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Prematriculation Immunization Policies: A Survey of Kentucky Colleges and Universities

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A Thesis
Presented to
the Faculty of the Department of Public Health
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In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Deborah A. Foushee
December 1996
PREMATRICULATION IMMUNIZATION POLICIES: A SURVEY OF KENTUCKY COLLEGES AND UNIVERSITIES

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Immunizations for vaccine preventable diseases are ordinarily completed by young adulthood, and the school system is typically the institution required to determine compliance with state immunization requirements prior to enrollment. In recent years, outbreaks of measles on college campuses across the United States have led to the implementation of immunization requirements. Kentucky four-year postsecondary institutions are not required by state law to request proof of immunization. The purpose of this study was to assess prematriculation immunization policies of Kentucky four-year colleges and universities. Participants completed a survey which appraised the existence of a university prematriculation policy, the diseases covered by their policy, year of policy implementation, and university departments responsible for initiating the policy. In addition, participants were asked if immunizations are available on campus, which vaccinations are available, if an immunization policy had been considered and how recently, and feedback from students, parents and faculty/staff. The survey assessed the attitudes of the respondent regarding policy benefits/dislikes, need for
state legislation, and institutional attitude toward governmental intervention of their policy making.

Future research on this topic should address the following: the status of prematriculation immunization policies among Kentucky state postsecondary institutions from an epidemiological/public health perspective; explore in greater detail the reason(s) affecting the institutional decision to implement or abandon a prematriculation immunization requirement; investigate or survey the attitudes of students, parents, and faculty/staff toward vaccination programs; include attempts to interview in person a representative from institutions that did not respond to the mailed survey.

Further investigation should be conducted; Kentucky four-year colleges and universities would benefit from additional research on vaccine preventable diseases among college students and information gathered from other states with regard to PMIR policies.
Chapter 1

INTRODUCTION

Immunity is defined as "...Resistance to or protection against a specific disease; power to resist infection, especially as a result of antibody formation" (Webster, 1978). Among United States citizens, immunizations for vaccine preventable diseases are ordinarily completed by young adulthood. Immunization for these diseases is received by approximately ten percent of children worldwide. The infectious diseases for which immunizations are available include measles, pertussis (whooping cough), rubella (German measles), tetanus, polio, tuberculosis, and diptheria (Green, 1990).

In the United States, all states are required to immunize children against these diseases and health departments are ordinarily authorized to provide these immunizations. The school system is typically the institution that is required to determine those children who have not been properly immunized (Robbins et al, 1981).

In Kentucky under KRS 214.0341.1, "All parents, guardians, and other persons having care, custody or control of any child shall have the child tested for tuberculosis and immunized against diptheria, tetanus, poliomyelitis, pertussis, rubeola, and rubella in accordance with testing..."
and immunization schedules established by regulations of the cabinet for human resources...", and further, "Such persons shall also have booster immunizations administered to the child in accordance with the regulations of the cabinet for human resources" (CHR. 1990). KRS 214.034.2. requires that, "Each child entering the public schools shall have proof of having been tested for tuberculosis prior to enrollment" (CHR. 1990).

Primary prevention efforts involve: achieving and maintaining high immunization levels, strong surveillance, and aggressive outbreak control (Pickett, Hanlon, 1990). Secondary prevention of infectious diseases attempts to limit further cases with early screening. This process can uncover disease carriers who have no symptoms but who are infected with the agent and can thus spread it to other individuals (Pickett, Hanlon, 1990). Tertiary disease prevention, which involves the existence of the disease, attempts to stop or retard the spread of the disease. In essence, this third type of preventative measure is the actual treatment of carriers (Pickett, Hanlon, 1990).

The methods utilized in the prevention of infectious disease are based on accessible technology and an appropriate definition of the problem. The plan ordinarily used includes attempts to increase resistance of the host, elimination of the disease agent, and/or an environmental change to decrease the likelihood that a population will have contact with the agent (MMWR, 1978).
Morbidity and Mortality Weekly Reports collected data in 1992 showing that the incidence of measles in Kentucky totaled 443 cases, second to Texas with 990 cases of measles (JAMA. 1993). Forty-nine percent of the Kentucky cases were transmitted among children aged 5 to 19 years of age.

The Centers for Disease Control reported in 1992 that 42 percent of preschool-aged children are properly immunized against vaccine preventable illnesses such as measles, mumps, and rubella (JAMA, 1993). After enrollment in elementary school, the rate of immunization rises dramatically due to immunization statutes in all fifty states (Green, 1990).

Although children are required to show proof of proper immunization when they enter elementary school, many postsecondary (four year colleges and universities) institutions, such as those in Kentucky, do not require immunization boosters for enrollment, even when they provide student health services on campus. A review of Kentucky Revised Statutes, 1990 indicated no such requirement for enrollees in colleges and universities (CHR, 1990).

Purpose of Study

The purpose of this investigation will be to determine the immunization requirements of Kentucky four-year colleges and universities. The instrument used to assess these policies will be a questionnaire developed by this investigator to determine the requirements and the diseases for which immunizations are required.
Need for the Study

College students, being a relatively healthy population free of much chronic illness, are still susceptible to illnesses such as the common cold, influenza, chronic Epstein-Barr Virus Syndrome, rubeola (red measles), rubella, toxic shock syndrome, acquired immune deficiency syndrome (AIDS), and sexually transmitted diseases (Payne, Hahn, 1989). The incidence of vaccine preventable illness is growing among highly vaccinated populations such as college students (Markowitz, Preblud, Orenstein, 1989).

In 1963, a live measles vaccine was licensed in the United States: as a result of this single dose vaccination, the incidence of measles has been lowered significantly (ninety-eight to ninety-nine percent reduction in annual cases) (Markowitz et al, 1989). Measles outbreaks still occur, however, in two primary populations: unvaccinated inner-city, preschool-aged children and high vaccinated secondary and postsecondary students (Hersh et al. 1992). The number of measles cases on college campuses varied between 1.5 percent and 19.8 percent annually from 1980 to 1989 (Hersh et al. 1991).

In 1992, the Student Health Service (SHS) of Western Kentucky University issued a recommendation that students born before 1969 be inoculated with the MMR (measles, mumps, and rubella) vaccine. The spread of these diseases had increased among college students in recent years as shown in numerous studies and reports, prompting the SHS to suggest
that students take measures to protect themselves (Charles, 1992).

**Hypotheses**

The following hypotheses will be tested:

1. Kentucky four-year college and university postsecondary institutions will not have prematriculation immunization requirements.

2. Kentucky four-year college and university postsecondary institutions will not have adequate prematriculation immunization requirements (ACHA guideline in sample legislation)(see Appendix B, C) to prevent potential outbreaks of vaccine preventable illnesses.

3. Kentucky four-year college and university postsecondary institutions will not have proposed that an immunization requirement be implemented.

4. Kentucky four-year college and university postsecondary institutions will not offer students immunizations for vaccine preventable diseases.

5. Kentucky four-year college and university postsecondary institutions which have immunization requirements have realized no benefit (reduction in outbreaks of disease) from the policy.

6. Kentucky four-year college and university postsecondary institutions will have received no response (positive or negative) from faulty, staff, students, or parents regarding immunization requirements.
7. Kentucky four-year college and university postsecondary institutions will not maintain that state legislation is needed to have a prematriculation immunization policy.

8. Kentucky four-year college and university postsecondary institutions will not indicate that they "strongly agree" that a law is necessary to implement a prematriculation immunization requirement at their postsecondary institution.

**Delimitations**

This study is delimited to four-year postsecondary educational institutions in the state of Kentucky in January 1996.

**Limitations**

This study has the following limitations:

1. Four-year institutions who returned the questionnaire may not be representative of all four-year postsecondary institutions.

2. The results of this study should not be generalized to other colleges and universities in the United States.

**Assumptions**

The assumptions made in this study are the following:

1. It is assumed that the respondents answered each question honestly to accurately represent the four-year institution's policies on immunization:
2. It is assumed that the respondents understood the questionnaire instructions and how to properly answer the questions:

3. It is assumed that the questionnaire was answered by the appropriate respondent at each respective institution.

**Definitions**

The following are definitions of terms used in this thesis:

1. **Booster shot** - an injection of a vaccine or other antigen some time after the initial series of injections, for maintaining immunity (*Webster*, 1978).

2. **Immunize** - to give immunity to, as by inoculation (*Webster*, 1978).

3. **MMR** - the abbreviated reference to the measles, mumps, and rubella vaccine.

4. **Measles** - an illness characterized by all of these clinical features: a) generalized rash lasting three or more days, b) a bodily temperature of 101 degrees Fahrenheit or greater, c) cough, coryza, or conjunctivitis (*MMWR*, 1990).

5. **Mumps** - an illness with acute onset of unilateral or bilateral tender, self-limiting swelling of the parotid or other salivary gland, lasting two or more days, and without other apparent cause (as reported by a health professional) (*MMWR*, 1990).
6. **Postsecondary Institution** - two or four year college or university.

7. **Prematriculation** - before enrollment as a student in a college or university (Webster, 1978).

8. **Rubella** - an illness exhibiting the following characteristics: a) acute onset of generalized maculopapular rash, b) a bodily temperature of greater than 99 degrees Fahrenheit, c) arthralgia/arthritis, or lymphadenopathy, or conjunctivitis (MMWR, 1990).

9. **Serum** - blood serum containing agents of immunity, taken from an animal made immune to a specific disease by inoculation: it is used as an antitoxin and for diagnosis (Webster, 1978).

10. **Vaccinate** - to inoculate with a specific vaccine in order to prevent disease (Webster, 1978).

11. **Vaccine** - any preparation of killed microorganisms, living weakened organisms, etc. introduced into the body to produce immunity to a specific disease by causing the formation of antibodies (Webster, 1978).
Chapter 2

Review of Literature

The eradication of infectious disease has been a primary objective for health organizations worldwide. Vaccinations to prevent the spread of diseases such as measles, mumps, polio, etc. are only useful when the responsibility for immunization is undertaken by the public, health care providers and community health organizations (Dowdle, Orenstein, 1993).

Immunity from vaccine preventable illnesses can be achieved through..."(i) individual protection – assuring a life-long immune response capable of repelling challenges individuals may receive at any time in their lives, and (ii) community protection – reducing or even eliminating the possibility that nonimmune individuals will be exposed to the infectious agent" (Dowdle, Orenstein, 1993).

Populations that have high levels of immunity lower the risk of transmission of a disease, thus lowering the chances of susceptible persons being infected (Anderson, May, 1982). Many factors such as allergies and age affect the levels of immunity in a given group, diminishing the possibility of one hundred percent protection from a given vaccine. Therefore, the chance of disease transmission should be
lowered as much as possible by consistent, comprehensive immunization in a population. (Anderson, May, 1982).

