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The Center for Public Policy and the Social Sciences

Policy Research Shop

New Hampshire Information and Analysis Center

The Integration of Public Health and Medical Information

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1. EXECUTIVE SUMMARY

The New Hampshire Information and Analysis Center (NHIAC) aims to provide a forum where law enforcement, public health, and private partners can work together to safeguard the homeland, prevent criminal activity, and respond to hazardous events. In pursuit of this goal, by aggregating health and safety information from the aforementioned sources, the NHIAC established a massive database where valuable information pertaining to New Hampshire's security and welfare can be found. However, though the NHIAC possesses this substantial information, the center currently lacks a system of disseminating the relevant information to each respective state agency.

The purpose of this paper is to examine opportunities for dissemination of public health information using a case example of school nurses, one major group of public health providers in the state. The Policy Research Shop (PRS) surveyed a group of school nurses about their views on public health issues and their access to relevant information. Based on their responses, the PRS created a list of public health information that the NHIAC could provide to schools and explored the most effective way to disseminate this public health information.

2. FUSION CENTERS AND PUBLIC HEALTH IN NEW HAMPSHIRE

After the events of September 11, 2001, the U.S. Department of Homeland Security (DHS) and the U.S. Department of Justice worked together to create what are now known as *fusion centers* across the United States. Formally defined by the U.S. Department of Justice as “an effective and efficient mechanism to exchange information and intelligence, maximize resources, streamline operations, and improve the ability to fight crime and terrorism by merging data from a variety of sources,” fusion centers act as focal points of information gathering, sharing, and analysis of any threat-related information at federal, state, or local levels.¹ The centers were created in an effort to “empower front-line law enforcement, public safety, fire service, emergency response, public health, critical infrastructure protection, and private sector security personnel to understand local implications of national intelligence, thus enabling local officials to better protect their communities.”²

Fusion centers are instrumental in the Information Sharing Environment (ISE) because they receive and analyze threat information from the federal government, then disseminate appropriate tips, leads, and suspicious activity reporting to local entities and the public.³ The information is gathered from a variety of sources and assists homeland security organizations at all levels of government to “identify and address immediate and emerging threats.”⁴



There are over 70 federally recognized fusion centers active throughout the United States, including a center in every state and every major city.⁵ Currently, many fusion centers, such as the Florida Fusion Center (FCC) and Colorado Information Analysis Center (CIAC), have incorporated public health and medical information.⁶

2.1 New Hampshire Information and Analysis Center (NHIAC)

The New Hampshire Information and Analysis Center (NHIAC), is a joint effort under New Hampshire's Department of Safety, State Police, and Homeland Security and Emergency Management.⁷ NHIAC was created as an "all-crimes/all-hazards, counter-terrorism information and analysis center providing strategic and tactical information directed at the most serious threats to the State of New Hampshire and its people."⁸ The center monitors threats from various sources, and then relays such information to public safety and private sector entities whose missions are to serve the safety needs of constituents. The center also aids in the efficient and effective use of public safety resources.⁹

NHIAC was created by an act signed by Governor John Lynch in 2010, establishing an information and analysis center housed within the Department of Safety.¹⁰ The NHIAC acts as a clearinghouse for collected intelligence that relates to both natural and man-made threats in New Hampshire.¹¹ Its mission statement is "to provide an integrated, all-crimes/all-hazards, information sharing network to collect, analyze and disseminate information derived from multiple sources to stakeholders in a timely manner, in an effort to protect the citizens and the critical infrastructure of New Hampshire, while ensuring the protection of civil rights and civil liberties."¹²

2.2 Integration of Public Health

In July of 2011, the U.S. Department of Justice's Global Justice Information Sharing Initiative entity published the report entitled *Baseline Capabilities for State and Major Urban Area Fusion Centers*, which outlines baseline capabilities for fusion centers across the nation. One of the appendices to that report, entitled *Health Security: Public Health and Medical Integration for Fusion Centers*, focuses on public health and medical integration into fusion centers. The report recommends that all fusion centers aiming to support public health care initiatives should have the following mechanisms in place:

- (1) Coordinated health security plans and programs that address known and potential threats;
- (2) Regular and ongoing risk assessments of the public health/health care sector, as well as a process to identify and address sector interdependencies to allow for efficient information sharing and allocation of resources;



(3) Access to and participation in a fusion center’s robust information sharing processes that allow the movement of relevant and timely open source, unclassified, and classified intelligence and information that support routine and event- specific threat analysis;

(4) Tools and processes that are flexible and adaptable, allow for rapid adaptation to an evolving threat environment, and incorporate lessons learned and effective practices.¹³

In addition to advocating for the collaboration between health security stakeholders and fusion centers in order to establish the aforementioned resources, the report recommends a series of fusion process capabilities. These recommended capabilities include public health, emergency services, agriculture, food, and the environment, and are “examples of strategic and tactical information that public safety entities can provide to fusion centers.”¹⁴ They are outlined in the following six sections.

2.2.1 Planning and Requirements Development

The recommended preliminary step for fusion centers aiming to integrate public health and medical information is to prioritize which threats, vulnerabilities, and consequences exist in the public health sector of the relevant state.¹⁵ Some states may be more prone to certain health risks than others because of factors such as geography and climate. Therefore, understanding the specific needs of the state is important in developing useful parameters for information collection.¹⁶

It is also recommended that each fusion center develops a set of information requirements outlining specific triggers for information exchange among public health entities. These requirements must also be flexible to change. In addition to defining the communication process among sectors, the report recommends that fusion centers and public health entities establish overarching goals and objectives for producing and sharing health threat information.¹⁷

2.2.2. Information Gathering/Collection and Recognition of Indicators and Warnings

Once the parameters and specifications for information collection are established, it is recommended that fusion centers consider how data will be collected and catalogued so that information sharing can be done effectively and efficiently. For example, fusion centers should identify the pertinent individuals and regulations for handling any gathered health information, as well as the types of mechanisms that will be used to receive, store, and keep the information in a disposable manner.¹⁸



2.2.3. Processing and Collation of Information

In addition to collaborating in regards to the collection of public health information, it is recommended that fusion centers also collaborate with other health partners to guarantee that the processing of public health information (or indicators, warnings, and suspicious activity) is valid, reliable, and catalogued in an appropriate manner.¹⁹

2.2.4. Intelligence Analysis and Production

The information being collected is not helpful to public health entities if personnel do not understand adequately warning signs and trends, or know who, how, and what knowledge to report in relation to health threats. Therefore, it is also recommended that fusion centers work with health care partners to establish accurate “information linkages” between what kind of information is being collected and how it indicates certain threats to health (i.e. human, animal, food, environmental) or healthcare provider infrastructure and resources.²⁰

2.2.5 Intelligence/Information Dissemination

Dissemination is the next recommended step in this process to distribute information from the fusion center to the appropriate entities. The fusion center should determine the type of information to distribute and then assess which procedures and mechanisms should be used to accomplish this goal.²¹

2.2.6 Reevaluation

The final step in successfully integrating the collection and dissemination of public health information in fusion centers is the evaluation process. It is recommended that the process be reevaluated once completed in order to assure that the operation adequately meets the needs and requirements of the fusion center and its constituents.²²

2.3 Coordination with New Hampshire Department of Health and Human Services

The New Hampshire Department of Health and Human Services (DHHS) is in charge of the health, safety, and well-being of the state’s citizens. DHHS provides services and programs through partnerships with families, community groups, private providers, and other state and local government entities.²³

Within the DHHS is the Division of Public Health Services (DPHS), an organization dedicated to promoting optimal health and protecting constituents from illness and injury. DPHS serves the public by “delivering high quality, evidence-based services” and “responds promptly to public health threats, inquiries, and emerging issues.”²⁴ DPHS



subdivisions include units such as Chronic Disease Prevention and Control, Community Public Health Development, and Public Health Laboratories.

The Communicable Disease Control and Surveillance sections are most relevant to the integration and dissemination of public health information. They work together to protect the health of New Hampshire residents by investigating and tracking reports of diseases that could threaten public health. Specifically, they:

Investigate naturally occurring or human-induced cases and outbreaks of communicable diseases; develop and implement public health interventions to minimize further transmission of disease; respond to public health emergencies 24 hours a day/7 days a week; provide consultation for the management of people who are sick or exposed to a communicable disease; collaborate with local, state, federal, and community programs; monitor the occurrence of communicable diseases in order to detect trends and to assess the public health impact of these diseases; [and] educate individuals, communities, health care providers, the media, and policy makers to enhance disease prevention and control efforts.²⁵

Additionally, New Hampshire has a Health Alert Network (HAN), which is an around-the-clock system of public health emergency communications, including notifications and alerts to health professionals and key response partners.²⁶ This system allows these stakeholders to have “relevant and timely access to information, including information necessary to respond to events that may have urgent public health consequences.”²⁷ It focuses on disseminating pertinent and timely information to health care providers rather than citizens of New Hampshire. It has a primary communications alerting system in place for health alerts via telephone, fax, email, and paper.²⁸ These mechanisms have been in place for the last several years and could be adapted for use within the NHIAC.

