

Validity of Immunization Documentation Presented to a Student Health Program

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Background. Unavoidable exposure to disease and to patients susceptible and vulnerable to disease warrants that students entering medical school be immunized against many of the illnesses for which vaccines are available. The validity of immunization records presented at the time of registration, however, is largely dependent on the provision of accurate and reliable documentation by the student.

Methods. We evaluated for authenticity the immunization and tuberculin testing records of 85 students entering medical school in 1990. Five levels of valid documentation were defined, and the information on each record was reviewed accordingly.

Results. Only 43% of the records were original docu-

ments or laboratory reports of antibody titers, and 7.5% were not date-specific. We found that 8% to 20% of the forms were missing physician and/or student signatures, and 12% to 19% of the forms did not have health care provider addresses.

Conclusions. Even though medical student preventive health programs may have strict requirements, there may be substantial deficiencies in the quality of the documentation provided by the students. Such deficiencies undermine the purpose of these programs.

Key words. Students, medical; immunization; documentation; forms and records control.

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Students in the health care professions are susceptible to acquiring and transmitting communicable diseases; therefore, the trend among medical schools is toward requiring health status certification before matriculation. Various organizations and experts concerned with the health care of students have called for policies and programs that provide protection from vaccine-preventable diseases and tuberculosis.¹⁻¹² However, the effectiveness of such programs is only as good as the quality of the documentation.

At the University of South Florida (USF), student health requirements for matriculants have existed for several years and have been overseen by the Student Health Committee. For the entering class of 1990, the committee decided to evaluate whether the documentation provided by students was valid.

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Methods

After acceptance, students who planned to attend the University of South Florida College of Medicine were sent a pre-enrollment information packet. The packet included a letter from the Associate Dean of Student Affairs, a history and physical examination form, and the pre-enrollment immunization requirement form. The latter form emphasized that documentation was to be attached. The Dean's letter stated that the student must have both forms completed by his or her personal physician no later than the first day of orientation. There were 11 specific requirements that the student was expected to have met: (1) completion of a history and physical examination form; (2) satisfactory completion of the immunization record by the student's health care provider; (3) tuberculin testing; (4) rubella immunization; (5) first rubeola immunization; (6) second rubeola immunization; (7) declaration of chicken pox status; (8) tetanus/diphtheria immunization; (9) first hepatitis B immunization; (10) second hepatitis B immunization; (11) proof of health insurance.

The history and physical examinations and pre-enrollment immunization forms were reviewed by the same

Type of Documentation of Immunization and Tuberculin Testing Presented by 85 Medical Students at the Time of Orientation

Type of Test/Immunization	Antibody Titer Report	Type of Support Documentation, No.			
		Original Record	Derived Record	Verified by Physician Signature Only	Not Date Specific
Tuberculin skin test (n = 63)	—	20	42	0	1
Rubella immunization (n = 81)	10	35	21	9	6
First rubeola immunization (n = 78)	6	25	23	13	11
Second rubeola immunization (n = 48)	6	20	15	3	4
Tetanus/diphtheria immunization (n = 73)	—	33	29	3	8
First hepatitis immunization (n = 61)	5	16	30	8	2
Second hepatitis immunization (n = 38)	5	8	14	10	1

record coder for missing physician and student signatures and missing health care provider addresses. For the purposes of this study, evaluation of document validity was based on the records the students presented at the time of orientation. During the 2 months that followed, however, the medical school clinics assisted the students in completing all unmet requirements.

For immunizations or tuberculin testing, the following order of valid documentation was established. A laboratory report of an antibody titer was considered the most reliable documentation. Second was the original immunization record, or copies of a physician's progress note at the time the immunization or tuberculin skin test was performed. Third was a derived record. A derived record was defined as one in which the date had been transposed by a health care provider from either the original record or another derived record. Fourth was a date recorded on the prematriculation requirement form that was validated by the physician's signature, but not including the date on which the immunization was completed. Fifth and the least credible, was the month and year recorded but not the specific day on which the immunization was given. A non-day-specific date implied that the original record had been lost or destroyed and that the date given was recorded at some subsequent time from memory only.

Results

The records of 85 first-year medical students were evaluated. Of these students, 54 (64%) were male. The mean age of the students was 24.2 years. There were 60 (71%) white students and 25 (29%) nonwhite students. These demographic data are comparable to national averages for 1990 matriculants.¹³

The validity of documentation of the immunizations and tuberculin tests at the time of orientation is presented in the table. Overall, only 43% of the documents were copies of original records or antibody titer reports,

and 7.5% of the documents were not date-specific. Of the 85 history and physical examination forms, 7 lacked physician signatures, 12 lacked student signatures, and 16 lacked health care provider addresses. On 10 of the immunization forms physician signatures were missing; on 17 there were no student signatures, and on 10 no health care provider addresses were given.