Public health policies and programs have been instrumental in the fight to control vaccine preventable diseases. An example of such direction is the World Health Organization (WHO) goal to eradicate polio worldwide by the year 2000. Not only do such groups as WHO assist in eliminating disease, disability and death, they also eliminate the need for vaccinations and expensive serum costs. The end of polio would result in an estimated annual savings of $110 million in the United States in vaccine costs (Dowdle, Orenstein, 1982).

The United States government in 1955 passed the Poliomyelitis Vaccine Assistance Act in reaction to reports of inadequate immunization in children under five years of age. In 1962, this program was augmented by the Vaccine Assistance Act which promoted expansion, at the state-level, of immunization programs for all children against vaccine-preventable illnesses (Green, 1990). It is well-documented that in spite of the importance placed on such programs, many children were not and still are not properly immunized.

The federal Department for Health and Human Services has embarked upon a national crusade to erradicate childhood diseases. Professional groups such as the American Academy of Pediatrics, the American Academy of Family Practice, the National League of Nursing, the National Medical Association, the American Red Cross, and the American
Hospital Association have made vital contributions to immunization drives and these organizations continue to support these efforts. It is now mandatory in all fifty states that children be fully immunized against vaccine-preventable illnesses before entering grade school (Green, 1990).

The spread of measles has been particularly hard to combat in past years. Although numerous areas of the U. S. have reported outbreaks of diseases such as measles, on a national level reported cases of measles have been declining. However, in 1991 and 1992, reports from the Kentucky Cabinet for Human Resources, Division of Health Services did not show a decline in measles transmission (KEN&R, 1992).

In 1990, two Kentucky colleges were threatened by measles. Nineteen of twenty-five cases from January 1, 1990 to June 30, 1993 were associated with Berea College and Eastern Kentucky University. These outbreaks were compared to others that occurred on campuses across the U. S. Notably, due to prior vaccination, fewer cases of measles resulted although vast numbers of students and medical personnel were exposed to the virus (KEN&R, 1990).

Through October 31, 1991 in Jefferson County, Kentucky, 32 cases of measles were reported - 22 of which were identified in elementary and high schools compared to 1 case the previous year (KEN&R, 1991).
As published in *Morbidity and Mortality Weekly Report*, Kentucky (443 cases) and Texas (990 cases) reported the largest measles outbreaks in the U. S. in 1992. Transmission of the 443 Kentucky cases was highest among the 5 - 19 year old group (forty-nine percent of the total cases). More than half of the total number of cases occurred in Louisville (Jefferson County), the largest community in the Commonwealth (*MMWR*, 1993). In all of the Kentucky cases of measles transmission, control measures included comprehensive immunization drives among the affected populations.

Of all vaccine preventable illnesses, measles is generally accepted to be the most challenging to eliminate based on the ease with which it can be transmitted. In Kentucky, surveys reported in November 1992 estimated that nearly fifty percent of children are fully immunized by two years of age. National vaccination goals stipulate immunization rates of ninety percent (*KEN&R*, 1992).

In 1978, the Center for Disease Control reported a drive to eradicate measles in the U. S. by October 1982 (*MMWR*, 1978). The period of 1982 through 1988 was documentably low and consistent, however, measles showed significant growth from 1989 to 1990 (*MMWR*, 1988, 1990). The groups most affected during the resurgence period were inadequately vaccinated preschool children (under five years of age from urban areas) and vaccinated children and
adolescents aged five to nineteen (Markowitz, Preblud, Orenstein, 1989).

The Immunization Practices Advisory Committee (ACIP) is a Center for Disease Control (CDC) group which reviews standards of immunization practice and makes recommendations for effective control strategies for vaccine preventable illnesses. ACIP met in February 1988 to revise measles vaccination standards (MMWR, 1989). The group recommended that the two groups determined to be at greatest risk would have fewer outbreaks if changes were made in the delivery of vaccinations. These included: (a) routine two-dose schedules of the MMR (measles, mumps, and rubella) vaccine, (b) and single dosage revaccination for all (elementary) children in the school setting (JAMA, 1989).

It should be noted that although the risk associated with immunization of a live vaccine is generally safe, some recipients of the MMR vaccine remain at risk. An example of this is a study which indicated that those who have an allergy to eggs experience serious physical problems such as swelling of the mouth and throat, wheezing, hypotension, shock, and other symptoms after an MMR vaccination (Lavi, Zimmerman, Koren, Gold, 1986). For such persons, no vaccination substitute has been determined to reduce these effects.

A study published in 1991 found that children fifteen to eighteen months of age with upper respiratory tract infections showed significant vulnerability to measles in
spite of the MMR immunization (Krober, Stracener. Bass 1991). This lack of immunity is referred to as primary vaccination failure - a failure of the first dose of a vaccine to illicit an appropriate immunological response in the body to a disease. Primary vaccination failure is generally believed to be a significant factor in disease outbreaks of previously immunized populations (Mathias, Meckson et al. 1989).

A 1989 study published in the American Journal of Public Health analyzed the role of secondary vaccination failures in relation to measles outbreaks. Secondary vaccination failure occurs when immunization is not achieved after a person has been given two dosages of a particular vaccine. The conclusions of the researchers were (1) secondary vaccination failures, while few in number, contribute to the spread of measles in epidemics and (2) "a booster dose of the measles vaccine may be necessary to reduce the susceptibility to a sufficiently low level" (Mathias, Meekson et al. 1989).

A 1990 report published in MMWR focused on recommendations made by ACIP for prevention of rubella. The rubella infection can result in miscarriages, stillbirths, fetal anomalies, and therapeutic abortions in pregnant women during the first trimester. Since the vaccine for rubella is routinely included with the measles and mumps vaccines the ACIP recommended that a two-dose schedule of the vaccine be initiated (MMWR, 1990).
In 1993, the Childhood Immunization Initiative (CII) was created to improve levels of immunization through focus on delivery, reduced costs to families, improved public and health care provider awareness, observation/monitoring of coverage and disease, and development of vaccines and their distribution (MMWR. 1994). The primary objective of CII was to raise vaccination levels among two-year-olds to a minimum of ninety percent by 1996 (MMWR. 1994).

The CDC reported that levels of appropriate vaccination rose in the U. S. from 1992 into the first quarter of 1993, demonstrating that the objective set by CII was having an impact. It was suggested that this increase could have been attributable to cyclical measles outbreaks, however, rather than adherence to new standards by the public and health care providers (JAMA. 1994).

Inoculation for vaccine preventable illnesses are not limited to children and adolescents. The U. S. Army routinely inoculates enlisted recruits with a measles/rubella (MR) vaccine (Arday et al. 1989). A study published in the American Journal of Public Health addressed the cost effectiveness of adding the mumps vaccine to the MR group in order to reduce mumps outbreaks. An increase in mumps outbreaks had been documented in 1986 and 1987 among secondary and post secondary institutions in the civilian population and, in particular, in a U. S. Army unit in 1986. The researchers concluded that adding the mumps vaccine would not have been cost effective on a global perceptive
but noted that immunization of persons without prior history of immunity from mumps could demonstrate reductions in mumps outbreaks (Arday et al, 1989).

In the late 1980's, many articles were published in professional medical journals addressing the resurgence of mumps, measles, and other diseases among college age persons. Measles has been a particular concern to college campuses. Two primary factors appear to contribute to increased outbreaks at colleges and universities: (1) inadequate immunization in childhood (those born prior to licensure of the measles vaccine in 1963) and (2) inappropriate vaccination upon entrance into the school system and thereafter (Amler, Kim-Farley, Orenstein, 1983).

An article published in the Journal of American College Health in 1983 detailed how exposure to measles is a serious problem; insufficiently vaccinated college populations were resulting in costly problems. Measles outbreaks at Indiana University, Miami University (Ohio), University of Houston (Texas), Louisiana State University, and Purdue University (Indiana) demonstrated risk to public health. The authors of this article noted that three factors contribute to the ease of measles transmission: (1) low immunization, (2) the inclination for students to cluster in groups, and (3) the ease of travel to areas where measles is readily transmitted (Amler, Kim-Farley, Orenstein, 1983).

The social nature of a typical college student also provides the opportunity for a disease outbreak. Amler et
al. suggested that students gather in sizable groups and go to areas where the spread of measles is transmissible. These factors accommodate the introduction and spread of measles in the campus setting (AJPH 1991).

The ACIP and the American College Health Association (ACHA) have recommended that post secondary institutions require proof of immunization against vaccine preventable diseases before a student is allowed to enroll (ACHA 1992). As a result, ACHA developed two versions of a legislative act which mandates that proof of immunization be a prematriculation requirement.

The act itself focused on six issues that are the basis for a requirement: (1) measles, mumps and rubella as well as other diseases are increasing among fifteen to twenty-four year olds. (2) reductions in vaccine preventable disease outbreaks have been a result of U. S. Army policies requiring proof of immunization at the time of enlistment. (3) ACIP and other health care organizations have recommended prematriculation immunization requirements at post secondary institutions. (4) in spite of these endorsements, post secondary institutions have not implemented pre-enrollment vaccination policies. and (5) in the interest of public health, communities at-large would benefit from the immunization of college populations (ACHA 1992).

Section 3 of this act addresses the institutional requirements. The post secondary institution would not
allow any person to enroll without a certificate of immunization - 2 doses for measles, 1 dose for mumps, 1 dose of live rubella and any combination of 3 or more doses of diphtheria or diphtheria (adult Td) vaccine and tetanus or tetanus (pediatric DT) (ACHA 1992). Exemptions to these points must be documented thoroughly. These include exemption due to a health condition (as documented by a health care provider), pregnancy or suspicion of pregnancy in females with a written statement from a health care provider, and students already receiving the vaccinations on a specific schedule. Finally, should any exempted student later become eligible for immunization because a previous condition no longer exists, s/he would be required to become immunized (ACHA 1992).

Version R of the ACHA act to initiate vaccination requirements allows for religious, as well as medical, exemption. Summarized, a student would be required to produce a written statement detailing their disapproval to immunization is based on the guideline that such action conflicts with the convictions and practices of a recognized church or religious group of which they are a part (ACHA 1992).

A widespread outbreak of measles among New York high school and college students in 1989 prompted the state Department of Health to implement a two-dose schedule, making them the first in the US to do so. NYS Department of Health officials reasoned that a two-dose strategy was
superior to a single-dose vaccination based upon four
tenents: (1) revaccination of persons who did not develop
immunity after the initial dose would bring about immunity;
(2) persons who receive the two-dose protocol exhibited a
third to one half the incidence of the disease; (3) research
models suggested that herd-immunity would result from a two-
dose schedule; and (4) considerable reductions in measles
outbreaks resulted from a two-dose schedule in ten European
countries as well as among US military organizations
implementing such programs (Brikhead, Morse et al., 1991).

