Hepatitis B: Are Health Occupations Education Students Protected?

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Hepatitis B:
Are Health Occupations Education Students Protected?

Cynthia Chappelka

Abstract: The Occupational Safety and Health Administration regulations of 1992 require that health care facility employees at risk of bloodborne pathogen exposure be provided the hepatitis vaccine at no charge. Students in health occupations education are not covered under these regulations even though they are at risk. Little is known concerning student protection during their program of study. In order to establish baseline information, a survey was conducted to determine whether or not licensed practical nursing programs in Virginia maintained policies and procedures for students to obtain the hepatitis vaccine. Findings indicate that 68% of the responding programs have a hepatitis policy, and 49% of the programs have 80% or more of their students protected by the hepatitis vaccine. It is recommended that all states should determine if their health occupations education students are protected with the hepatitis vaccine.

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The Occupational Safety and Health Administration (OSHA) has mandated regulations to protect any employee at risk for exposure to bloodborne pathogens (Department of Labor, 1991). These include universal precautions/body substance isolation, handwashing controls, personal protective equipment, work practice controls, and hepatitis B immunization provided at no charge to the employee (West Virginia Department of Education, 1992).

A variety of harmful microorganisms may be transmitted through contact with infected blood, but the risk of coming in contact with hepatitis is the greatest (West Virginia Department of Education, 1992). Every year approximately 300,000 persons in the United States are infected with the hepatitis virus (HBV). Of these, 75,000 become ill with jaundice, more than 10,000 require hospitalization, and 250 die of the disease (Office of Health Compliance, 1992). OSHA estimates that occupational exposures account for roughly 5,900 to 7,400 cases of HBV infection each year (West Virginia Department of Education, 1992). Between 6% to 10% of those who become infected with hepatitis become carriers, well persons who can transmit hepatitis to others. Hepatitis carriers are at risk for cirrhosis of the liver and primary liver cancer. An estimated 4,000 persons die each year from cirrhosis related to hepatitis B infection, and more than 800 die from hepatitis B-related liver cancer (Office of Health Compliance Assistance, 1992). Just as medical and dental facility employees are at risk for H13V exposure, students in health occupations education (HOE) who practice in clinical settings are also at risk of coming in contact with hepatitis B. Arguably, students are even more at risk due to their lack of experience.

OSHA regulations require that the employer protect employees in the clinical setting at risk for exposure, but these regulations do not address students (West Virginia Department of
Therefore, it becomes the responsibility of HOE leaders and teachers to ensure that students are protected from bloodborne pathogens such as hepatitis. The best prevention against HBV is the hepatitis vaccine which, according to OSHA regulations, is provided at no charge to employees. Again, this regulation does not apply to students. The vaccine is expensive, approximately $130 for the series of three injections. This high cost can discourage students and sometimes teachers from advocating and implementing use of the vaccine. However, hepatitis is potentially serious enough to warrant investigation into student access to the vaccine. If such access does not exist, education and other procedures should be initiated to ensure that programs have a formal hepatitis vaccine policy that covers their students.

The HOE leadership in Virginia has been concerned about hepatitis risks for students and has conducted seminars for HOE teachers. Students have also attended workshops at both Health Occupations Students of America (HOSA) regional meetings and the HOSA state leadership conference. Directors of licensed practical nursing (LPN) programs were surveyed to determine answers to the following questions:

1. Do the programs have a formal hepatitis policy?
2. Who is responsible for payment for the vaccine?
3. Where do students obtain the vaccine?
4. What percentage of students receive the vaccine?
5. Are there proposed changes in their hepatitis policies?
6. What are the future plans for programs currently without hepatitis policies?
7. What present and future clinical sites could be identified that require students to be vaccinated?

Methodology

Subjects

LPN programs were chosen because LPN students are most at risk. Surveys were mailed to the directors of all 41 LPN programs under the Virginia Department of Education. The names and addresses of program directors were obtained from The Directory of Virginia’s Health Occupations Education Personnel (Virginia Department of Education, 1992).

Thirty-five of the 41 LPN programs were 18-month high school extended programs. The first year LPN students were seniors in high school. Adults were admitted into the programs if there were not enough seniors to fill a class. In the second year, all students were considered postsecondary, although the programs remained the responsibility of the local school district(s). In some cases, however, the entire program was hospital based. Five of the 41 programs were one-year adult programs, hospital based, but still operated under the auspices of a school district(s). One school system had both an 18-month high school extended program and a one-year adult program.