3. PUBLIC HEALTH AT THE FEDERAL LEVEL

To understand a potential role for state fusion centers in supporting public health, it is important to consider the interrelationship between state and federal entities that collect, analyze, and disseminate public health information. This section describes the key federal agencies and outlines their function.

The mission of the Center for Disease Control and Prevention (CDC) is to “collaborate to create the expertise, information, and tools that people and communities need to protect their health—through health promotion, prevention of disease, injury and disability, and preparedness for new health threats.”²⁹ The CDC is a division of the Department of Health and Human Services (HHS).



3.1 Public Health Surveillance and Informatics Program Office (PHSIPO)

Within the CDC is the Office of Surveillance, Epidemiology, and Laboratory Services, which houses the Public Health Surveillance and Informatics Program Office (PHSIPO). PHSIPO aims to better public health services through both disciplines. Public health surveillance involves collecting, managing, analyzing, interpreting, and disseminating health information in order to increase the effectiveness of public health programs. Public health informatics, on the other hand, deals with automation to manage, exchange, and ensure effective use of electronic health and program management information.³⁰ The divisions and activities of the office are summarized in Table 1.

Table 1. Divisions and Activities of PHSIPO

Divisions of PHSIPO	Description
Division of Behavioral Surveillance (DBS)	<ul style="list-style-type: none"> • Designs and manages state and local surveillance activities that provide integrated disease, risk behavior, and health information to state and local public health authorities and CDC programs³¹ • Conducts “specialized surveys to support CDC programs and obtain data on important emerging health issues such as influenza and mental health”³²
Division of Informatics Practice, Policy, and Coordination (DIPPC)	<ul style="list-style-type: none"> • Improves “practice and translation of public health informatics through outreach and coordination”³³ • Provides informatics expertise and consultation services to CDC and partners, and seeks opportunities to enhance the delivery of public health services through public health informatics³⁴
Division of Informatics Solutions and Operations (DISO)	<ul style="list-style-type: none"> • Supports public health information exchange in areas such as surveillance, emergency preparedness, and laboratory services³⁵ • Maintains “shared services and applications to reduce the total cost of operation and improve return on investment”³⁶
Division of Notifiable Diseases and Healthcare Information (DNDHI)	<ul style="list-style-type: none"> • Works with federal, state, and local public health partners to support the collection, sharing, and analysis of healthcare and public health information³⁷
Biosurveillance Coordination Activity (BCA)	<ul style="list-style-type: none"> • Leads “efforts to establish an operational national epidemiologic surveillance system for human health” • Establishes “strategies, initiatives, and actions to improve U.S. response to today’s health threats and hazards”³⁸
Informatics Research and Development Activity (IRDA)	<ul style="list-style-type: none"> • “Studies, prototypes, and tests new and innovative technology-based tools and resources to maximize their effect on public health”³⁹

Source: http://www.cdc.gov/osels/phsipo/PHISPO_overview.html



3.2 National Notifiable Diseases Surveillance System (NNDSS)

The CDC has also implemented a National Notifiable Diseases Surveillance System (NNDSS), which allows public health officials to monitor the occurrence and spread of illness.⁴⁰ NNDSS works with both local and state health departments, laboratories, hospitals, and private providers, to obtain reports on diseases. Data collected from different states are used to “monitor disease trends, assess the effectiveness of prevention and control measures, identify populations or geographic areas at high risk, formulate prevention strategies, develop public health policies, and work with the international community to identify and contain global outbreaks.”⁴¹

The National Electronic Disease Surveillance System (NEDSS) is a major component of the NNDSS because it provides support to “state, local, and territorial health departments that in turn provide CDC with aggregate data on nationally notifiable diseases and conditions.”⁴²

3.3 Public Health Information Network

The CDC’s Public Health Information Network (PHIN) was established with the goal of increasing “the capacity of public health agencies to electronically exchange data and information across organizations and jurisdictions.”⁴³ The mission of PHIN is to “establish and support shared policies, standards, practices, and services that facilitate efficient public health information access, exchange, use, and collaboration among public health agencies and with their clinical and other partners.”⁴⁴ The PHIN resides in the Division of Informatics Practice, Policy, and Coordination (DIPPC) in PHSIPO. Functions of the PHIN initiative are described as:

- (1) Developing and disseminating requirements, standards, specifications, and overall architecture for public health information exchange;
- (2) Promoting the use of public health information exchange to improve emergency preparedness outcomes;
- (3) Working with federal partners and other external stakeholders to [first] ensure that the public health community is represented through a governance model [and second] support the interoperability of the public health segment of the federal health IT architecture.⁴⁵



3.4 The Health Security Intelligence Enterprise (HSIE)

The Department of Homeland Security (DHS) recently established the Health Security Intelligence Enterprise (HSIE) as an “initiative to integrate Public Health and Healthcare Community (PH/HC) interests into the processes of homeland security information and intelligence exchange.”⁴⁶ As an effort to foster communication and collaboration between different sectors of the PH/HC community, intelligence agencies, and various levels of law enforcement, HSIE established “an institutionalized health security information and intelligence sharing framework.”⁴⁷ Through this initiative, the DHS hopes to enhance “the preparedness level of PH/HC practitioners across the country, while supporting the all-hazards approach to prevention, protection, response and recovery efforts of all homeland security partners.”⁴⁸ This recent establishment of HSIE, as well as the 2011 release of the *Health Security* appendix (see section 2.2), suggests that the exchange and dissemination of public health information across the United States is an increasing area of interest for the federal government.

4. SURVEY

The previous sections of this report provide a current overview of fusion centers and their ability to incorporate public health information (section 2) and an inventory of the federal government’s methods of collecting, processing, and disseminating public health and medical information (section 3). As evidenced by these sections, to supplement existing offices in HHS and DHS, the federal government currently is looking at fusion centers as an additional method of utilizing public health and medical information in order to improve health safety across the United States. Indeed, with the recent establishment of integration guidelines (see section 2.2) and new federal offices to help facilitate this information exchange, many state fusion centers are electing to incorporate public health and medical information.

With results from a survey of New Hampshire school nurses, this section aims to expand upon the new potential role of fusion centers by providing one example of the type of public health information that could be useful for NHIAC to collect and disseminate among the state’s medical professionals. The survey was intended to gather data on the types of information that school nurses would benefit from receiving from the state and federal government. Information related to both public health and to threats posed by trends in crime, terrorism, and substance abuse were included in the survey.

The survey was designed to determine: (1) what types of information in these issue areas school nurses already possess, and from which sources; (2) what types of information the nurses perceive that they could use, which NHIAC has available; and (3) what types of information school nurses possess that they could legally and ethically share with NHIAC, which might not otherwise be reported to law enforcement. The survey results



can also provide insight into how fusion centers can use this subsection of the New Hampshire medical community to effectively disseminate public health information.

4.1 Methodology

The Policy Research Shop designed the survey in collaboration with the leadership of NHIAC. NHIAC reviewed the survey instrument and provided feedback before the survey was made available online. Survey responses were received from September 2012 to December 2012. The survey was administered through Survey Monkey, an online survey service, and distributed through the New Hampshire Department of Education School Nurse Listserv. 251 New Hampshire school nurses participated (out of approximately 592 school nurses statewide) for a response rate of 42.4 percent.⁴⁹ The survey contained 21 multiple choice and open response questions (for complete survey, see Appendix A).

The New Hampshire Association of School Principals and the New Hampshire School Nurses' Association assisted researchers with outreach to potential respondents in an attempt to encourage a wide range of participation of school nurses statewide. School nurses also were invited to participate in the survey during two New Hampshire School Nurses' Association events that occurred in Fall 2012. Each event had approximately 50 school nurses in attendance. Of those school nurses who responded to the survey, 57 percent work in elementary schools, 18 percent are in middle schools, and almost one quarter are in high schools. The majority of respondents work in Hillsborough County (27 percent).