In the first quarter of 1990, prematriculation
immunization requirements were active in 22 states by law or
policy. The ACIP recommended a two-dose protocol of the
measles vaccine for college students to limit outbreaks at
postsecondary institutions. Five states reported the
largest outbreaks of measles on college campuses in 1989 and
only one state among these had a prematriculation
immunization requirement in place (JAMA, 1990).
Chapter 3  
METHODS

The methodology selected for this investigation was the cross sectional, descriptive survey. This design allows a researcher to measure a sample of a population on one characteristic or a variety of characteristics by administering an evaluative questionnaire. The assessment tool utilized in this study was a questionnaire designed by the investigator to determine the immunization policies of the study participants.

The design of this study was based on the null hypothesis that four-year postsecondary institutions in the Commonwealth of Kentucky have not developed prematriculation immunization requirements for their students. In recent years there have been outbreaks of vaccine preventable diseases at several postsecondary institutions across the United States, including several in Kentucky.

Hypotheses

The following hypotheses were tested:

1. Kentucky four-year postsecondary institutions will not have prematriculation requirements.

2. Kentucky four-year postsecondary institutions will not have sufficient (American College Health Association established minimum of these four: Measles, Mumps, Rubella,
and Tetanus-Diphtheria)(see Appendix B, C) prematriculation immunization requirements to prevent potential outbreaks of vaccine preventable illnesses.

3. Kentucky four-year postsecondary institutions have not considered adopting a prematriculation immunization requirement.

4. Kentucky four-year postsecondary institutions do not offer students immunizations for vaccine preventable diseases.

5. Kentucky four-year postsecondary institutions which have immunization requirements have realized no benefit (reduction in outbreaks of disease) from the policy.

6. Kentucky four-year postsecondary institutions will have received no response (positive or negative) from faculty, staff, students, or parents regarding immunization requirements.

7. Kentucky four-year postsecondary institutions will not support state legislation requiring colleges/universities have a prematriculation immunization policy.

8. Kentucky four-year postsecondary institutions will not agree that a law is needed to implement a prematriculation immunization requirement at their postsecondary institution.

Population

The population of this study included all twenty-nine Kentucky four-year postsecondary colleges and universities.
Sample Selection

Each four-year postsecondary institution was sent a survey with a cover letter and a self-addressed stamped envelope. The recipient of the survey was the Office of the President at each school. The questionnaire was administered by mail in January 1996. A follow-up mailing was conducted in March 1996 to those institutions who had not responded to the initial survey. A telephone call was made to those institutions who did not respond to the mailings.

Design

The study was a cross sectional, descriptive survey. The immunization policy questionnaire was sent to the Office of the President for response and a follow-up mailing, urging study participation, was conducted for those who had not responded to the first questionnaire.

Instrument

The prematriculation immunization policy questionnaire was a survey developed by the researcher and reviewed by a panel of four doctoral level health experts. It was comprised of questions to assess the immunization policies of a given institution. The format of the survey was comprised of eleven questions which were designed to ascertain the following: if the institution offered immunizations to students and the type, if prematriculation immunization policies existed, which diseases were covered under this policy, if a prematriculation requirement had been a topic of consideration, the date of the policy
implementation, policy benefits and drawbacks, the type of feedback from students, parents, and faculty/staff, and attitudes toward governmental requirements for immunization.

Data Analysis

Data analysis was accomplished by transcribing information gathered from survey respondents into a computer data base using SPSS 6.1 for Windows (Prentice-Hall, Inc. 1994). The data collected from the questionnaire were of a descriptive nature. Analysis focused on describing and summarizing responses to individual items. On several variables chi square analysis was done comparing private to public schools.

Variables

The variables of interest in this study were (a) vaccination requirement status, (b) vaccination policy existence, (c) prematriculation requisites, (d) policy existence, (e) policy drawbacks, (f) quality of social feedback, and (g) attitudes towards government regulation.
CHAPTER 4

RESULTS

Description of Study Sample

All accredited colleges and universities in Kentucky were mailed the Prematriculation Immunization Requirement Survey (PMIRS) (N=29; p=100%). All recipients were provided with a self-addressed stamped envelope for return of the survey. A second survey was mailed to all institutions that had not responded within 2 weeks following the initial mailing. A total of 27 colleges and universities responded to the survey (Table 1)(n=27; p=93.10%). These institutions were both private (n=19; p=70.37%) and public (n=8; p=29.63%). The mean enrollment across all participating schools was 3981 students (Standard Deviation=6770.27; Range=185 to 23618).

Descriptive Data

Data on the subjects' responses to the PMIRS are summarized in the following charts and tables. Table 2 displays the institution's response (private versus public): whether or not it had a formal policy requiring prematriculation immunization (private(n=19): yes=52.63%, no=47.37%; public(n=8): yes=12.5%, no=87.5%). $\chi^2=(1, N=27)=2.05$. n.s.
Table 1

Kentucky Colleges and Universities

<table>
<thead>
<tr>
<th>institution</th>
<th>location</th>
<th>enrolled (1993)</th>
<th>reply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Lloyd College</td>
<td>Pippa Passes</td>
<td>548</td>
<td>no</td>
</tr>
<tr>
<td>Asbury College</td>
<td>Wilmore</td>
<td>1070</td>
<td>yes</td>
</tr>
<tr>
<td>Asbury Theological Sem.</td>
<td>Wilmore</td>
<td>687</td>
<td>yes</td>
</tr>
<tr>
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<td>Louisville</td>
<td>2294</td>
<td>yes</td>
</tr>
<tr>
<td>Berea College</td>
<td>Berea</td>
<td>1589</td>
<td>yes</td>
</tr>
<tr>
<td>Brescia College</td>
<td>Owensboro</td>
<td>840</td>
<td>yes</td>
</tr>
<tr>
<td>Campbellsville College</td>
<td>Campbellsville</td>
<td>760</td>
<td>yes</td>
</tr>
<tr>
<td>Centre College</td>
<td>Danville</td>
<td>875</td>
<td>yes</td>
</tr>
<tr>
<td>Cumberland College</td>
<td>Williamsburg</td>
<td>1880</td>
<td>yes</td>
</tr>
<tr>
<td>Eastern Kentucky Univ.</td>
<td>Richmond</td>
<td>16125</td>
<td>yes</td>
</tr>
<tr>
<td>Georgetown College</td>
<td>Georgetown</td>
<td>1546</td>
<td>yes</td>
</tr>
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<td>Kentucky Christian College</td>
<td>Grayson</td>
<td>505</td>
<td>yes</td>
</tr>
<tr>
<td>Kentucky State University</td>
<td>Frankfort</td>
<td>2534</td>
<td>yes</td>
</tr>
<tr>
<td>Kentucky Wesleyan College</td>
<td>Owensboro</td>
<td>691</td>
<td>yes</td>
</tr>
<tr>
<td>Lexington Theo. Seminary</td>
<td>Lexington</td>
<td>185</td>
<td>yes</td>
</tr>
<tr>
<td>Lindsey Wilson College</td>
<td>Columbia</td>
<td>1507</td>
<td>yes</td>
</tr>
<tr>
<td>Louisville Presbyterian Theo. Sem.</td>
<td>Louisville</td>
<td>209</td>
<td>yes</td>
</tr>
<tr>
<td>Morehead State Univ.</td>
<td>Morehead</td>
<td>7942</td>
<td>yes</td>
</tr>
<tr>
<td>Murray State University</td>
<td>Murray</td>
<td>8328</td>
<td>yes</td>
</tr>
<tr>
<td>Northern Kentucky Univ.</td>
<td>Highland Heights</td>
<td>11540</td>
<td>yes</td>
</tr>
<tr>
<td>Pikeville College</td>
<td>Pikeville</td>
<td>941</td>
<td>yes</td>
</tr>
<tr>
<td>So. Baptist Theo. Sem.</td>
<td>Louisville</td>
<td>1844</td>
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</tr>
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<td>Spaulding University</td>
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<td>Thomas More College</td>
<td>Crestview Hills</td>
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</tr>
<tr>
<td>Transylvania University</td>
<td>Lexington</td>
<td>1038</td>
<td>yes</td>
</tr>
<tr>
<td>Union College</td>
<td>Barbourville</td>
<td>943</td>
<td>yes</td>
</tr>
<tr>
<td>Univ. of Kentucky</td>
<td>Lexington</td>
<td>23618</td>
<td>yes</td>
</tr>
<tr>
<td>Univ. of Louisville</td>
<td>Louisville</td>
<td>23575</td>
<td>no</td>
</tr>
<tr>
<td>Western Kentucky Univ.</td>
<td>Bowling Green</td>
<td>15767</td>
<td>yes</td>
</tr>
</tbody>
</table>
Table 2

**Formal Prematriculation Policy**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Formal Policy</th>
<th>Funding Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Lloyd College</td>
<td>not available</td>
<td>private</td>
</tr>
<tr>
<td>Asbury College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Asbury Theological Seminary</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Bellarmine College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Berea College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Brescia College</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Campbellsville College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Centre College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Cumberland College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Eastern Kentucky University</td>
<td>no</td>
<td>public</td>
</tr>
<tr>
<td>Georgetown College</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Kentucky Christian College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Kentucky State University</td>
<td>no</td>
<td>public</td>
</tr>
<tr>
<td>Kentucky Wesleyan College</td>
<td>yes</td>
<td>public</td>
</tr>
<tr>
<td>Lexington Theological Seminary</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Lindsey Wilson College</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Louisville Presbyterian</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Theological Seminary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morehead State University</td>
<td>no</td>
<td>public</td>
</tr>
<tr>
<td>Murray State University</td>
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<td>public</td>
</tr>
<tr>
<td>Northern Kentucky University</td>
<td>no</td>
<td>public</td>
</tr>
<tr>
<td>Pikeville College</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Southern Baptist</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Theological Seminary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spaulding University</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Thomas More College</td>
<td>yes</td>
<td>private</td>
</tr>
<tr>
<td>Transylvania University</td>
<td>no</td>
<td>private</td>
</tr>
<tr>
<td>Union College</td>
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<td>private</td>
</tr>
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</tr>
<tr>
<td>Western Kentucky University</td>
<td>no</td>
<td>public</td>
</tr>
</tbody>
</table>

$\chi^2(1, N=27)=2.05, \text{n.s.}$
Table 3 displays the diseases addressed by colleges and universities in their formal PMIR policy. The MMR (Measles, Mumps, and Rubella) group were required by eighty-two percent of those institutions requesting proof of immunization from students.