Instrumentation

A survey instrument was drafted and reviewed, with questions developed from previous surveys and workshop information. The survey consisted of space for identification of the LPN program, followed by eight closed-ended questions and five questions that provided
space for comments. However, comments were neither requested nor required; the questions
could be answered yes or no without further clarification. The items involved program
hepatitis policy, person/institution responsible for vaccine payment, places where students
obtained the vaccine, percentage of students receiving the vaccine, proposed changes in
hepatitis policy, future plans for programs without a current hepatitis vaccine policy, and
both present and future clinical sites requiring student and employee hepatitis vaccinations.

Data Collection and Analysis

AU LPN directors received an explanation of the survey purpose, the survey instrument,
and a stamped return envelope. After two weeks, a follow up-letter was sent to the 15 LPN
directors who had not responded. Two telephone calls were made in lieu of follow-up
letters. One week later, an additional six telephone calls were made to directors who had not
returned the survey instrument. Thirty-eight of the 41 directors responded, a 93% return
rate. AU returned survey instruments were usable. Data analyses were limited to
calculations of frequencies and percents.

Results

Programs with Formal Hepatitis Policies

The instrument defined a formal hepatitis policy as information sent home that required
either a student or parent signature indicating whether or not a student would receive a
hepatitis vaccine. Twenty-four (63%) participants replied yes, eight (21%) responded no,
and six (17%) did not respond. Two program directors that responded in the negative added
comments. One stated that the students must sign a “risk for exposure to communicable
disease” information sheet and strongly encouraged the vaccine, but did not yet require it.
The other program director stated that policy recommended, but did not require the vaccine, and included the policy as part of the student handbook. Parents had to document that they had read and understood all policies.

Who Pays for Hepatitis Vaccine Immunization

The most frequent answer to the question of who pays for the hepatitis vaccine immunization was that the student pays for vaccine (58%). The cost ranged from $92 to $160, with an average cost of $120. The next most frequent response was hospital (29%). Other responses included: (a) employment as certified nurse aide (21%), (b) Jobs Training Partnership Act (JTPA) (21%), (c) medical insurance (16%), (d) military hospital or clinic (11%), (e) Medicaid (8%), and (f) cost included in tuition. The category “other” was answered by six programs (16%), and included: (a) prison, (b) dentist employer, (c) rescue squad member, (d) degrees in other fields, (e) Pen Grant or Stafford Loan, and (f) Virginia Employment Council. Some program directors responded in more than one category. Two programs left the question blank. Table 1 lists the responses regarding who or what agency pays for the hepatitis vaccine.

Where Students Receive Hepatitis Vaccine

Hospitals (n=17, 45%) were named as the agencies where students received their hepatitis immunizations most frequently. Ten hospitals provided the vaccine free, while the remaining seven hospitals charged. The next most frequent response was the health department (37%). AU health departments charged, but free vaccine was available for students who lived in two specific counties, or those who qualified economically. Ten (26%) participants responded physician, where there was always a fee. LPN instructors provided
Table 1

Who Pays for Hepatitis Vaccine Immunization

<table>
<thead>
<tr>
<th>Individual/agency</th>
<th>Frequency*</th>
<th>Percent**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>22</td>
<td>58</td>
</tr>
<tr>
<td>Hospital</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>JTPA</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Medical Insurance</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Military Medicine</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Medicaid</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Included in Tuition</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>16</td>
</tr>
</tbody>
</table>

* Multiple entries (N= 61)

** Multiple responses account for >100%

the vaccine in six programs, charging only for the vaccine, except in one program where the vaccine was paid for by tuition. Three military clinics provided the immunizations at no expense to the students. The replies under “other” included several students receiving the vaccine at no charge at their places of employment, and one at a medical clinic where there was a charge. One respondent did not answer the question. Table 2 depicts the distribution of responses.
Table 2

Where do Students Receive the **Hepatitis Vaccine**

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency*</th>
<th>Percent**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>17</td>
<td>45</td>
</tr>
<tr>
<td><strong>Health</strong> Department</td>
<td>14</td>
<td>37</td>
</tr>
<tr>
<td>Physician</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>LPN Instructors</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Military Medical Facility</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>13</td>
</tr>
</tbody>
</table>

* Multiple entries (N =55)

** Multiple responses account for >100%

Percentage of students who received the **hepatitis** vaccine

Table 3 contains the percentages of HOE students receiving the hepatitis vaccine.