Discussion

Poor quality of documentation undermines the credibility of a preventive health program. Immunizations and other records that are not date-specific probably should not be accepted, and those lacking proof other than a physician's signature should be scrutinized. Other studies, which found no relationship between historical information and antibody titers, did not examine the authenticity of the historical information.¹⁴⁻¹⁶ In one study, students were simply asked to respond "yes," "no," or "don't know" on a questionnaire. A 1981 study by the American College Health Association of the pre-enrollment immunization policies of American colleges concluded by stressing the importance of the physician-documented history of immunization or a serologic titer as the only acceptable methods of determining immunity.¹⁷ Moreover, missing physician or student signatures and inability to identify the physician or the physician's practice location must be considered suboptimally documented information. Physicians who perform student physical examinations are reminded to ensure that this information is accurately and completely recorded.

One method for dealing with these deficiencies is to insist that *all* forms be submitted well in advance of orientation, unless the student is accepted into medical school late. Those forms with poor documentation should be returned to the student with instructions that the deficiency will need to be corrected before enrollment can be accomplished. Other institutions have not allowed students to register for classes until the school's immu-

nization requirements were satisfied.^{18,19} If universities and colleges are to adopt and implement required preventive health programs for their students, they must ensure that the documentation provided by the students is credible.

This study identified a pervasive problem of record keeping for immunizations. Immunization records need to be given the same status as other legal documents such as marriage licenses and birth certificates, and should be constructed of a durable material.²⁰ A national data bank could also store immunization dates by social security number. Educating the public about the importance of maintaining immunization records is clearly preferable to wasting health care dollars on revaccinating individuals who do not have acceptable proof of prior immunizations.²¹

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References

1. Williams WW, Markowitz LE, Cochi SL, et al. Immunizations in college health: the remaining tasks. *J Am Coll Health* 1987; 35:252-60.
2. Symposium on vaccine preventable diseases on campus. *J Am Coll Health* 1984; 33:55-94.
3. Position statement on immunization policy. *J Am Coll Health* 1983; 32:7-8.
4. Greaves WL, Orenstein WA, Stetler HC, et al. Prevention of rubella transmission in medical facilities. *JAMA* 1982; 248:861-4.
5. Centers for Disease Control. Immunization practices in colleges—United States. *MMWR* 1987; 36:209-12.
6. Centers for Disease Control. Measles prevention: recommendations of the immunization practices advisory committee (ACIP). *MMWR* 1989; 38(S-9):1-18.
7. Centers for Disease Control. Rubella prevention: recommendation of the immunization practices advisory committee (ACIP). *MMWR* 1984; 33:301-18.
8. Centers for Disease Control. Protection against viral hepatitis. *MMWR* 1990; 39(S-2):1-26.
9. Centers for Disease Control. Screening for tuberculosis and tuberculous infection in high-risk populations and the use of preventive therapy for tuberculous infection in the United States. Recommendations of the advisory committee for elimination of tuberculosis. *MMWR* 1990; 39(RR-8):1-12.
10. Murray DL. Vaccine-preventable diseases and medical personnel. *Arch Intern Med* 1990; 150:25-6.
11. Group on Student Affairs. Recommendations regarding health services for medical students and guidelines for the development of chemical impairment policies for medical schools. Draft report. Washington, DC: Association of American Medical Colleges, March 8, 1990.
12. Poland GA, Nichol KL. Medical schools and immunization policies, missed opportunities for disease prevention. *Ann Intern Med* 1990; 113:628-31.
13. 1990 Matriculating students survey results (all schools summary). Washington, DC: Association of American Medical Colleges, 1990.
14. Polk BF, White MS, DeGirolami PC, Modin JF. An outbreak of rubella among hospital personnel. *N Engl J Med* 1980; 303:541-5.
15. Preblud SR, Gross F, Halsey NA, Hinman AR, Herrmann KL, Koplan JP. Assessment of susceptibility to measles and rubella. *JAMA* 1982; 247:1134-7.
16. Murray DL, Lynch MA. Determination of immune status to measles, rubella, and varicella-zoster viruses among medical students: assessment of historical information. *Am J Public Health* 1978; 78:836-8.
17. Collins M, Meininger JC, Kitz DS, Fager SS. Pre-enrollment immunization policies of American colleges: an assessment of the need for policy implementation. *J Am Coll Health* 1983; 32:49-52.
18. Dorman J. Measles and rubella. *J Am Coll Health* 1983; 32:48.
19. Collins M. Implementing an immunization program. *J Am Coll Health* 1985; 34:100-1.
20. Trinca JC. Over-immunization—an ever present problem. *Med J Aust* 1976; 5:734-55.
21. Amler RW, Kim-Farey RJ, Orenstein, WA, Doster SW, Bart KJ. Measles on campus. *J Am Coll Health* 1983; 32:53-7.