Responding schools were asked to indicate the effective year of their prematriculation policy and to list the department(s) that initiated the idea for the policy. Eleven of the twenty-seven schools had a policy in effect; two of the eleven schools listed departments that initiated the policy but did not provide an effective year (Table 4)(n=11; mean=5 years; standard deviation=2.195 years; range=2 to 11 years). The departments listed by the respondents are listed in Table 5. Six institutions listed only one department as initiating the policy, two schools listed two departments, one listed four departments, and two were missing input (Table 5)(n=11). Campus Student Health Services (n=5) were mentioned most often as the department initiating the PMIR followed by Student Life/Development (n=4).

Institutions were asked if they offered immunizations for vaccine preventable diseases at their school. Of those who responded, 33.3 percent indicated 'no' and 66.7 percent indicated 'yes' (n=27). Comparing answers among private schools, 57.89 percent offer immunization on campus
<table>
<thead>
<tr>
<th>Vaccination</th>
<th>#Private</th>
<th>#Public</th>
<th>Not Indicated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Mumps</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Rubeolla</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Tetanus</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Tuberculous</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Measles</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Rubella</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Pertussis</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Polio</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>

Note: n=11 schools had a PMIR and all eleven of these completed this question
Table 4
PMIR Policy Time Span and Departments

<table>
<thead>
<tr>
<th>Institution</th>
<th>Formal Policy</th>
<th>Estimated Years</th>
<th>Departments PMIR policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Lloyd</td>
<td>not available</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>Asbury College</td>
<td>yes</td>
<td>8 years (1989)</td>
<td>Health Services, Student Development</td>
</tr>
<tr>
<td>Asbury Theolog.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bellarmine College</td>
<td>yes</td>
<td>3 years (1993)</td>
<td>Health Services</td>
</tr>
<tr>
<td>Berea College</td>
<td>yes</td>
<td>8 years (1989)</td>
<td>College of Health Science</td>
</tr>
<tr>
<td>Brescia College</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campbellsville</td>
<td>yes</td>
<td>5 years (1992)</td>
<td>(missing) -student illness</td>
</tr>
<tr>
<td>Centre College</td>
<td>yes</td>
<td>2 years (1994)</td>
<td>Parsons Wellness Center, Student Health</td>
</tr>
<tr>
<td>Cumberland College</td>
<td>yes</td>
<td>11 years (1985)</td>
<td>Health Services</td>
</tr>
<tr>
<td>Eastern Kentucky</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgetown College</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kentucky Christn.</td>
<td>yes</td>
<td>missing date</td>
<td>missing department(s)</td>
</tr>
<tr>
<td>Kentucky State U.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lexington Thlg.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lindsey Wilson</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lou. Prsbyt Smnry.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morehead State U.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murray State U.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Ky. U.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pikeville College</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern Bpt. Thlg.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spaulding U.</td>
<td>yes</td>
<td>missing date</td>
<td>Nursing Dept.</td>
</tr>
<tr>
<td>Thomas More</td>
<td>yes</td>
<td>6 years (1991)</td>
<td>Health &amp; Counseling Ctr., Student Development</td>
</tr>
<tr>
<td>Transylvania U.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Union College</td>
<td>yes</td>
<td>6 years (1991)</td>
<td>Student Life Division</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Univ. Lou.</td>
<td>not available</td>
<td>not available</td>
<td>not available</td>
</tr>
<tr>
<td>Wstrn. Ky.</td>
<td>no</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(N=27)
<table>
<thead>
<tr>
<th>Department</th>
<th>Frequency of Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus Health Services</td>
<td>5</td>
</tr>
<tr>
<td>College of Health Sciences</td>
<td>1</td>
</tr>
<tr>
<td>Education Department</td>
<td>1</td>
</tr>
<tr>
<td>Nursing Department</td>
<td>2</td>
</tr>
<tr>
<td>Student Life/ Student Development</td>
<td>4</td>
</tr>
<tr>
<td>University Wellness Center</td>
<td>1</td>
</tr>
</tbody>
</table>
and 42.15 percent responded they do not. Of the eight responding public institutions, 100 percent offer campus-based immunization. $\chi^2 (1, \ N=27) = 5.68, p < .05.$

Those schools offering immunization were asked to indicate the diseases for which they offer inoculations. A list of these diseases and the percentage of schools offering vaccination for all institutions (divided into public and private) is located in Table 6. Of the twenty-seven responding institutions, twenty responded that they offer immunization for at least one disease. Immunization for influenza was most often listed by all schools both private and public (private n=9; public n=7). All of the public universities offered vaccination for at least one of the listed diseases, while seven private institutions indicated that they did not offer vaccinations for any of the listed diseases.

Universities were asked to mark 'yes' or 'no' as to whether a PMIR had been considered at their institution. Responses are listed in Table 7 (n=27; private: yes=50%, no=16.66%; public: yes=37.5%, no=11.11%; missing=40.74%). If the topic had been considered, to the knowledge of the respondent, schools were asked to indicate on a five point Likert scale the amount of time it had been examined. The data is listed in Table 8 (n=11). Four schools had considered it 'less than a year'; three schools '1 - 2
<table>
<thead>
<tr>
<th>vaccination</th>
<th>all</th>
<th>private</th>
<th>public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>59.3%</td>
<td>47.36%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Mumps</td>
<td>44.4</td>
<td>36.84</td>
<td>62.5</td>
</tr>
<tr>
<td>Rubeolla</td>
<td>40.7</td>
<td>15.78</td>
<td>62.5</td>
</tr>
<tr>
<td>Tetanus</td>
<td>44.4</td>
<td>36.84</td>
<td>62.5</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>29.6</td>
<td>21.05</td>
<td>50.0</td>
</tr>
<tr>
<td>Measles</td>
<td>44.4</td>
<td>36.84</td>
<td>62.5</td>
</tr>
<tr>
<td>Rubella</td>
<td>44.4</td>
<td>36.84</td>
<td>62.5</td>
</tr>
<tr>
<td>Pertussis</td>
<td>11.1</td>
<td>15.78</td>
<td>37.5</td>
</tr>
<tr>
<td>Polio</td>
<td>18.5</td>
<td>10.52</td>
<td>37.5</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>33.3</td>
<td>31.57</td>
<td>37.5</td>
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</tbody>
</table>
### Table 7

**Topic of consideration**

<table>
<thead>
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<th>Institution Type</th>
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<th>No</th>
<th>Missing Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>private</td>
<td>9</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>public</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

(n=27, private yes=50%, no=16.66%; public yes=37.5%, no=11.11%; missing=40.74%)
<table>
<thead>
<tr>
<th>time</th>
<th>private</th>
<th>public</th>
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</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1-2 years</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>3-4 years</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>5-6 years</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>7-8 years</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9-10+ years</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
years': three schools '3 - 4 years'; and one school '5 - 6 years'.

If the university did have a PMIR in effect, respondents were asked in question 7 to indicate on a five point Likert scale if they believed that it assists in the prevention of the spread of disease. Table 9 displays the responses to this question (n=10; median=4.5; mode=4).

The following is a summary of the open-ended responses given by respondents in questions 8, 9 and 10 of the survey. Question 8 of the survey asked the respondents to comment on anything which they disliked about their institution's immunization policy. As there were only a few responses given to this question, they are listed and quoted individually. Five schools indicated 'No' to this question without further response. Other responses were: 'Currently only applied to campus residents'; 'Much follow-up (is) needed for compliance because exceptions are always made by someone - admissions, etc. - and students are allowed to register without proof of immunization. Then we have to practically follow them around with a needle!'; 'It should be a pre-matriculation requirement and steps are in progress to ensure the change.'; 'No easily enforceable plan for non-compliance.'

Question 9 asked for a summary of feedback from students, parents, and faculty (both positive and negative for each). Student comments can be summarized as follows:
Table 9
Promotes Disease Prevention, By Institution Type

<table>
<thead>
<tr>
<th>response</th>
<th>private</th>
<th>public</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>disagree</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>uncertain</td>
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<td>1</td>
</tr>
<tr>
<td>agree</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>strongly agree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>no response</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

Key: 5=strongly agree, 4=agree, 3=uncertain, 2=disagree, 1=strongly disagree
Positive: "Not much response. Our focus has been on students in residence halls. Students can get more after arriving on campus."; "There has been essentially no concern on the part of the students, their parents, or anyone in the college administration. We at the Student Health Service have made a concerted effort at mass communication to raise awareness of immunization needs. Our response from students has been less than desired. We had 52 people who brought in immunization records. Thirty-four had not had 2(ND) MMR."; "Feel safer"; "Love allergy shots given here - saves them from having to go to Dr. (doctor's) office and wait."

Negative: "Hate filling out forms and get(-ting) shots! (We lock them out of registration till complete)"; "Why?"; "It's a hassle gathering information."; "Of course we receive a lot of complaints about not liking needles, etc. but I don't believe there's been and complaints to any 'higher up' authority."; "The students or parents will put dates on medical history form - and they hate to provide a record to prove this - or sometimes they will tell you they don't know and they will not try to get the information you need!"; "Dislike being forced to comply."; "The non-compliant ones are on a continuum from annoyed (to) furious when they can't preregister for courses for second semester."; "No."

Question 9: Parent responses
Positive: "Very little response.''; "Like idea/ provides protection.''; "Not really."

Negative: "Convenience/cost. We recommend visiting county health services for low cost service.''; Some do not believe such immunizations are necessary.''; "If they can't find records of immunization (they) dislike being forced to comply.''; (note: the following was also listed for the students) "The students or parents will put dates on medical history form - and they hate to provide a record to prove this - or sometimes they will tell you they don't know and they will not try to get the info(rmation) you need!''; "When their 'darlings' can't preregister I receive phone calls 'laced with rage!' I believe a pre-matriculation policy would make compliance more acceptable as they are already complying with other university prematriculation requirements!'"

Question 9: Faculty/Staff responses

Positive: "Good safety measure''; "Loves the flu shots and allergy shots given here''; 'No response."

Negative: "Don't care''; 'Registrar's office is nice about not letting students register if we block them - but in the beginning it was 'a hassle' for them.''; 'They become irate when they (advisors) are asked to assist in directing the non-compliant advisee to get to the Campus Health and Counseling Center.'"
Questions 10 and 11 of the survey addressed state laws governing the policy making of colleges and universities. Question 10 of the survey asked if state legislation requiring students to be immunized was necessary and provided space for an open-ended response explaining "why." Of the private institutions, 33.33 percent (n=6) indicated "no"—they did not think legislation was necessary to require immunization of students and 66.66 percent (n=12) marked "yes"—legislation was necessary. Among public schools, 62.50 percent (n=5) marked "no"—they did not believe legislation would be necessary and 37.5 percent (n=3) marked "yes" for this question \( \chi^2(1, N=26) = 4.98, p < .05 \). For all of the institutions combined, 42.3 percent marked "no" and 57.69 percent marked "yes." The reasons for the response given are summarized below.