4.2 Analysis of Findings

The results of the survey indicate that beyond common illness, mental health is the most widespread public health concern confronting New Hampshire school nurses. School nurses report primarily to principals and parents, providing two additional sources of information that could be valuable to the NHIAC. While the vast majority of respondents feel they receive the information they need, a minority do believe that they are not getting adequate information on emergency management and homeland security, two areas where outreach by the NHIAC could prove effective.

The following discussion explores three main findings. Further details and graphs can be found in the summary of results, Appendix B.



4.2.1 Receiving and Using Information

The NHIAC is largely unknown to New Hampshire school nurses. Only 7 percent of survey respondents reported familiarity with the NHIAC. While 94 percent of surveyed school nurses said they receive adequate information in order to perform their job effectively and efficiently, when broken down into specific categories, many respondents feel they do not receive adequate information. Half of respondents report that they do not receive adequate information on homeland security, while 27 percent and 18 percent feel the same way about emergency management and public safety, respectively. On the other hand, 91 percent do feel they are adequately well-informed about public health. This data provides an opportunity for the NHIAC to formally introduce itself to the New Hampshire school nurse population and prove itself a valuable source of information for subjects that many school nurses are uninformed about.

In general, respondents familiar with the NHIAC (n=14) and those who are not (n=172) feel they receive adequate information in order to perform their job effectively and efficiently. However, while the sample size is relatively small, the specific categories tell a different story. Responses to question 16 shows that survey respondents familiar with the NHIAC overwhelmingly felt they received adequate information about public safety and public health (100 percent), homeland security (93 percent), and emergency management (86 percent). The NHIAC's main opportunity for better informing New Hampshire school nurses could be educating them about its existence and explaining what resources and information are available through the Center.

To increase outreach to school nurses, the NHIAC may find it useful to communicate and coordinate with the other sources of information that school nurses reported as being helpful to their job. Specifically, 93 percent of survey respondents identified both the New Hampshire School Listserv and the New Hampshire Department of Health and Human Services as useful sources of information, and 75 percent said the same of the New Hampshire Department of Education, the Center for Disease Control, and the Poison Control Center. Collaborating with these entities on how best to share information about salient issues for school nurses could be another opportunity for NHIAC to increase its dissemination of public health information. For example, mental health was found to be an area of significant concern among school nurses. In addition, respondents identified various trends in teen behavior of which they were not aware. The following two subsections discuss these issues in greater detail.

4.2.2 Priority Public Health Concerns

School nurses report that they regularly see student patients for common illnesses and mental health issues. The data show that more than one fifth of respondents report seeing students for mental health issues on a daily basis and almost one quarter see students for



mental health more than once a week. Closely aligned with mental health, 32 percent of respondents reported that they encounter eating disorders among patients at least once a month. The majority of respondents report seeing sexually transmitted diseases, reportable diseases, drug or alcohol abuse, and suspicious or illegal activities on or off campus less than once a month (the least frequent option offered).

In addition to general health, school nurses were asked about their awareness of trends in teenage behavior that were identified as public health concerns among student populations. The survey results indicate that school nurses could benefit from greater access to resources and information on certain trends in teenage behavior that may be harmful to students' health and wellbeing.

In general, 53 percent of respondents do not feel up to date with the trends included in the survey. Of the eleven trends identified, school nurses had limited knowledge (less than 50 percent) of five behaviors: whippets (48 percent), protein supplement overdose (34 percent), vodka eyeballing (23 percent), drinking bleach to pass drug tests (14 percent), and i-dosing (9 percent). Based on these findings, NHIAC, in collaboration with other public health entities in the state, can consider methods for providing greater resources and training on these trends.

4.2.3 Reporting

Parents and guardians, school administrators and principals, and local law enforcement can all play a role in promoting the health and safety of student populations. Therefore, the survey also focused on trends in reporting among school nurses in order to understand how information is shared within the school community. The survey asked respondents to select all options that applied, and school nurses mainly report problems to principals and parents (Question 11).

The majority of school nurses report written threats against another student to the principal (90 percent). 48 percent would inform administrators, and 23 percent would notify police or parents or guardians. Written threats against administrators or the school in general received a similar response. Suspected bullying or harassment closely mirrors written threats against another student, except for a large drop in reports to the police (5 percent).

Reporting suspected involvement with alcohol and drugs also had similar results: notifying the principal (80 percent) was the most common response, with administrators (43 percent), parents/guardians (35 percent), and the police (11 percent) following. There was an almost doubling of reports to parents/ guardians (62 percent) for alcohol and drug consumption or abuse.



Based on the findings from the survey, the majority of school nurses see common illness, mental health issues, and eating disorders in the realm of parental responsibility, with respondents choosing to notify parents over 80 percent for common illnesses, mental health and eating disorders. Nurses primarily inform the principal (62 percent) and administrators (31 percent) about reportable diseases. In addition, 36 percent report mental health issues to principals and 24 percent choose to notify administrators.

Responses to questions about sexually transmitted diseases received the lowest response rate. While all other reporting-related questions received responses from 175 to 193 school nurses, there were only 148 responses for sexually transmitted diseases. Significantly more of these respondents chose “none” for sexually transmitted diseases than any other issue (48 percent). Forty-nine percent chose to report to parents or guardians; reporting to the principal, administrators and the police was 12 percent or less.

School nurses tend to report suspicious or illegal activity on or off school grounds to principals. However, when activities occur on school grounds principals are notified by 85 percent of respondents, and when off school grounds that decreases to 63 percent. Additionally, 49 percent inform administrators about activities on school grounds and 39 percent report to the police. For suspicious or illegal activity off school grounds, 36 percent of school nurses notify administrators and 46 percent report to the police. Under 25 percent of respondents inform parents or guardians about suspicious or illegal activity on or off school grounds.

It is important to note that many respondents commented in the “other” section of this question: school nurses typically wrote that “it depends on the situation,” and many mentioned guidance counselors, school resource officers, and reporting issues to the state or specific state agencies such as the New Hampshire Department of Health and Human Services.

In summary, principals and parents/guardians are the primary groups notified for health concerns or in instances of problematic behavior and therefore serve an especially important role for school nurses. Principals were always chosen more than police or administrators in issues of suspicious behavior, and they were the first choice in every situation except for health and disease related issues. As discussed above, nurses primarily report to parents or guardians on these issues (common illnesses, reportable diseases, sexually transmitted diseases, mental health issues, and eating disorders), with 62 percent also notifying principals. These results indicate that NHIAC could be a valuable source of public health information for and communication with principals and parents/guardians. Principals, in particular, can provide aggregate information on issues widespread at the schools, and could be another important audience for NHIAC’s dissemination of public health and safety information.



5. CONCLUSION

The incorporation of public health and medical information into state fusion centers has been an increasing area of interest for the U.S. federal government. As a supplement to the already established offices in HHS and DHS, fusion centers have the potential to provide an innovative mechanism for disseminating relevant public health information and increasing public safety across the United States. To assess how a particular subsection of the New Hampshire health professional community could be utilized by a fusion center, our survey was distributed to school nurses in New Hampshire with the intent of identifying an example of where there may be gaps in knowledge and how the NHIAC potentially could provide greater access to this information. There are four overarching conclusions based on the results of the survey.

First, knowledge of the NHIAC among school nurses is extremely low. This provides NHIAC with an opportunity to introduce itself to school nurses across New Hampshire as a valuable resource and a vital pillar for public health, safety, and security. The vast majority of respondents did feel that, in general, they received the information they needed to perform their job effectively and efficiently. However, while 91 percent felt they received adequate information on public health and 82 percent felt the same about public safety, only 73 percent felt they received adequate information about emergency management and 50 percent for homeland security. In order to increase knowledge of emergency management and homeland security, NHIAC may consider pursuing options for improving outreach, communication, and information dissemination among school nurses and other public health professionals.

Second, the survey revealed very high rates of school nurses dealing with mental health issues, particularly at the high school level. NHIAC may consider disseminating more information regarding mental health issues to school nurses, parents/guardians, and principals.

Third, school nurses primarily report issues of concern to principals and parents, with principals notified more for issues relating to suspicious or illegal activities, bullying, written threats to fellow students or administrators, and alcohol or drug abuse, while nurses chose to report more to parents on health-related issues. The NHIAC may want to establish strong lines of communication with principals and parents, or work to establish a more uniform reporting system where applicable on issues of safety.

