriate emergency documentation of assessments, interventions, nursing actions and outcomes after a mass casualty incident.
Identify appropriate resources for referring requests from patients, media, or others for information related to mass casualty incidents.
Describe principles of risk communication to groups and individuals affected by exposure during a mass casualty incident.
Identify reactions to fear, panic, and stress that victims, families, and responders may exhibit during a mass casualty incident.
Describe appropriate coping strategies to manage self and others.
<b>Core Knowledge</b>
<b>Health Promotion, Risk Reduction, and Disease Prevention</b>
Identify possible threats and their potential impact on the general public, emergency medical system, and community.
Describe community health issues related to mass casualty incident events, specifically limiting exposure to hazardous agents, contamination of water, air, and food supplies, and shelter and protection of displaced persons.
<b>Illness and Disease Management</b>
Discuss the differences/similarities between an intentional biological attack and that of a natural disease outbreak.
Describe, using an interdisciplinary approach, the short term and long term effects of physical and psychological trauma related to disease and treatment secondary to mass casualty incidents.
<b>Human Diversity</b>
Discuss the cultural, spiritual, and social issues that may affect an individual's response to a mass casualty incident.
Discuss the diversity of emotional, psycho-social and socio-cultural responses to terrorism or the threat of terrorism, self and others.
<b>Health Care Systems and Policy</b>
Define and distinguish the terms disaster and mass casualty incident in relation to other major incident types and situations.
Define relevant terminology, including CBRNE, WMD, triage, chain of command; management system; emergency response, personal protective equipment, scene assessment, and comprehensive emergency management.
Describe the four phases of emergency management: preparedness, response, recovery and mitigation.
Describe the local emergency response system for disasters.
Describe the interaction between local, state, and federal emergency response systems.
Describe the legal authority of public health agencies to take action to protect the community from terrorism, quarantine, and required reporting and documentation.

Discuss principles related to a mass casualty incident site as a crime scene.
Recognize the impact mass casualty incidents may have on access to resources and identify how to access resources.
<b><i>Information and Health Care Technologies</i></b>
Describe use of emergency communication equipment that you will be required to use in a mass casualty incident.
Discuss the principles of containment and decontamination.
Describe procedures for decontamination of self, others, and equipment for selected CBRNE agents.
Describe how nursing skills may have to be adapted while wearing personal protection equipment.
<b><i>Ethical/Legal</i></b>
Identify and discuss ethical and legal issues related to MCI events: rights and responsibilities of health care providers; need to protect the public versus an individual's right for autonomy; to leave the scene; contamination; right of the individual to refuse care, informed consent; allocation of limited resources; information related to individuals and national security; use of public health authority to restrict individual reporting from health professionals, and collaborate with law enforcement.
Describe ethical, legal, psychological, and cultural considerations when dealing with the dying; handling remains in a MCI.
Identify and discuss legal and regulatory issues related to: abandonment of patients, response to a mass casualty incident, one's position of employment; and various roles and responsibilities assumed by volunteer efforts.
<b>Professional Development</b>
<u>Describe these nursing roles in MCIs:</u> researcher, investigator/epidemiologist, EMT or First Responder, generalist nurse, advanced practice nurse, Director/Coordinator of care in hospital/nurse administrator, On-site coordinator of care/incident commander, On-site coordinator of care management, Information management, Mental health counselor; Member of planning response team; Member of community assessment team; coordinator of shelter; Manager of decontamination team; Triage officer.
Identify the most appropriate or most likely health care role for oneself during a mass casualty incident.
Identify the limits to one's own knowledge/skills/abilities/authority related to mass casualty incidents.
Describe essential equipment for responding to a mass casualty incident.
Recognize the importance of maintaining one's expertise and knowledge in <i>this</i> area of practice.
Participate in regular emergency response drills in the community or place of employment.

**Appendix B**

**LETTER OF PERMISSION FOR THE STUDY**

**Appendix C**  
**INFORMED CONSENT FORM**

**Disaster Nursing and Emergency Preparedness Related  
to Nursing Laws in Michigan and Ohio**

The purpose of the survey has been explained to me. My participation indicates consent to use my answers and comments in an exploration of my beliefs and reflection of my knowledge about disaster nursing, emergency preparedness, and the laws that affect my role as a nurse in these situations. I will receive a copy of the results of the study upon request.

**I further understand that:**

1. My participation is voluntary and may be withdrawn or renegotiated at any time.
2. Any questions that I have about the study and the final product will be answered by the investigator.
3. The researcher has asked me to refrain from seeking outside information about this topic once I start the survey. This includes seeking the opinions of others when/while answering survey questions or searching via the internet and other forms of print before a response is finalized.

**Control and dissemination of surveys:**

4. My identity will be kept confidential. My name will not appear anywhere on the survey.
5. The investigator will maintain the surveys in a locked file in a secure location, and will destroy all of the surveys within one year.
6. The surveys will be compiled and could be disseminated in a national publication or a presentation at a professional conference.
7. I will receive a copy of this signed Informed Consent Form upon request.

\_\_\_\_\_  
Participant's signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Investigator's signature  
\_\_\_\_\_ Investigator's copy

\_\_\_\_\_  
Date  
\_\_\_\_\_ Participant's copy



4. Do you know your expected role:

a. according to your employers guidelines, in emergency, or disaster situations?  
that occur in or around your place of work?

YES NO

b. in an emergency or disaster situation that occurs outside your  
place of work?

YES NO

Additional comments:

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5. During a national disaster, are you able to practice nursing in a state that you are not  
licensed? If Yes, under what conditions? If no, why not?

YES NO

Additional comments:

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6. If there was a disaster or emergency, would you as an individual provide help to the  
best of your ability?

YES NO

Additional comments:

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6a: Would you help if there were communicable diseases present such as  
biological warfare, Anthrax, Ebola, or pandemic flu?

YES NO

Additional comments:

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7. Have you ever responded or provided help in a disaster or emergency situation?

YES NO

If yes, please explain the situation and the activities that you preformed.

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What was the most difficult part of helping in the situation?

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