"No" responses: "Most should be taken care of in high schools."; (no) "Not at this time."; (no) "Unless the state provides adequate funding for us to implement the requirement, it would be extremely difficult to enforce without additional personnel, etc."; (no) "Bureaucratic duplication, since public schools require most immunizations."; (no) "Should be covered before attending college."; (no) "Once again, we see nearly 10,000 students a year and we have only seven staff members. Therefore, to implement a mandatory policy we would need additional employees and to enforce such a policy would also require
additional personnel, computers, etc.''; (no) 'Each college should have the freedom to set specific guidelines which work best for them without government penalties for non-compliance.''

'Yes' Responses: (yes) 'Prevention of disease': (yes) 'From a public health standpoint one would like the largest # (number) of people to be immunized. I especially am concerned for the young women who may be susceptible to rubella. What bothers me is the fact that we cannot point to major epidemics for pressuring the administration.''; (yes) 'It is the only way that some schools will enforce it.''; (yes) 'Many would not have updated immunization without it. Increased risk of outbreak on campus.''; (yes) 'Would make enforcement easier. Documentation would be readily available.''; (yes) 'Schools won't do it otherwise.''; (yes) 'To add authority to enforcement for commuters.''; (yes) 'Measles outbreaks continue; can cause complications and are extremely disruptive to a college career. There are still a lot of susceptible college-age students - as evidenced by recent outbreaks' at UK, Berea, etc.''; (yes) 'It would help motivate parents to have the immunizations taken care of in advance.''; (yes) 'So we can stop spreading diseases around especially measles if they have up to date tetanus - don't have to worry about if they get hurt.''; (yes) 'Better regulation of vaccine preventable illness.''; (yes) 'It would make it easier to
give more credibility to our request. Also most large colleges don't do this - UK, UL so we have the potential for disease (measles outbreak) in KY (Kentucky)."

The final question of the survey addressed the institution itself. A Likert scale was provided for subjects to indicate whether "it would take a law to force THIS institution" to accept/implement a PMIR. Results of this question are shown in Table 10 \( \chi^2 (2, N=26) = .35 \) n.s. Twenty-six of the institutions responded; among the private colleges, the most frequent response was "disagree" (n=5). For the public colleges, the most frequent response was "strongly disagree" (n=4). Responses from all of the colleges combined exhibited that eight of the schools "strongly disagreed." four were "uncertain," and three "strongly agreed."
Table 10
Law to Force the Institution (PMIR)

<table>
<thead>
<tr>
<th>Type</th>
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<th>Disagree</th>
<th>Uncertain</th>
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<td>8</td>
<td>6</td>
<td>4</td>
<td>5</td>
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</tr>
</tbody>
</table>

$^2(2, N=26)=.35, n.s.$

Note: For this Chi Square Analysis the data were collapsed into a 2x3 table by combining strongly disagree/disagree and agree/strongly agree.
A descriptive survey of Kentucky four-year college and university prematriculation immunization policies was conducted. Subjects completed a survey developed by the researcher and reviewed by three professors at the Department of Public Health, Western Kentucky University.

Summary of Results

There were few significant differences between private and public institutions with regard to prematriculation immunization requirements. Of the responding colleges and universities, 40.74 percent have some type of formal policy regarding immunization prior to enrollment. Of the nine schools that estimated the number of years the policy had been in effect, seven had an active policy for five or more years. The groups most often cited for initiating the PMIR policy were Campus Health Services (n=5) and Student Life/Student Development (n=4).

Sixty-seven percent (n=18) offer immunization on campus while thirty-three (n=9) percent do not. Among these, all of the public institutions (n=8) and fifty-eight percent (n=10) of private schools offered some type of immunization on campus. Sixty-seven percent (n=18) of the total number
of respondents offered immunization for at least one disease listed on the survey; thirty-three percent (n=9) did not.

When asked if a PMIR policy had been a topic of consideration, forty-one percent (n=11) did not respond. Among public institutions that responded, fifty percent (n=3) had considered this and thirty-eight percent (n=9) of private schools had done so.

When asked how recently this topic had been addressed, forty-one percent (n=11) responded. Of the eleven, ten had considered this policy in the past four years.

Those surveyed were asked if they believed a PMIR policy assisted in the prevention of disease. Of the choices provided, five of the ten respondents answered "agree."

When asked if legislation was necessary requiring schools to ask students to provide proof of immunization, no significant difference between private and public schools was found. Fifty-eight percent (n=15) of the respondents answered "yes" and forty-two percent (n=11) answered "yes."

Discussion

Postsecondary institutions in Kentucky were selected for this survey due to reports of measles outbreaks at Berea College and Eastern Kentucky University. All twenty-nine Kentucky colleges were asked to participate. Of these, ninety-three percent responded (n=27). Telephone calls to the remaining two institutions yielded no response. Even
though the survey was directly mailed to the Office of the President at each respective school, it should not be concluded that the President answered the survey.

Attempts to find an existing, valid survey addressing issues related to this topic yielded no results. One possible problem with this study was that the respondents may not have been totally aware of the history of the PMIR topic at their institution. It was impossible to determine if the person who responded was the most appropriate to return the survey. It was assumed that by addressing the survey to the Office of the President, it would be forwarded to the department or person who possessed knowledge of this topic and could, therefore, provide the most accurate responses to the survey questions.

Another problem encountered during this investigation was missing responses. The survey was designed to allow the respondents to skip questions that did not apply to their school, given their response to a previous question. In spite of missing responses in some areas, respondents continued through the survey to answer later questions. It was assumed that the reasons for the missing answers were: the respondent did not understand the question, did not know the answer, was uncertain of the answer or did not wish to reply.

Another potential issue with the chi square analyses was the relatively small size ($n \leq 27$) of the study sample.
This limited number led to small cell frequencies and contributed to low statistical power.

**Limitations**

The primary limitation of this study was the survey respondents; accurate information could only be gathered from persons aware of the institution’s history and policies governing student immunization. Since the survey did not ask for the respondent to reveal their name or position at the college or university, it is impossible to discern the accuracy of the information provided by each respondent.

This study was exclusive to Kentucky postsecondary institutions. The results cannot be assigned or generalized to other institutions in other states, nor are they reflective of other Kentucky state institutions.

**Conclusions**

Within the framework of this investigation and its conditions, 40.74 percent of the institutions had some type of formal policy governing prematriculation immunization requirements for at least one disease listed on the survey. The departments most often responsible for initiating immunization requirements were Campus Health Services and Student Life/Student Development.

When asked if immunization was offered on campus, one hundred percent of the responding public institutions offered campus-based immunization. Among the private colleges, 57.89 percent offered campus-based immunization. In the case of both private and public institutions,
inoculation for influenza was most often available at campus-based sites.

All schools having a PMIR policy required at least one of the listed diseases. The most frequent diseases for which vaccinations were offered included the following: Influenza (59.3%), Mumps (44.4%), Tetanus (44.4%), Measles (44.4%), Rubella (44.4%), and Rubeolla (40.7%).

When asked if a PMIR had been a topic of consideration, 40.74 percent did not respond. Of those who did reply, seventy-five percent of the private schools (n=12) and seventy-five percent of the public schools (n=4) had considered implementing a PMIR policy.

Respondents were asked if they held the idea that their institution's PMIR promotes disease prevention. Asked to respond to a five point Likert scale, 62.9 percent did not respond, 3.7 percent strongly disagreed/disagreed, 7.4 percent were uncertain and 25.9 percent agreed/strongly agreed.

Three open-ended responses afforded subjects an opportunity to present their attitudes on their institution's PMIR policy. When those who completed the survey were asked if there was anything that 'they' disliked about their school’s PMIR policy, five responded "No." Other comments addressed limits to the policy such as inconsistent compliance and exceptions to their policy. Comments listed were "Currently only applied to campus residents": "Much follow-up (is) needed for compliance
because of exceptions are always made by someone - admissions, etc. - and students are allowed to register without proof of immunization. Then we have to practically follow them around with a needle!''; ''It should be a pre-matriculation requirement and steps are in progress to ensure the change.''; and ''No easily enforceable plan for non-compliance.''

A summary of feedback from students, parents, and faculty (both positive and negative for each) was requested on the survey. The following is a summary of those responses. Positive student comments reported by the institutions focused on feelings of security and appreciation of the ease/efficiency of receiving inoculations on campus. Negative student responses focused on the dislike of receiving shots, the amount of time consumed by filling out forms, confusion as to the need for such information/need for vaccination, the hassles of gathering information, and some were angry when they were locked out of registration because they did not provide the information requested by the school.

Parents were reported to like the idea that their children were protected. Negative reactions from parents included complaints of cost/convenience, lack of understanding/knowledge about immunization, dislike having to find records of their child's immunization history, dislike being forced into compliance, and expressed anger when their child was blocked from registration.
The faculty/staff responses to PMIR policies were equally mixed. On the positive side, they were reported to like having the availability of allergy and flu shots and felt 'safer.' Negative comments from the staff included initial complaints from the registrar's office on blocked student registration, complaints from advisors when given the task of sending their advisees to the campus health service, and concerns about staffing and costs related to student vaccination drives.

Schools were asked if they believed state legislation requiring college students to be immunized is necessary. A significant difference between private and public school responses was found. Among private schools, 66.66 percent responded 'yes' and 33.33 percent marked 'no.' Public schools responded 37.5 percent 'yes' and 62.5 percent 'no.'

The final survey question addressed the idea that it would take legislation to 'force' the responding institution to implement a PMIR policy. On a five-point Likert scale, schools were asked to respond. No significant differences were found among private and public schools on their opinions in this question.

**Implications**

1. Most colleges and universities in Kentucky do not have comprehensive PMIR policies.
2. There does not appear to be an identifiable and consistent administrative office across all schools in charge of PMIR policies and decisions.

3. Attitudes of students, parents and faculty/staff are mixed and thus will probably not provide the impetus for notable reform of PMIR policies in the near future.

4. Although many colleges and universities offer immunization on campus, a thorough analysis of costs (staffing, computer systems for records, time, etc.) as related to an PMIR policy would be necessary before implementation.

**Recommendations**

1. Future research should attempt to gauge the status of prematriculation immunization policies among Kentucky state postsecondary institutions from an epidemiological/public health perspective.

2. Future research should explore in greater detail the reason(s) affecting the institutional decision to implement or abandon a prematriculation immunization requirement.