Fourth, a slight majority of respondents did not feel up to date about dangerous teen trends, with over half unfamiliar with i-dosing, vodka eyeballing, protein supplement overdose, whippets, or drinking bleach to pass drug tests. Whether or not these trends are actual widespread problems in New Hampshire schools cannot be determined by this



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survey. Perhaps many school nurses are unfamiliar with them precisely because they are not an issue. That said, these topics may be another area of interest for NHIAC to pursue with public health professionals.

In conclusion, school nurses are an important subset of the public health community that provide a useful perspective on the type of public health information that would be important to communicate throughout the state. The results obtained through this survey help support the NHIAC's mission to become an "all-hazard" information distribution center, and particularly its goal to begin disseminating information to providers in the public health sphere. As discussed in the earlier sections of this report, this aim is consistent with the federal government's increasing emphasis on the incorporation of public health and medical information within state fusion centers. With an abundance of federal guidelines and recently established offices devoted to the integration of this material, the NHIAC would be well-equipped to incorporate this information if desired.



APPENDIX A. NEW HAMPSHIRE SCHOOL NURSES SURVEY

1. Which of the following best describes your school
 - Elementary School
 - Middle School
 - High School

2. About many students are enrolled at your school?
 - 0-300
 - 300-600
 - 600-1000
 - 1000+

3. Which best describes your schools surrounding area?
 - Rural
 - Suburban
 - Urban

4. How many patients/students do you see in a year?

5. What percentage of these are students?

6. About what percentage of the students you see do you know on a first name basis?

7. How often do students come to you for care or advice on these issues? (Daily, Semi-Weekly, Weekly, Semi-Monthly, Monthly, Less than once/month):
 - Common illnesses
 - Reportable Diseases
 - Sexually Transmitted Diseases
 - Mental Health Issues
 - Eating disorders
 - Alcohol consumption or abuse
 - Drug consumption or abuse
 - Suspicious or illegal activity
 - on school grounds
 - off school grounds



8. Which of these sources of information have you found helpful to your job?
(Check all that apply)

- U.S. Department of Health and Human Services
- U.S. Department of Education
- New Hampshire Department of Health & Human Services
- New Hampshire Department of Education
- Center for Disease Control
 - Morbidity and Mortality Weekly Report
 - Other
- National Institute of Health
- Poison Control Center
- New Hampshire School Listserv
- School Superintendent
- NH Partners for Health Schools
- Breathe NH
- Regional Asthma Council
- NH Coalition for Occupational Safety & Health
- Other (please describe)

9. Do you feel up to date about dangerous teenage trends? (yes/no)

10. Are you familiar with the following terms or trends? (check all that apply)

- I-dosing
- Vodka eyeballing
- Vodka Tampons
- Choking
- Bath Salts
- Protein Supplement overdose
- DXM
- Whippets
- Pill Parties
- Drinking bleach to pass drug tests
- Drinking Hand Sanitizer

11. To whom, if anyone, would you report the following situations? (Police, principle, administrators, other)

- Written threats against another student
- Written threats against administrators or the school in general
- Suspected bullying or harassment



- Suspected involvement with alcohol
- Suspected involvement with drugs
- Common illnesses
- Reportable Diseases
- Sexually Transmitted Diseases
- Mental Health Issues
- Eating disorders
- Alcohol consumption or abuse
- Drug consumption or abuse
- Suspicious or illegal activity?
 - on school grounds
 - off school grounds

12. Does your school use social media? (Check all that apply)

- Email
- Blogging
- Pinterest
- Tumblr
- MySpace
- Facebook
- Twitter
- Blackboard
- Moodle
- WebCT
- Webwork
- ANGEL
- Other

13. Does the nurse's office use social media? (Check all that apply)

- Email
- Blogging
- Pinterest
- Tumblr
- MySpace
- Facebook
- Twitter
- Blackboard
- Moodle
- WebCT



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- Webwork
- ANGEL
- Other

14. Does you personally use social media? (Check all that apply)

- Email
- Blogging
- Pintrest
- Tumblr
- MySpace
- Facebook
- Twitter
- Blackboard
- Moodle
- WebCT
- Webwork
- ANGEL
- Other

15. Do you receive adequate information related to:

- Public safety (yes/no)
- Public health (yes/no)
- Emergency management (yes/no)
- Homeland security (yes/no)

in order to perform your job effectively and efficiently? (comment)

16. Are you familiar with the New Hampshire Information and Analysis Center?
(yes/no)

17. Please state you gender

18. Please state your age

19. Please list the county in which you work

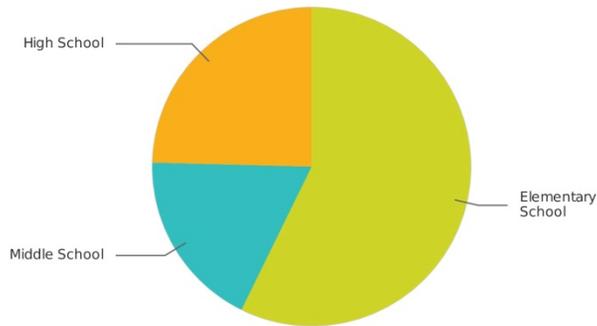


APPENDIX B. 2012 NEW HAMPSHIRE SCHOOL NURSES SURVEY RESULTS

New Hampshire School Nurses Survey: NH Fusion Center

Q1 Which of the following best describes your school?

Answered: 248 Skipped: 3



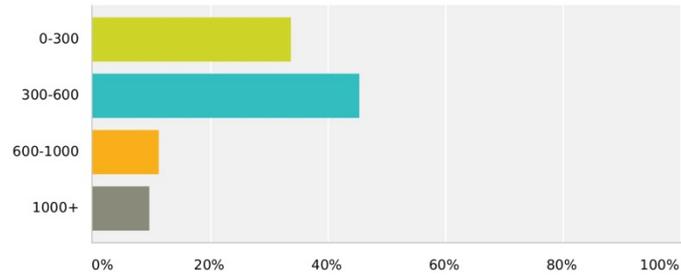
Answer Choices	Responses	
Elementary School	57.26%	142
Middle School	18.15%	45
High School	24.60%	61
Total		248



New Hampshire School Nurses Survey: NH Fusion Center

Q2 About how many students are enrolled at your school?

Answered: 249 Skipped: 2



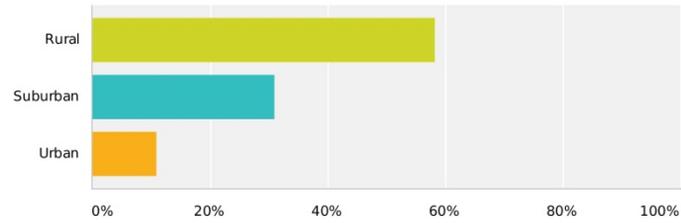
Answer Choices	Responses	Count
0-300	33.73%	84
300-600	45.38%	113
600-1000	11.24%	28
1000+	9.64%	24
Total		249



New Hampshire School Nurses Survey: NH Fusion Center

Q3 Which best describes your schools surrounding area?

Answered: 249 Skipped: 2



Answer Choices	Responses	
Rural	58.23%	145
Suburban	30.92%	77
Urban	10.84%	27
Total		249

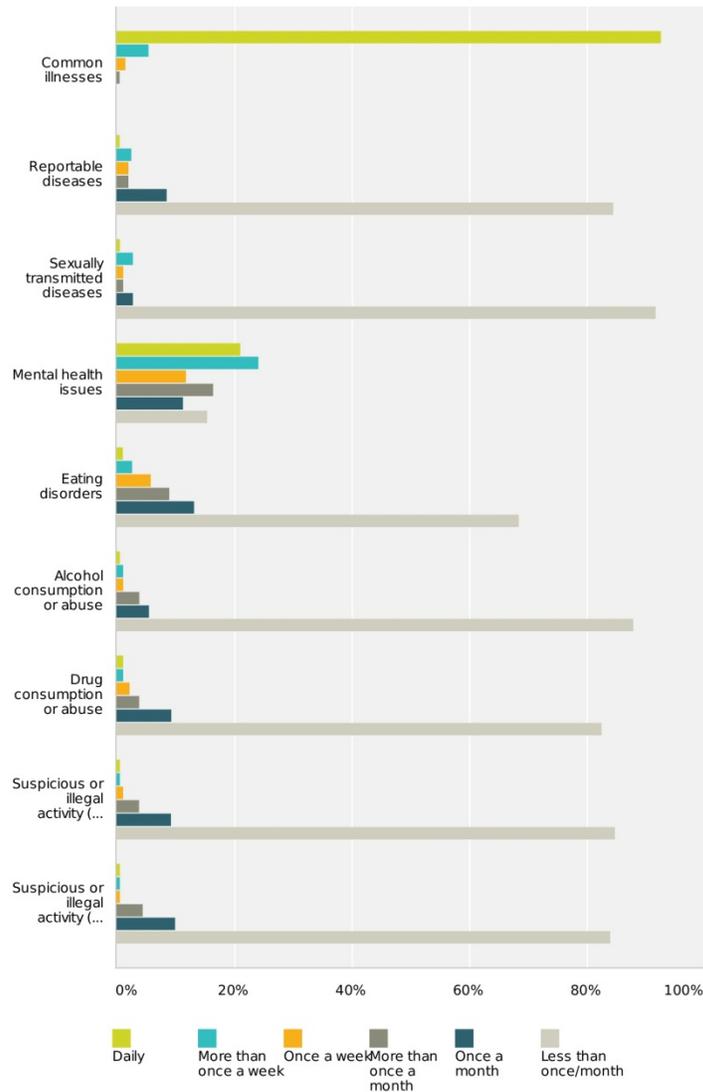
Questions 4 – 6 are open response.