Seven programs had 100 % of their students receiving the vaccine. Nine programs had 90-99% of their students receiving the vaccine. Responses for three programs had 70-89 %. Six programs had 50% of their students receiving the vaccine, and three programs had 30-49%. One program had 15-29 % of their students being protected by the hepatitis vaccine, and four had 0-1 O%. One program reported that no students had received the vaccine although its
Table 3

**Percentage of Students Receiving the Hepatitis Vaccine**

<table>
<thead>
<tr>
<th>Range Percent</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>7</td>
</tr>
<tr>
<td>90-99%</td>
<td>9</td>
</tr>
<tr>
<td>70-89%</td>
<td>3</td>
</tr>
<tr>
<td>50%</td>
<td>6</td>
</tr>
<tr>
<td>30-49%</td>
<td>3</td>
</tr>
<tr>
<td>15-29%</td>
<td>1</td>
</tr>
<tr>
<td>0-10%</td>
<td>4</td>
</tr>
</tbody>
</table>

The cooperating hospital would provide it for free. They noted that there had been miscommunication between the program and the hospital. Another program stated that all first-year students said that they would receive the vaccine before they started their second year. Another program, with a 93% immunization rate, stated that all students stinted the series, but one did not complete because of pregnancy. Three programs did not respond to the question, and one program did not know how many students had received the vaccine.
Changes in the Hepatitis Vaccine Policy for Students in Coming Academic Year

This question was clarified in the survey instrument by the example that this year students paid for the vaccine, and next year the hospital would pay. Only two programs responded in the affirmative. One program stated that next year all students would be required to have the vaccine and that students would assume the cost. The other program replied that the hospital had paid the cost for the students this year but would not provide this service next year.

Planned Changes for Programs with no Current Hepatitis Policies

Eight LPN programs replied that they did not have a hepatitis policy, and six did not respond to the question. Table 4 shows the planned changes that were reported for those programs without a formal policy. Of those who did not have a formal hepatitis policy, two expected to change during the next year.

Any Clinical Sites not Allowing Students without Hepatitis Vaccine

Seven program directors (18%) replied yes to the question related to this issue, 27 (71%) replied no, and four did not respond to the question. The LPN program directors that responded yes added several comments. One day-care center would not allow students without the hepatitis vaccine. All the hospitals in one county required that students have the vaccine. Another program used hospitals in two counties, both requiring the vaccine. One hospital would not allow students on the medical floor if they had signed a waiver stating that they did not plan to take the vaccine. One respondent answered no to the question but added that students must sign a hospital release form if they refused the vaccine. When program directors were asked whether there would be clinical sites in the coming year that would
Table 4

**Frequency of Planned Changes for Programs with no Hepatitis Policy**

<table>
<thead>
<tr>
<th>Change for Coming Year</th>
<th>Frequency</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal Policy</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>No Policy Coming Year</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Probably</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Not Definite</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Left Blank</td>
<td>1</td>
<td>12.5</td>
</tr>
</tbody>
</table>

require the hepatitis vaccine, six programs (16%) responded yes, 19 (50%) replied no, three programs (8%) were not sure, and seven programs (18%) left the question blank.

Conclusions

It was noted that 24 of the 38 programs responding did have a formal hepatitis vaccine policy. Of the 14 programs that either did not have a formal policy or left the question blank, four expected to have a policy the next year, resulting in a minimum of 28 of the total 41 public school LPN programs (68%) having a formal hepatitis vaccine policy. Virginia’s HOE leadership should continue to educate and encourage all programs to establish a formal hepatitis policy that protects students on their clinical assignments.
Forty-nine percent of the programs had 80% or more of their students immunized with the hepatitis vaccine. This is encouraging, because the cost of the hepatitis vaccine is a deterrent to total participation. Ten hospitals generously provide the vaccine to students free of charge, an example of school and industry partnership. Unexpected sources of either funding or free services included the military, JTPA, Medicaid, and medical insurance. Previous or present employment in a health facility was another method of obtaining the immunizations at no charge.

Only a few programs (20%) reported that agencies were requiring student hepatitis vaccines as a prerequisite to clinical experience in their facilities. However, this may increase as health industry administrators realize more fully that while their at-risk employees are protected by the hepatitis vaccine, there are students gaining clinical experience who may not be protected. Hospitals are very sensitive to the potential for law suits. Therefore, HOE instructors in the future may need to require the hepatitis vaccine so that their students may practice in the clinical setting.

Recommendations

Hepatitis is a very serious disease. It can cause morbidity and mortality. It can shorten a person’s career in the health professions. HOE leadership has a moral and ethical obligation to institute policies through education and advocacy that ensure students’ protection on the clinical site. OSHA regulations protect the employee in the health-setting through required and free hepatitis immunizations, but unfortunately these regulations do not extend to students.
Chapelka: Hepatitis B: Are Health Occupations Education Students Protected?

It is recommended that all state HOE leaders survey their programs to determine the existence of formal hepatitis vaccine policies and the locations where students can obtain the vaccine at minimum or no cost. After obtaining such baseline data, states can determine if there is a steady improvement in the numbers of students protected by the hepatitis vaccine in the coming years.

References