3. Future research should investigate the attitudes of students, parents, and faculty/staff toward vaccination programs.

4. Replication of a survey type PMIR study should include attempts to interview in person a representative from institutions that did not respond to the mailed survey.
5. As a topic of consideration/interest to Kentucky postsecondary institutions, the PMIR policy concept was of great interest based on the high rate of surveys returned. This could be an indication that Kentucky colleges and universities would benefit from additional research on vaccine preventable diseases among college students and information gathered from other states with regard to PMIR policies.
Debbie Foushee  
Western Kentucky University  
Department of Public Health  
Prematriculation Immunization Requirement Survey

Please respond to the following:

1. This institution has a prematriculation immunization requirement.  
   ____ YES  ____ NO

2. If YES, please indicate which of the following diseases are addressed by this policy:
   ____ INFLUENZA  ____ MEASLES  
   ____ MUMPS  ____ RUBELLA  
   ____ RUBEOLLA  ____ PERTUSSIS (Whooping Cough)  
   ____ TETANUS  ____ POLIO  
   ____ TUBERCULOSIS  ____ DIPTHERIA

3. If YES, what year was this policy implemented? ____  
   What department(s) or group(s) initiated the idea? Please list these departments:
   1.  
   2.  
   3.  
   4.  

4. This institution offers immunization against vaccine preventable illnesses to students.  
   ____ YES  ____ NO

5. If YES, please indicate which of the following diseases are addressed by this policy:
   ____ INFLUENZA  ____ MEASLES  
   ____ MUMPS  ____ RUBELLA  
   ____ RUBEOLLA  ____ PERTUSSIS (Whooping Cough)  
   ____ TETANUS  ____ POLIO  
   ____ TUBERCULOSIS  ____ DIPTHERIA

6. If no such proof of immunization policy exists, has it ever been a topic of consideration?  
   ____ YES  ____ NO

   If a policy has been a topic of consideration, how recently?
   ____ less than 1 year  ____ 5-6 years  
   ____ 1-2 years  ____ 7-8 years  
   ____ 3-4 years  ____ 9-10+ years
If YES, a policy exists, please answer the following:
If NO, please skip to question 10.

7. In your opinion, has this policy been of benefit in the prevention of the spread of disease?

1 strongly disagree 2 disagree 3 uncertain 4 agree 5 strongly agree

8. Is there anything that you dislike about your institution's immunization requirement?

9. Has your institution received any positive or negative feedback concerning immunization requirements from students, parents or faculty/staff? Please provide some examples.

STUDENTS:
positive: 

negative: 

PARENTS:
positive: 

negative: 

10. Do you believe that state legislation requiring immunization of college students is necessary?

____ YES ______ NO

For what reason(s): 

11. It would take a law to force THIS institution to implement a prematriculation immunization requirement:

1 2 3 4 5
strongly disagree disagree uncertain agree strongly agree
Appendix B

AN ACT CONCERNING PROOF OF IMMUNIZATION AGAINST VACCINE PREVENTABLE DISEASES FOR PERSONS ATTENDING POSTSECONDARY INSTITUTIONS
VERSION A
CERTIFICATE OF IMMUNIZATION
ANNUAL SUMMARY REPORT
AMERICAN COLLEGE HEALTH ASSOCIATION
AN ACT CONCERNING PROOF OF IMMUNIZATION AGAINST
VACCINE-PREVENTABLE DISEASES
FOR PERSONS ATTENDING POST-SECONDARY INSTITUTIONS

WHEREAS, the incidence of measles, mumps, and rubella has been found to be increasing, and preventable outbreaks of these and other vaccine-preventable diseases continue to occur in persons aged 15-24 and older; and

WHEREAS, prematriculation immunization requirements for entry into primary and secondary educational institutions have resulted in a marked decrease in preventable disease outbreaks in school-age children; and

WHEREAS, requirements mandating proof of vaccination or immunity upon enlistment in the United States Armed Forces have resulted in a marked decrease in preventable disease outbreaks in adult military recruit populations; and

WHEREAS, prematriculation immunization requirements for entry into post-secondary institutions have been recommended by major health care and public health organizations, including the Immunization Practices Advisory Committee of the United States Public Health Service; and
WHEREAS, voluntary implementation of these recommendations for prematriculation immunization requirements for post-secondary institutions, by either individual school policy, Board of Regents policy, or state law, has not been occurring on a widespread scale, and;

WHEREAS, the health, safety, and well-being of the citizens of this state would be best served by a requirement that all post-secondary educational institutions located in this state condition enrollment on the presentation of evidence of proper immunization or immunity,

BE IT ENACTED BY THE HOUSE OF REPRESENTATIVES AND THE SENATE OF THIS STATE:

SECTION 1.0 PURPOSE

The purpose of this Act is to establish a prematriculation immunization/immunity requirement to prevent the spread of vaccine-preventable diseases among students and the secondary spread of such diseases into the surrounding community. This shall be accomplished by the establishment of a system to require immunization or evidence of immunity by all students against vaccine-preventable diseases, and to establish a continuing system for monitoring immunity levels among the student population.

SECTION 2.0 DEFINITIONS

The following definitions shall apply to this Act and the regulations promulgated to implement this Act.
(A) "Act" means this Act which shall be known as the Post-Secondary Institutional Prematriculation Immunization Act of 1992.

(B) "Certificate of immunity" means a form acceptable to a post-secondary institution which establishes the certificate holder's immunity by virtue of having met alternate criteria other than having received an immunization, as defined for each of the specified diseases as applicable, and which is signed by a health care provider who acknowledges that he/she has examined the medical records and medical history of the certificate holder. The content of such certificate shall include, as a minimum, the basic elements listed in Appendix A.

(C) "Certificate of immunization" means a form acceptable to a post-secondary institution signed by a health care provider who has administered an immunizing agent to the certificate holder (or has reviewed health records evidencing such administration), specifying the vaccine administered and the date (including month and year) of administration. The content of such certificate shall include, as a minimum, the basic elements listed in Appendix A.

(D) "Department" means the State Department of Public Health.

(E) "Designated record-keeping office" means the office designated by a post-secondary institution as responsible
for maintaining student immunization records. In institutions with student health services, that office shall be the designated office of record.

(F) "Documentation of exemption" means the documentation in a form acceptable to the post-secondary institution which indicates the circumstances which entitle the individual to an exemption from the requirements of this Act under the exemption standards set forth in Section 4.0.

(G) "Enroll" means the student is a bona fide member of the post-secondary institution's student body receiving academic credit for on-campus instruction.

(H) "Health care provider" means a person authorized by the state Medical Practices Act to administer vaccines, such as a physician (M.D. or D.O.), physician assistant, or nurse.

(I) "Post-secondary institution" or "institution" means a public or private college, university, or other institution providing education, degrees, or certificates, above the high school level. This shall include, but not be limited to, any public and private college and university now or hereafter established, any public or private junior or community college, and any public or private business or vocational institution operated in this state. This term shall not include educational institutions that offer degrees and instruction exclusively through correspondence courses.
(J) "Student" means any person who attends, on either a full-time or part-time basis, or is enrolled in a post-secondary institution, or who is a candidate for a degree, diploma, or certificate from a post-secondary institution. This term does not include persons who enroll in correspondence programs and who, as a result, do not physically attend classes at or live on the institution’s campus.

SECTION 3.0 REQUIREMENTS FOR ATTENDANCE AT A POST-SECONDARY INSTITUTION

No post-secondary institution shall permit any student to enroll in such institution or to attend classes or to reside on the campus of such institution unless the student has furnished, and the institution’s designated record-keeping office has on file, one of the following:

A) A certificate of immunization which shows that the student

1) For measles, either:

(a) has received two doses of live measles virus vaccine, the first dose administered on or after the age of 12 months and the second dose administered more than 30 days after the first dose; or

(b) has received two doses of the MMR vaccine, the first dose administered on or after the age of
12 months and the second dose administered more than 30 days after the first dose; or
(c) has documentation of having been diagnosed by a physician as having had measles disease; or
(d) has demonstrated serological evidence of measles antibodies; or
(e) was born on or before December 31, 1956; and

2) For mumps, either:
(a) has received at least one dose of live mumps virus vaccine administered on or after the age of 12 months; or
(b) has documentation of having been diagnosed by a physician as having had mumps disease; or
(c) has demonstrated serological evidence of mumps antibodies; or
(d) was born on or before December 31, 1956; and

3) For rubella, either:
(a) has received at least one dose of live rubella virus vaccine administered on or after the age of 12 months; or
(b) has demonstrated serological evidence of rubella antibodies; and

4) For diphtheria and tetanus, has received any combination of three or more doses of either diphtheria and tetanus (pediatric DT) and/or tetanus and diphtheria (adult Td) vaccine, with the
most recent dose having been received within 10 years prior to enrollment and with a minimum time interval between the first and second dose of at least four weeks, with the third dose having been received at least six months after the second or last dose of the basic series; or

B) Documentation of exemption in accordance with the exemption standards set forth in Section 4.0 of this Act.

SECTION 4.0  EXEMPTIONS; DOCUMENTATION OF EXEMPTION REQUIRED

Documentation of exemption relieving the student from the requirements of Section 3.0 (A) may be accepted by the institution for medical reasons.

A) A student may be exempted from one or more of the specific immunization requirements specified in Section 3.0 upon acceptance by the designated record-keeping office of a written statement by a health care provider indicating the nature and probable duration of the medical condition or circumstances that contraindicates such immunization(s), identifying the specific vaccine(s) which could be detrimental to the student's health.

B) Female students may be granted temporary exemption from immunization against measles, mumps, and rubella if pregnancy or suspected pregnancy is certified by a written statement from a health care provider.

C) If student is on an approved schedule of receipt of all necessary doses of measles vaccine and tetanus and
diphtheria toxoids, the student will be granted temporary medical exemption for the duration of the approved schedule.

D) If a student's medical condition or circumstance later permit immunization, the exemption(s) granted under subsections (A), (B) or (C) above shall thereupon terminate and the student shall be required to obtain the immunization(s) from which the student has been exempted.

SECTION 5.0 ENFORCEMENT

A) Upon the commencement of the first academic period (i.e., semester, trimester, quarter, grading period, etc.) of the academic year, but no later than the academic period next following the first academic period of the academic year, the institution shall comply with the provisions of Section 3.0 with respect to all entering students enrolled at the institution.

In the event that a student enrolls at an institution for the first academic period of the academic year, and is unable to provide either a certificate of immunization or immunity or documentation of exemption where appropriate, the post-secondary institution shall:

1) notify the student of the necessity to be immunized, that such immunizations may be administered by a health care provider; and

2) notify the student that immunization is required for continued enrollment, attendance, and residence at the institution unless the student provides the
appropriate documentation as set forth in either
Section 3.0 or Section 4.0.

B) In the event the student fails to comply with the
documentation requirements of either Section 3.0 or Section 4.0 (as
appropriate) upon the commencement of the second academic period of
the academic year, the institution shall exclude the student from
enrollment and attendance at the institution and residence on the
institution's campus, where applicable, until the required
certification of immunization or immunity, or documentation of
exemption, is provided.