New Hampshire School Nurses Survey: NH Fusion Center

Q7 How often do students come to you for care or advice on these issues?

Answered: 203 Skipped: 48



	Daily	More than once a week	Once a week	More than once a month	Once a month	Less than once/month	Total
Common	92.61%	5.42%	1.48%	0.49%	0%	0%	



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New Hampshire School Nurses Survey: NH Fusion Center

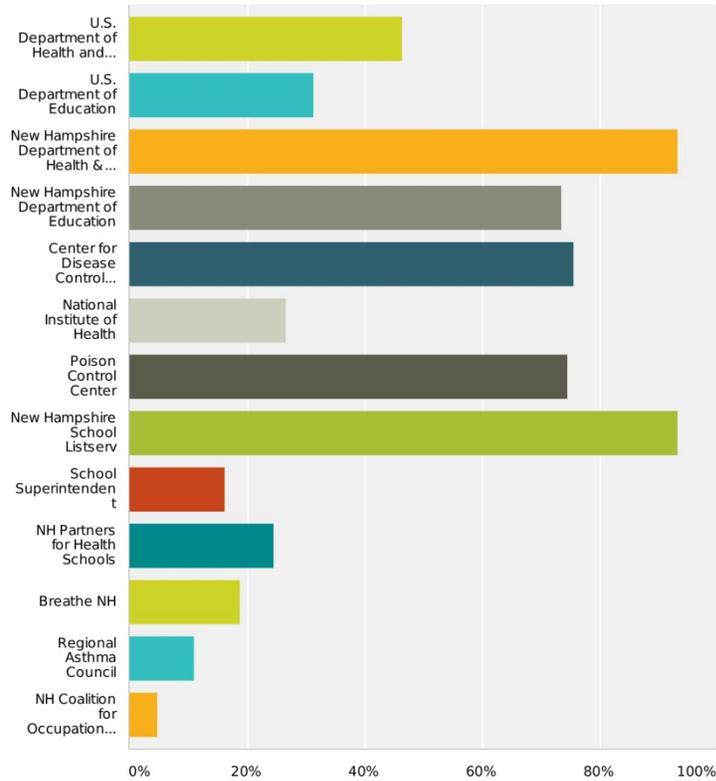
illnesses	188	11	3	1	0	0	203
Reportable diseases	0.50% 1	2.50% 5	2% 4	2% 4	8.50% 17	84.50% 169	200
Sexually transmitted diseases	0.55% 1	2.76% 5	1.10% 2	1.10% 2	2.76% 5	91.71% 166	181
Mental health issues	21.03% 41	24.10% 47	11.79% 23	16.41% 32	11.28% 22	15.38% 30	195
Eating disorders	1.05% 2	2.63% 5	5.79% 11	8.95% 17	13.16% 25	68.42% 130	190
Alcohol consumption or abuse	0.55% 1	1.10% 2	1.10% 2	3.85% 7	5.49% 10	87.91% 160	182
Drug consumption or abuse	1.09% 2	1.09% 2	2.19% 4	3.83% 7	9.29% 17	82.51% 151	183
Suspicious or illegal activity (on school grounds)	0.54% 1	0.54% 1	1.09% 2	3.80% 7	9.24% 17	84.78% 156	184
Suspicious or illegal activity (off school grounds)	0.55% 1	0.55% 1	0.55% 1	4.42% 8	9.94% 18	83.98% 152	181



New Hampshire School Nurses Survey: NH Fusion Center

Q8 Which of these sources of information have you found helpful to your job? (Check all that apply)

Answered: 192 Skipped: 59



Answer Choices	Responses
U.S. Department of Health and Human Services	46.35% 89
U.S. Department of Education	31.25% 60
New Hampshire Department of Health & Human Services	93.23% 179
New Hampshire Department of Education	73.44% 141
Center for Disease Control (Morbidity and Mortality Weekly Report/Other)	75.52% 145
National Institute of Health	26.56% 51
Poison Control Center	74.48% 143
New Hampshire School Listserv	93.23% 179
Total Respondents: 192	
Other (please specify) (25)	



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New Hampshire School Nurses Survey: NH Fusion Center

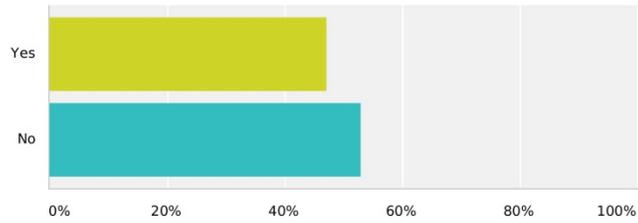
School Superintendent	16.15%	31
NH Partners for Health Schools	24.48%	47
Breathe NH	18.75%	36
Regional Asthma Council	10.94%	21
NH Coalition for Occupational Safety & Health	4.69%	9
Total Respondents: 192		
Other (please specify) (25)		



New Hampshire School Nurses Survey: NH Fusion Center

Q9 Do you feel up to date about dangerous teenage trends?

Answered: 189 Skipped: 62



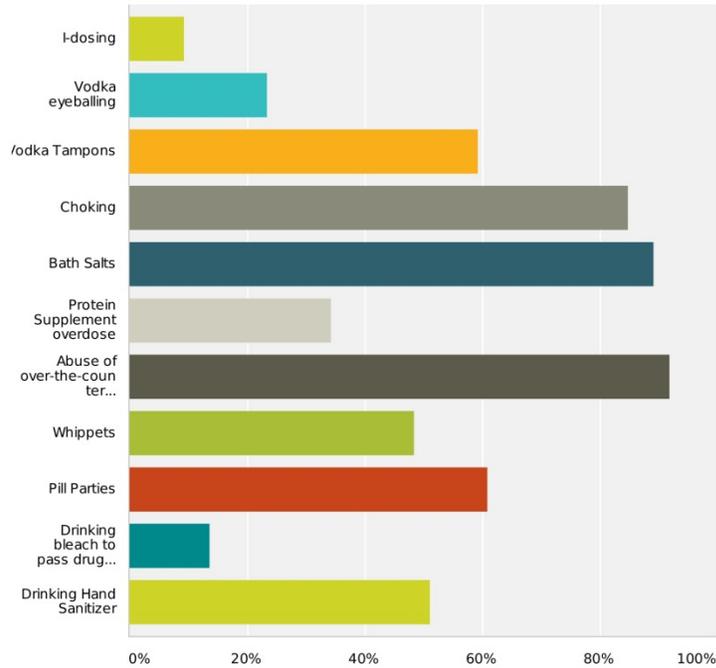
Answer Choices	Responses	
Yes	47.09%	89
No	52.91%	100
Total		189



New Hampshire School Nurses Survey: NH Fusion Center

Q10 Are you familiar with the following terms or trends? (check all that apply)

Answered: 184 Skipped: 67



Answer Choices	Responses	Count
l-dosing	9.24%	17
Vodka eyeballing	23.37%	43
Vodka Tampons	59.24%	109
Choking	84.78%	156
Bath Salts	89.13%	164
Protein Supplement overdose	34.24%	63
Abuse of over-the-counter cold/cough medication (Dextromethorphan/DXM, Sudafed)	91.85%	169
Whippets	48.37%	89
Pill Parties	60.87%	112
Drinking bleach to pass drug tests	13.59%	25
Drinking Hand Sanitizer	51.09%	94