C) The post-secondary institution shall keep a listing of
the students who have filed documentation of exemption, and develop
necessary plans for excluding these students from school for their
protection, should an outbreak occur of one of the vaccine-
preventable diseases that are stipulated in the regulations
promulgated under this Act.

SECTION 6.0 IMMUNITY FROM LIABILITY

Nothing in this Act may be construed as to impose liability
upon the State, the State Department of Public Health, the post-
secondary institution, or any officer of the post-secondary
institution for damages resulting from immunization of any student,
or the lack of immunization of any student, as required by this
Act. In no event shall state law limit any immunities or
compensation available under any federal statute or regulation.
This Section 6.0 shall not apply to any fines or sanctions levied
against an institution and/or any officer of such institution for
failure to comply with the provisions of this Act as promulgated by the Commissioner under the statutory authority granted in Section 9.0 of this Act.

SECTION 7.0 RECORDS

A) The designated record-keeping office shall maintain records containing the required elements of the immunization status of each student. The required elements shall be in accordance with those indicated on the certificate of immunity. The content of such certificate shall include, as a minimum, the basic elements listed in Appendix A. The student immunization records shall be maintained by the post-secondary institution.

B) If an exemption has been granted for medical reasons, or if laboratory evidence of immunity has been submitted, a copy of the request for exemption or the laboratory report must be kept with the student immunization record. If immunity against measles and mumps is met by fulfilling the birthdate criteria, documentation of date of birth must be kept with the student immunization record.

C) A post-secondary institution shall keep confidential susceptibility lists by disease category indicating the names of all students who have not provided proof of immunity. Such lists shall be disclosed to the Department in health and safety emergencies in accordance with the provisions of the laws of this state governing such disclosures.
SECTION 8.0  COMPLETION AND SUBMISSION OF THE SUMMARY REPORT

A) Each post-secondary institution shall prepare an annual summary report for the Department before or upon commencement of the second academic period of the academic year which indicates the immunization status for the entire group of entering students. The content of such annual summary report shall include, as a minimum, the basic elements listed in Appendix B.

B) The annual summary report shall be signed by an official of the designated record-keeping office certifying that the information provided is correct.

C) In order to determine compliance with this Section, the Department, or its designated representative, may audit student immunization records, from which personal identifiable information has been deleted, in accordance with the requirements of the privacy laws of this state.

SECTION 9.0  AUTHORITY TO DEPARTMENT OF PUBLIC HEALTH

The Commissioner of the Department of Public Health may adopt and amend rules and regulations to effectuate the provisions and purposes of this Act. Such regulations shall be made available for public comment within 90 days of enactment of this Act. The Commissioner shall report annually to the governor and the legislature concerning the immunization of all post-secondary students pursuant to this Act. The commissioner may promulgate rules or regulations governing the assessment of a fine or sanctions against institutions and/or any officer thereof for violation or failure to comply with any provision of this Act. The Commissioner may, by
regulation, expand or modify the list of required immunizations or the standards for being issued a certificate of immunization or immunity as medical information becomes available which would warrant such expansion or modification in the interest of public health.

Appendix A: Certificate of Immunization

Appendix B: Annual Summary Report

April 1992
**CERTIFICATE OF IMMUNIZATION**

Immunity is required prior to registration. Please complete and return this form.

### PART I — TO BE COMPLETED BY STUDENT

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<td>[ ] Graduate</td>
<td>[ ] Undergraduate</td>
<td>Date of Enrollment</td>
</tr>
</tbody>
</table>

### PART II — TO BE COMPLETED AND SIGNED BY A HEALTH CARE PROVIDER (Dates must include month and year):

**A. M.M.R. (Measles, Mumps, Rubella)** — If MMR not given, skip to B (2 vaccinations required)

- [ ] Dose 1 given between 12 months and 5 years
- [ ] Dose 2 given at 5 years of age or later

**B. Measles (Rubeola)** — (if given instead of MMR)

- [ ] Dose 1 given between 12 months and 5 years (Given in 1968 or later)
- [ ] Dose 2 given at 5 years of age or later
- [ ] Born before 1957 and therefore considered immune.
- [ ] Has report of positive immune titer. Date of titer (Attach copy of titer results)
- [ ] Had disease; confirmed by office record

**C. Mumps** — (if given instead of MMR)

- [ ] Vaccine at 12 months of age or later
- [ ] Born before 1957 and therefore considered immune.
- [ ] Has report of positive immune titer. Date of titer (Attach copy of titer results)
- [ ] Had disease; confirmed by office record

**D. Rubella** — (if given instead of MMR)

- A clinical diagnosis of rubella is not acceptable proof of immunity.
- [ ] Vaccine at 12 months of age or later
- [ ] Has report of positive immune titer. Date of titer (Attach copy of titer results)

**E. Tetanus-Diphtheria**

- [ ] Completed primary series of tetanus-diphtheria
- [ ] Tetanus-diphtheria booster (Must be within last ten years)

Verification: MUST BE VERIFIED BY PHYSICIAN'S SIGNATURE, HEALTH DEPT. STAMP OR COPY OF SCHOOL OR COLLEGE RECORD GIVING DATES OF IMMUNIZATIONS.

<table>
<thead>
<tr>
<th>Name</th>
<th>[ ] Physician</th>
<th>[ ] Public Health Nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
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</tr>
<tr>
<td>Phone ( )</td>
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<td></td>
</tr>
<tr>
<td>Signature</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Student Health Reviewer:</td>
<td>Date:</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

AN ACT CONCERNING PROOF OF IMMUNIZATION AGAINST VACCINE PREVENTABLE DISEASES FOR PERSONS ATTENDING POSTSECONDARY INSTITUTIONS

VERSION R

CERTIFICATE OF IMMUNIZATION

ANNUAL SUMMARY REPORT

AMERICAN COLLEGE HEALTH ASSOCIATION
AN ACT CONCERNING PROOF OF IMMUNIZATION AGAINST
VACCINE-PREVENTABLE DISEASES
FOR PERSONS ATTENDING POST-SECONDARY INSTITUTIONS

WHEREAS, the incidence of measles, mumps, and rubella has been found to be increasing, and preventable outbreaks of these and other vaccine-preventable diseases continue to occur in persons aged 15-24 and older; and

WHEREAS, prematriculation immunization requirements for entry into primary and secondary educational institutions have resulted in a marked decrease in preventable disease outbreaks in school-age children; and

WHEREAS, requirements mandating proof of vaccination or immunity upon enlistment in the United States Armed Forces have resulted in a marked decrease in preventable disease outbreaks in adult military recruit populations; and

WHEREAS, prematriculation immunization requirements for entry into post-secondary institutions have been recommended by major health care and public health organizations, including the Immunization Practices Advisory Committee of the United States Public Health Service; and
WHEREAS, voluntary implementation of these recommendations for prematriculation immunization requirements for post-secondary institutions, by either individual school policy, Board of Regents policy, or state law, has not been occurring on a widespread scale, and;

WHEREAS, the health, safety, and well-being of the citizens of this state would be best served by a requirement that all post-secondary educational institutions located in this state condition enrollment on the presentation of evidence of proper immunization or immunity,

BE IT ENACTED BY THE HOUSE OF REPRESENTATIVES AND THE SENATE OF THIS STATE:

SECTION 1.0 PURPOSE

The purpose of this Act is to establish a prematriculation immunization/immunity requirement to prevent the spread of vaccine-preventable diseases among students and the secondary spread of such diseases into the surrounding community. This shall be accomplished by the establishment of a system to require immunization or evidence of immunity by all students against vaccine-preventable diseases, and to establish a continuing system for monitoring immunity levels among the student population.

SECTION 2.0 DEFINITIONS

The following definitions shall apply to this Act and the regulations promulgated to implement this Act.
(A) "Act" means this Act which shall be known as the Post-Secondary Institutional Prematriculation Immunization Act of 1992.

(B) "Certificate of immunity" means a form acceptable to a post-secondary institution which establishes the certificate holder's immunity by virtue of having met alternate criteria other than having received an immunization, as defined for each of the specified diseases as applicable, and which is signed by a health care provider who acknowledges that he/she has examined the medical records and medical history of the certificate holder. The content of such certificate shall include, as a minimum, the basic elements listed in Appendix A.

(C) "Certificate of immunization" means a form acceptable to a post-secondary institution signed by a health care provider who has administered an immunizing agent to the certificate holder (or has reviewed health records evidencing such administration), specifying the vaccine administered and the date (including month and year) of administration. The content of such certificate shall include, as a minimum, the basic elements listed in Appendix A.

(D) "Department" means the State Department of Public Health.

(E) "Designated record-keeping office" means the office designated by a post-secondary institution as responsible
for maintaining student immunization records. In institutions with student health services, that office shall be the designated office of record.

(F) "Documentation of exemption" means the documentation in a form acceptable to the post-secondary institution which indicates the circumstances which entitle the individual to an exemption from the requirements of this Act under the exemption standards set forth in Section 4.0.

(G) "Enroll" means the student is a bona fide member of the post-secondary institution's student body receiving academic credit for on-campus instruction.

(H) "Health care provider" means a person authorized by the state Medical Practices Act to administer vaccines, such as a physician (M.D. or D.O.), physician assistant, or nurse.

(I) "Post-secondary institution" or "institution" means a public or private college, university, or other institution providing education, degrees, or certificates, above the high school level. This shall include, but not be limited to, any public and private college and university now or hereafter established, any public or private junior or community college, and any public or private business or vocational institution operated in this state. This term shall not include educational institutions that offer degrees and instruction exclusively through correspondence courses.
(J) "Student" means any person who attends, on either a full-time or part-time basis, or is enrolled in a post-secondary institution, or who is a candidate for a degree, diploma, or certificate from a post-secondary institution. This term does not include persons who enroll in correspondence programs and who, as a result, do not physically attend classes at or live on the institution's campus.

SECTION 3.0 REQUIREMENTS FOR ATTENDANCE AT A POST-SECONDARY INSTITUTION

No post-secondary institution shall permit any student to enroll in such institution or to attend classes or to reside on the campus of such institution unless the student has furnished, and the institution's designated record-keeping office has on file, one of the following:

A) A certificate of immunization which shows that the student
   1) For measles, either:
      (a) has received two doses of live measles virus vaccine, the first dose administered on or after the age of 12 months and the second dose administered more than 30 days after the first dose; or
      (b) has received two doses of the MMR vaccine, the first dose administered on or after the age of
12 months and the second dose administered more than 30 days after the first dose; or

(c) has documentation of having been diagnosed by a physician as having had measles disease; or

(d) has demonstrated serological evidence of measles antibodies; or

(e) was born on or before December 31, 1956; and

2) For mumps, either:

(a) has received at least one dose of live mumps virus vaccine administered on or after the age of 12 months; or

(b) has documentation of having been diagnosed by a physician as having had mumps disease; or

(c) has demonstrated serological evidence of mumps antibodies; or

(d) was born on or before December 31, 1956; and

3) For rubella, either:

(a) has received at least one dose of live rubella virus vaccine administered on or after the age of 12 months; or

(b) has demonstrated serological evidence of rubella antibodies; and

4) For diphtheria and tetanus, has received any combination of three or more doses of either diphtheria and tetanus (pediatric DT) and/or tetanus and diphtheria (adult Td) vaccine, with the
most recent dose having been received within 10 years prior to enrollment and with a minimum time interval between the first and second dose of at least four weeks, with the third dose having been received at least six months after the second or last dose of the basic series; or

B) Documentation of exemption in accordance with the exemption standards set forth in Section 4.0 of this Act.

SECTION 4.0  EXEMPTIONS; DOCUMENTATION OF EXEMPTION REQUIRED

Documentation of exemption relieving the student from the requirements of Section 3.0(A) may be accepted by the institution for medical or religious reasons.

A) Medical Exemption

1) A student may be exempted from one or more of the specific immunization requirements specified in Section 3.0 upon acceptance by the designated record keeping office of a written statement by a health care provider indicating the nature and probable duration of the medical condition or circumstances that contraindicates such immunization(s), identifying the specific vaccine(s) which could be detrimental to the student’s health.

2) Female students may be granted temporary exemption from immunization against measles, mumps, and
rubella if pregnancy or suspected pregnancy is
certified by a written statement from a health care
provider.

3) If student is on an approved schedule of receipt of
all necessary doses of measles vaccine and tetanus
and diphtheria toxoids, the student will be granted
temporary medical exemption for the duration of the
approved schedule.

4) If a student’s medical condition or circumstance
later permit immunization, the exemption(s) granted
under subsections (1), (2) or (3) above shall
thereupon terminate and the student shall be
required to obtain the immunization(s) from which
the student has been exempted.

B) Religious Exemption

A student may be exempted from the immunization require-
ments specified in Section 3.0 upon acceptance by the
designated record keeping office of a written statement
by the student (or the student’s parent or guardian, if
the student is a minor) detailing the student’s objection
to immunization on the ground that they conflict with the
tenet and practices of a recognized church or religious
organization, of which the student is an adherent or
member. In the event a student claims a religious
exemption, the institution may require supporting
documentation.
SECTION 5.0  ENFORCEMENT

A) Upon the commencement of the first academic period (i.e., semester, trimester, quarter, grading period, etc.) of the academic year, but no later than the academic period next following the first academic period of the academic year, the institution shall comply with the provisions of Section 3.0 with respect to all entering students enrolled at the institution.

In the event that a student enrolls at an institution for the first academic period of the academic year, and is unable to provide either a certificate of immunization or immunity or documentation of exemption where appropriate, the post-secondary institution shall:

1) notify the student of the necessity to be immunized, that such immunizations may be administered by a health care provider; and

2) notify the student that immunization is required for continued enrollment, attendance, and residence at the institution unless the student provides the appropriate documentation as set forth in either Section 3.0 or Section 4.0.

B) In the event the student fails to comply with the documentation requirements of either Section 3.0 or Section 4.0 (as appropriate) upon the commencement of the second academic period of the academic year, the institution shall exclude the student from enrollment and attendance at the institution and residence on the institution’s campus, where applicable, until the required
certification of immunization or immunity, or documentation of exemption, is provided.

C) The post-secondary institution shall keep a listing of the students who have filed documentation of exemption, and develop necessary plans for excluding these students from school for their protection, should an outbreak occur of one of the vaccine-preventable diseases that are stipulated in the regulations promulgated under this Act.

SECTION 6.0 IMMUNITY FROM LIABILITY

Nothing in this Act may be construed as to impose liability upon the State, the State Department of Public Health, the post-secondary institution, or any officer of the post-secondary institution for damages resulting from immunization of any student, or the lack of immunization of any student, as required by this Act. In no event shall state law limit any immunities or compensation available under any federal statute or regulation. This Section 6.0 shall not apply to any fines or sanctions levied against an institution and/or any officer of such institution for failure to comply with the provisions of this Act as promulgated by the Commissioner under the statutory authority granted in Section 9.0 of this Act.

SECTION 7.0 RECORDS

A) The designated record-keeping office shall maintain records containing the required elements of the immunization status of each student. The required elements shall be in accordance with
those indicated on the certificate of immunity. The content of such certificate shall include, as a minimum, the basic elements listed in Appendix A. The student immunization records shall be maintained by the post-secondary institution.

B) If an exemption has been granted for medical or religious reasons, or if laboratory evidence of immunity has been submitted, a copy of the request for exemption or the laboratory report must be kept with the student immunization record. If immunity against measles and mumps is met by fulfilling the birthdate criteria, documentation of date of birth must be kept with the student immunization record.

C) A post-secondary institution shall keep confidential susceptibility lists by disease category indicating the names of all students who have not provided proof of immunity. Such lists shall be disclosed to the Department in health and safety emergencies in accordance with the provisions of the laws of this state governing such disclosures.

SECTION 8.0 COMPLETION AND SUBMISSION OF THE SUMMARY REPORT

A) Each post-secondary institution shall prepare an annual summary report for the Department before or upon commencement of the second academic period of the academic year which indicates the immunization status for the entire group of entering students. The content of such annual summary report shall include, as a minimum, the basic elements listed in Appendix B.

B) The annual summary report shall be signed by an official of the designated record-keeping office certifying that the
information provided is correct.

C) In order to determine compliance with this Section, the Department, or its designated representative, may audit student immunization records, from which personal identifiable information has been deleted, in accordance with the requirements of the privacy laws of this state.

SECTION 9.0  AUTHORITY TO DEPARTMENT OF PUBLIC HEALTH

The Commissioner of the Department of Public Health may adopt and amend rules and regulations to effectuate the provisions and purposes of this Act. Such regulations shall be made available for public comment within 90 days of enactment of this Act. The Commissioner shall report annually to the governor and the legislature concerning the immunization of all post-secondary students pursuant to this Act. The commissioner may promulgate rules or regulations governing the assessment of a fine or sanctions against institutions and/or any officer thereof for violation or failure to comply with any provision of this Act. The Commissioner may, by regulation, expand or modify the list of required immunizations or the standards for being issued a certificate of immunization or immunity as medical information becomes available which would warrant such expansion or modification in the interest of public health.

Appendix A: Certificate of Immunization
Appendix B: Annual Summary Report

April 1992
# CERTIFICATE OF IMMUNIZATION

Imunity is required prior to registration. Please complete and return this form.

**PART I—TO BE COMPLETED BY STUDENT:**

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Last</td>
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<tr>
<td>First</td>
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<tr>
<td>M.I.</td>
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<tr>
<td>Date of Birth</td>
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<tr>
<td>Social Security #</td>
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<tr>
<td>State</td>
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</tr>
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<td>Zip Code</td>
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Check School Entering: ☐ Graduate ☐ Undergraduate Date of Enrollment

- **A. M.M.R. (Measles, Mumps, Rubella)** — If MMR not given, skip to B (2 vaccinations required)
  - Dose 1 given between 12 months and 5 years
  - Dose 2 given at 5 years of age or later
- **B. Measles (Rubella)** — (If given instead of MMR)
  - Dose 1 given between 12 months and 5 years (Given in 1968 or later)
  - Dose 2 given at 5 years of age or later
  - Born before 1957 and therefore considered immune.
  - Has report of positive immune titer. Date of titer (Attach copy of titer results)
  - Had disease; confirmed by office record
- **C. Mumps** — (If given instead of MMR)
  - Vaccine at 12 months of age or later
  - Born before 1957 and therefore considered immune.
  - Has report of positive immune titer. Date of titer (Attach copy of titer results)
  - Had disease; confirmed by office record
- **D. Rubella** — (If given instead of MMR)
  - A clinical diagnosis of rubella is not acceptable proof of immunity.
  - Vaccine at 12 months of age or later
  - Has report of positive immune titer. Date of titer (Attach copy of titer results)
- **E. Tetanus-Diphtheria**
  - Completed primary series of tetanus-diphtheria
  - Tetanus-diphtheria booster (Must be within last ten years)

Verification: MUST BE VERIFIED BY PHYSICIAN'S SIGNATURE, HEALTH DEPT. STAMP OR COPY OF SCHOOL OR COLLEGE RECORD GIVING DATES OF IMMUNIZATIONS.

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Address</td>
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<tr>
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<td>Phone</td>
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<td>Signature</td>
<td></td>
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Student Health Reviewer: Date: Date:
## PART I - IMMUNIZATION STATUS OF ENTERING STUDENTS BY DISEASE CATEGORY

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<thead>
<tr>
<th>IMMUNIZATION STATUS</th>
<th>MEASLES</th>
<th>MUMPS</th>
<th>RUBELLA</th>
<th>TETANUS–DIPHTHERIA</th>
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</thead>
<tbody>
<tr>
<td>A. Total number of entering students protected and in compliance with immunization</td>
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<tr>
<td>requirements, by having a completed certificate of immunization/immunity (Section</td>
<td></td>
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<td></td>
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<tr>
<td>3.0)</td>
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</tr>
<tr>
<td>B. Total number of entering students unprotected but in compliance with immunization</td>
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<tr>
<td>requirements, by having a completed documentation of exemption (Section 4.0)</td>
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<td>(Total of 1, 2 and 3 below)</td>
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</tr>
<tr>
<td>1. On an approved schedule from physician/clinic for completion of required doses</td>
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<td>2. Documentation of medical contraindication</td>
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<td>3. Documentation of religious exemption</td>
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<tr>
<td>C. Total number of entering students not in compliance with immunization requirements</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>by having neither a completed certificate of immunization/immunity (Section 3.0)</td>
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<td>nor a completed documentation of exemption (Section 4.0)</td>
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<td>D. Total of A, B and C</td>
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## PART II - STUDENT ENROLLMENT AND COMPLIANCE SUMMARY

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<tr>
<td>A. Total official number of students enrolled</td>
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<tr>
<td>B. Total number of entering students; required to</td>
</tr>
<tr>
<td>provide proof of immunity</td>
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<tr>
<td>C. Total number of entering students not in compliance</td>
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## PART III - CERTIFICATION

<table>
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<tr>
<td>Name of person completing report</td>
</tr>
<tr>
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</tr>
<tr>
<td>Telephone number</td>
</tr>
<tr>
<td>Completion Date</td>
</tr>
<tr>
<td>certify that the foregoing information is correct and</td>
</tr>
<tr>
<td>complete in accordance with the institution's records</td>
</tr>
<tr>
<td>as of this date.</td>
</tr>
<tr>
<td>Signature of Designated Record Keeper</td>
</tr>
<tr>
<td>Date</td>
</tr>
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</table>
References