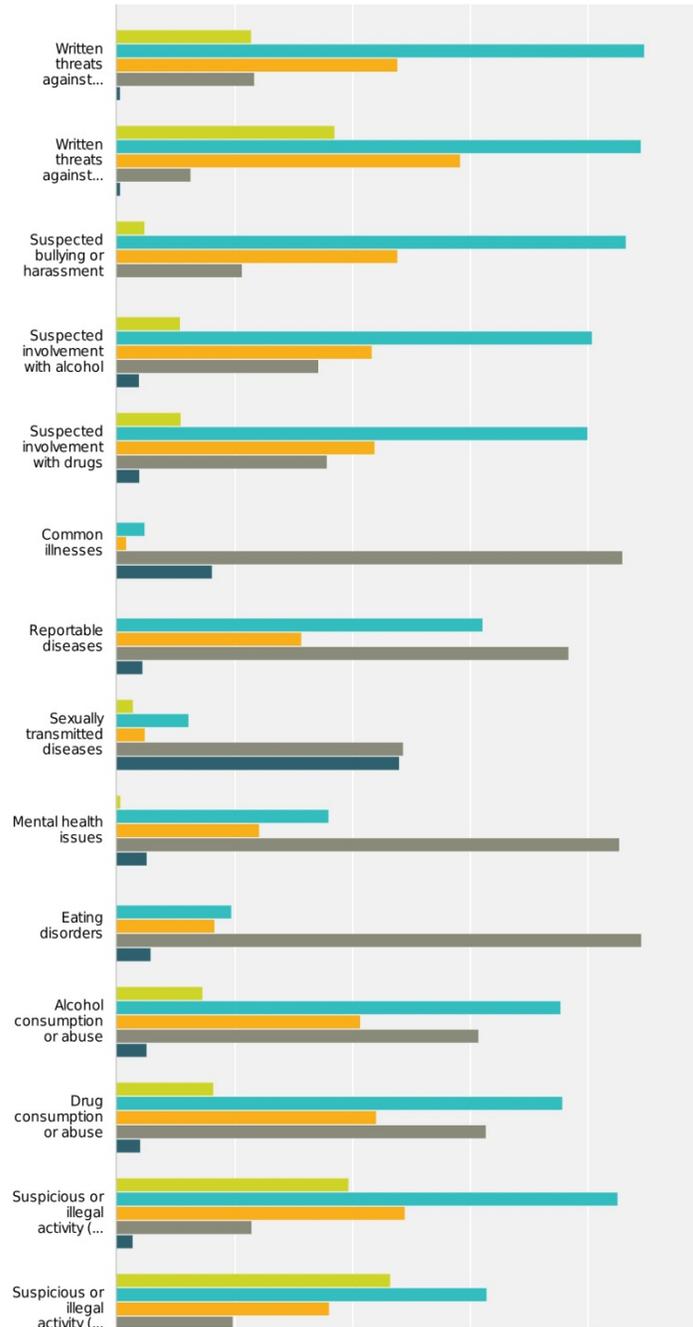
Total Respondents: 184



New Hampshire School Nurses Survey: NH Fusion Center

Q11 To whom, if anyone, would you report the following situations?

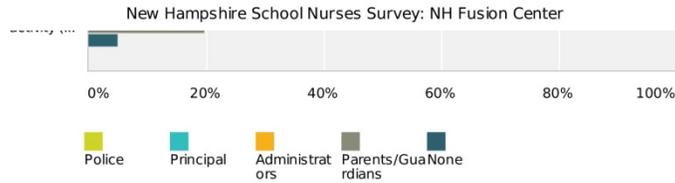
Answered: 193 Skipped: 58



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	Police	Principal	Administrators	Parents/Guardians	None	Total Respondents
Written threats against another student	22.80% 44	89.64% 173	47.67% 92	23.32% 45	0.52% 1	193
Written threats against administrators or the school in general	36.98% 71	89.06% 171	58.33% 112	12.50% 24	0.52% 1	192
Suspected bullying or harassment	4.66% 9	86.53% 167	47.67% 92	21.24% 41	0% 0	193
Suspected involvement with alcohol	10.70% 20	80.75% 151	43.32% 81	34.22% 64	3.74% 7	187
Suspected involvement with drugs	10.81% 20	80% 148	43.78% 81	35.68% 66	3.78% 7	185
Common illnesses	0% 0	4.69% 9	1.56% 3	85.94% 165	16.15% 31	192
Reportable diseases	0% 0	62.16% 115	31.35% 58	76.76% 142	4.32% 8	185
Sexually transmitted diseases	2.70% 4	12.16% 18	4.73% 7	48.65% 72	47.97% 71	148
Mental health issues	0.56% 1	35.96% 64	24.16% 43	85.39% 152	5.06% 9	178
Eating disorders	0% 0	19.43% 34	16.57% 29	89.14% 156	5.71% 10	175
Alcohol consumption or abuse	14.53% 26	75.42% 135	41.34% 74	61.45% 110	5.03% 9	179
Drug consumption or abuse	16.38% 29	75.71% 134	44.07% 78	62.71% 111	3.95% 7	177
Suspicious or illegal activity (on school grounds)	39.36% 74	85.11% 160	48.94% 92	22.87% 43	2.66% 5	188
Suspicious or illegal activity (off school grounds)	46.45% 85	62.84% 115	36.07% 66	19.67% 36	4.92% 9	183

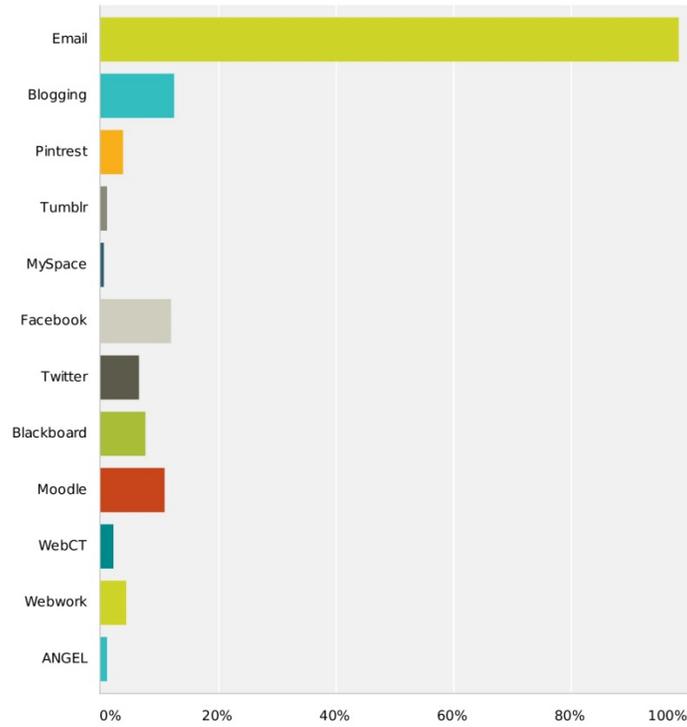
Other (please specify) (49)



New Hampshire School Nurses Survey: NH Fusion Center

Q12 Does your school use social media? (Check all that apply)

Answered: 184 Skipped: 67



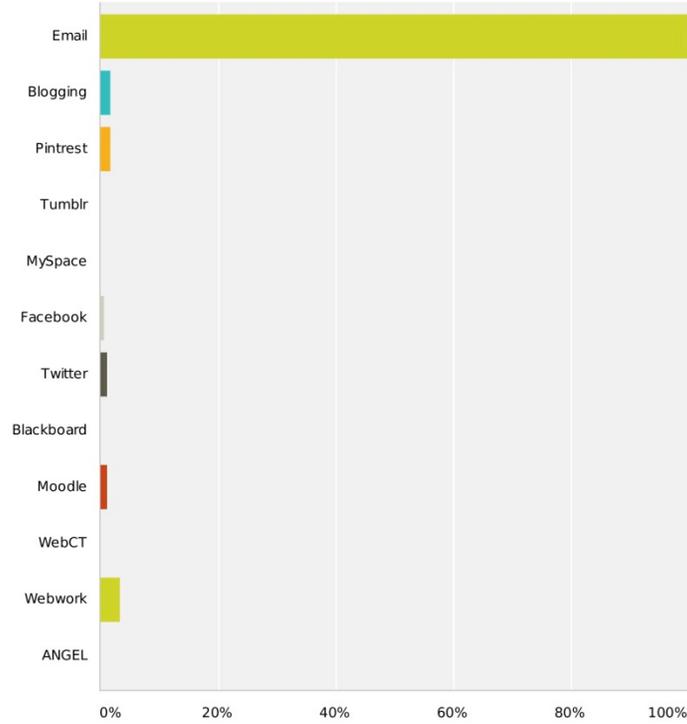
Answer Choices	Responses
Email	98.37% 181
Blogging	12.50% 23
Pintrest	3.80% 7
Tumblr	1.09% 2
MySpace	0.54% 1
Facebook	11.96% 22
Twitter	6.52% 12
Blackboard	7.61% 14
Moodle	10.87% 20
WebCT	2.17% 4
Webwork	4.35% 8
ANGEL	1.09% 2



New Hampshire School Nurses Survey: NH Fusion Center

Q13 Does the nurse's office use social media? (Check all that apply)

Answered: 184 Skipped: 67



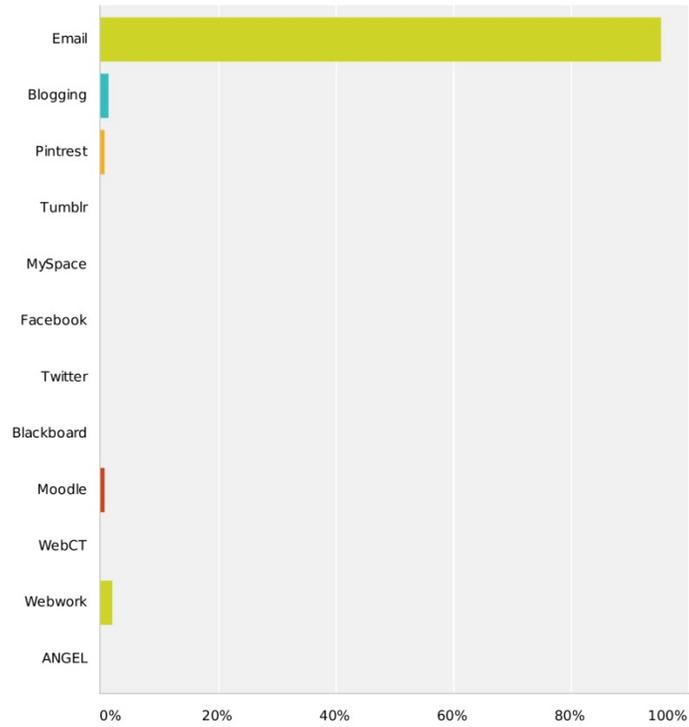
Answer Choices	Responses	Count
Email	100%	184
Bloggng	1.63%	3
Pintrest	1.63%	3
Tumblr	0%	0
MySpace	0%	0
Facebook	0.54%	1
Twitter	1.09%	2
Blackboard	0%	0
Moodle	1.09%	2
WebCT	0%	0
Webwork	3.26%	6
ANGEL	0%	0



New Hampshire School Nurses Survey: NH Fusion Center

Q14 Does the nurse's office use social media? (Check all that apply)

Answered: 151 Skipped: 100



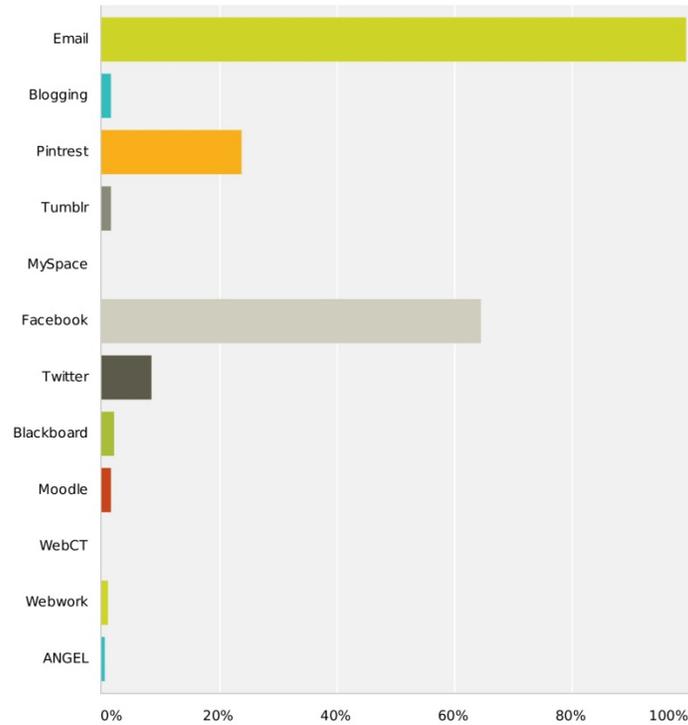
Answer Choices	Responses	Count
Email	95.36%	144
Bloggng	1.32%	2
Pintrest	0.66%	1
Tumblr	0%	0
MySpace	0%	0
Facebook	0%	0
Twitter	0%	0
Blackboard	0%	0
Moodle	0.66%	1
WebCT	0%	0
Webwork	1.99%	3
ANGEL	0%	0



New Hampshire School Nurses Survey: NH Fusion Center

Q15 Do you personally use social media? (Check all that apply)

Answered: 189 Skipped: 62



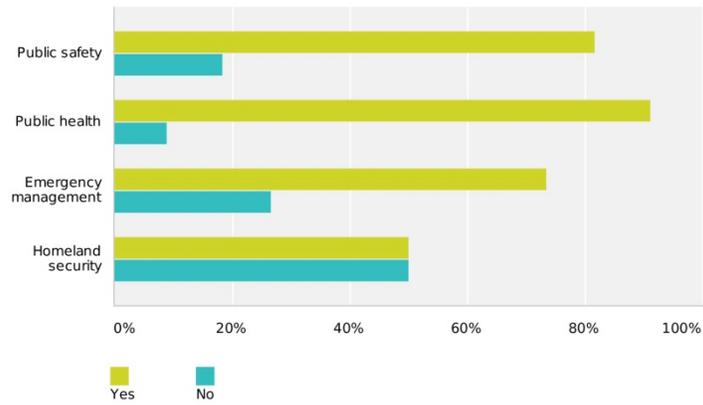
Answer Choices	Responses	Count
Email	99.47%	188
Bloggng	1.59%	3
Pintrest	23.81%	45
Tumblr	1.59%	3
MySpace	0%	0
Facebook	64.55%	122
Twitter	8.47%	16
Blackboard	2.12%	4
Moodle	1.59%	3
WebCT	0%	0
Webwork	1.06%	2
ANGEL	0.53%	1



New Hampshire School Nurses Survey: NH Fusion Center

Q16 Do you receive adequate information related to the following in order to perform your job effectively and efficiently?

Answered: 192 Skipped: 59



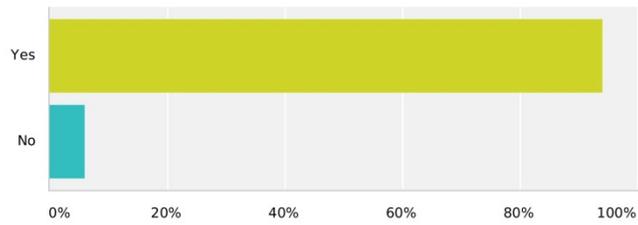
	Yes	No	Total
Public safety	81.68% 156	18.32% 35	191
Public health	91.15% 175	8.85% 17	192
Emergency management	73.44% 141	26.56% 51	192
Homeland security	50% 93	50% 93	186



New Hampshire School Nurses Survey: NH Fusion Center

Q17 Do you receive adequate information in general in order to perform your job effectively and efficiently?

Answered: 185 Skipped: 66



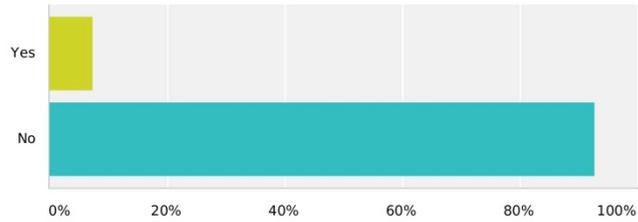
Answer Choices	Responses	Count
Yes	94.05%	174
No	5.95%	11
Total		185
Other (please specify) (11)		



New Hampshire School Nurses Survey: NH Fusion Center

Q18 Are you familiar with the New Hampshire Information and Analysis Center?

Answered: 192 Skipped: 59



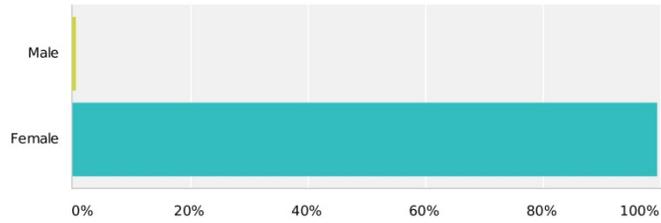
Answer Choices	Responses	
Yes	7.29%	14
No	92.71%	178
Total		192



New Hampshire School Nurses Survey: NH Fusion Center

Q19 Please select your gender

Answered: 188 Skipped: 63



Answer Choices	Responses
Male	0.53% 1
Female	99.47% 187
Total	188

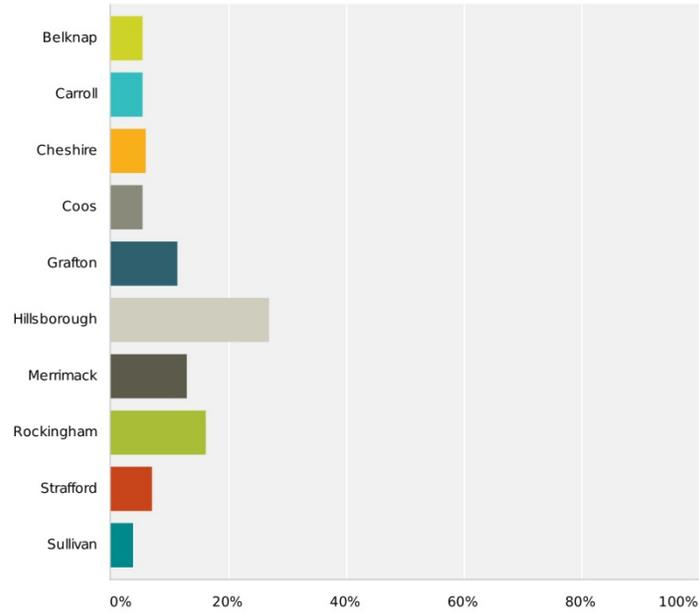
Question 20 is open response.



New Hampshire School Nurses Survey: NH Fusion Center

Q21 Please list the county in which you work

Answered: 186 Skipped: 65



Answer Choices	Responses
Belknap	5.38% 10
Carroll	5.38% 10
Cheshire	5.91% 11
Coos	5.38% 10
Grafton	11.29% 21
Hillsborough	26.88% 50
Merrimack	12.90% 24
Rockingham	16.13% 30
Strafford	6.99% 13
Sullivan	3.76% 7
Total	186



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REFERENCES

- ¹ "Fusion Center Guidelines: Developing and Sharing Information and Intelligence in a New Era." File last modified on Aug. 2006.
<http://www.it.ojp.gov/documents/fusion_center_guidelines_law_enforcement.pdf>.
- ² "State and Major Urban Area Fusion Centers." *U.S. Department of Homeland Security*. U.S. Department of Homeland Security, n.d. Web. 7 Aug. 2012. <<http://www.dhs.gov/state-and-major-urban-area-fusion-centers>>.
- ³ In response to 9/11 attacks, the Intelligence Reform and Terrorism Prevention Act of 2004 mandated the creation of the Information Sharing Environment (ISE), which is described as an approach for the sharing of terrorism-related information. <<http://www.gao.gov/products/GAO-08-492>>.
- ⁴ "National Network of Fusion Centers Fact Sheet." *U.S. Department of Homeland Security*. U.S. Department of Homeland Security, n.d. Web. 7 Aug. 2012. <<http://www.dhs.gov/national-network-fusion-centers-fact-sheet>>.
- ⁵ Riegle, Robert. "The Future of Fusion Centers: Potential Promise and Dangers." *U.S. Department of Homeland Security*. 1 April 2009. Web. 1 April 2013.
<<http://www.dhs.gov/news/2009/04/01/riegle-testimony-future-fusion-centers-potential-promise-and-dangers>>.
- ⁶ Information concerning the specifics of how the centers incorporated public health and medical information is currently unavailable. For instance, the FCC recently took steps to integrate Public Health and Medical information into their fusion center; however, access to more specific information is restricted. There is a document entitled *Public Health and Medical Integration with Florida Fusion Center Standard Operating Guidelines*, which serves to "provide guidance of the purpose, authorities, duration, and details of the preferred method for performing the functions of the public health intelligence liaison officers (ILO) in the FCC," however, it is for official use only and not accessible. <<http://www.fdle.state.fl.us/Content/Florida-Fusion-Center/Menu/FUSION-Home.aspx>>.
- ⁷ "Welcome to the New Hampshire Information and Analysis Center." *New Hampshire Department of Safety*. New Hampshire Government, n.d. Web. 7 Aug. 2012.
<<http://www.nh.gov/safety/information-analysis-center/index.html>>.
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ "About Us." *New Hampshire Department of Safety*. New Hampshire Government, n.d. Web. 7 Aug. 2012. <<http://www.nh.gov/safety/information-analysis-center/about-us.html>>.
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ "Health Security: Public Health and Medical Integration for Fusion Centers: An Appendix to the Baseline Capabilities for State and Major Urban Area Fusion Centers." July 2011. PDF file.
<<http://www.it.ojp.gov/docdownloader.aspx?ddid=1450>>.
- ¹⁴ Ibid.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ Ibid.
- ¹⁹ Ibid.



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- ²⁰ Ibid.
- ²¹ Ibid.
- ²² Ibid.
- ²³ “About DHHS.” *New Hampshire Department of Health and Human Services*. New Hampshire Government, n.d. Web. 13 Aug. 2012. <<http://www.dhhs.nh.gov/about/index.htm>>.
- ²⁴ “Division of Public Health Services.” *New Hampshire Department of Health and Human Services*. New Hampshire Government, n.d. Web. 13 Aug. 2012. <<http://www.dhhs.nh.gov/dphs/index.htm>>.
- ²⁵ “Communicable Disease Control and Surveillance.” *New Hampshire Department of Health and Human Services*. New Hampshire Government, n.d. Web. 13 Aug. 2012. <<http://www.dhhs.nh.gov/dphs/index.htm>>.
- ²⁶ “NH Health Alert Network.” *New Hampshire Department of Health and Human Services*. New Hampshire Government, n.d. Web. 13 Aug. 2012. <<http://www.dhhs.nh.gov/dphs/cdcs/alerts/index.htm>>.
- ²⁷ Ibid.
- ²⁸ Ibid.
- ²⁹ “About CDC.” *Center for Disease Control and Prevention*. USA Government, n.d. Web. 30 Aug. 2012. <<http://www.cdc.gov/about/organization/cio.htm>>.
- ³⁰ “Public Health Surveillance and Informatics Program Office (PHSIPO)*.” *Center for Disease Control and Prevention*. USA Government, n.d. Web. 30 Aug. 2012. <http://www.cdc.gov/osels/phsipo/PHISPO_overview.html>.
- ³¹ Ibid.
- ³² Ibid.
- ³³ Ibid.
- ³⁴ Ibid.
- ³⁵ Ibid.
- ³⁶ Ibid.
- ³⁷ Ibid.
- ³⁸ Ibid.
- ³⁹ Ibid.
- ⁴⁰ “NNDSS Home.” *National Notifiable Diseases Surveillance System*. USA Government, n.d. Web. 30 Aug. 2012. <<http://wwwn.cdc.gov/nndss/>>.
- ⁴¹ Ibid.
- ⁴² Ibid.
- ⁴³ “Public Health Information Network” *Center for Disease Control and Prevention*. USA Government, n.d. Web. 30 Aug. 2012. <<http://www.cdc.gov/phn/about/index.html>>.
- ⁴⁴ Ibid.
- ⁴⁵ Ibid.
- ⁴⁶ Riegle, Robert. “The Future of Fusion Centers: Potential Promise and Dangers.” *U.S. Department of Homeland Security*. 1 April 2009. Web. 1 April 2013. <<http://www.dhs.gov/news/2009/04/01/riegle-testimony-future-fusion-centers-potential-promise-and-dangers>>.
- ⁴⁷ Ibid.
- ⁴⁸ Ibid.



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⁴⁹ “2010 School Nurse Survey.” *New Hampshire Department of Education Office of School Health, School Health Services*. New Hampshire Government. Web.
<http://www.education.nh.gov/instruction/school_health/documents/schoolnursesurvey-2010.pdf>