

THE CITY OF PROVIDENCE
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

RESOLUTION OF THE CITY COUNCIL

No. 86

Approved March 1, 1980

WHEREAS, Asbestos is considered to be a hazard to the health of our children and teachers,

NOW, THEREFORE, BE IT RESOLVED, That the State Department of Health is hereby requested to check the Asbestos that has been installed in the Schools in the City of Providence which were renovated or built in the last twenty years.

IN CITY COUNCIL
FEB 21 1980

READ AND PASSED

Ralph F. ...
PRES.

Rose M. ...
CLERK

APPROVED
Vincent ...
MAYOR

MAR 1 1980

March 5, 1980

Department of Health
Joseph E. Cannon, MD, MPH
75 Davis Street
Providence, Rhode Island 02908

Dear Dr. Cannon,

Enclosed is copy of Resolution No. 86, as presented to the City Council on February 21, 1980, by Councilman William J. Moise.

Very truly yours,

Rose M. Mendonca,
City Clerk.

RMM/jma



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Health
CANNON BUILDING
Davis Street
Providence, R.I. 02908

20 March 1980

Rose M. Mendonca
City Clerk
City of Providence
City Hall
Providence, Rhode Island

Dear Ms. Mendonca:

Reference to: Resolution of the City Council
No. 86, approved March 1, 1980

Dr. Cannon has asked me to reply to your letter of March 5, related to the recently passed resolution of the City Council which requests that the State Health Department check asbestos that has been installed in City of Providence schools renovated or built in the last 20 years.

The health hazard presented by asbestos in schools is only related to a particular form of asbestos; that is, asbestos which was mixed into cement, plaster and other binders and sprayed-on for acoustical, heat and steel beam insulation. Asbestos is commonly found around boilers and wrapped around steam pipes; this form of asbestos is not dangerous.

In 1978, the Department of Health did a comprehensive statewide inspection of schools looking for the spray-on form of asbestos. The publication which resulted from this inspection is attached. As you can see 15 schools in the state were found to have the spray-on material, but only four schools were found to have an overt hazard related to the material. This is because a hazardous condition is dependent on finding spray-on material in deteriorating condition. Only one City of Providence school, D'Abate, was found with spray-on asbestos. Repairs were made at the school and it merits future monitoring. As deterioration occurs in the material at the school it will need further repairs. At this point in time we can confidently say that spray-on asbestos does not pose any overt immediate hazard to students or staff at any of the City of

20 March 1980

Providence schools. The D'Abate school will be monitored yearly by the Department of Health and if deterioration in the material occurs the City of Providence School Department will be notified and correction will be required. If you have any further questions please contact me.

Sincerely,



Gerald A. Faich, MD
Associate Director
Preventive Medicine

GAF/am
enclosure

cc. Dr. Cannon
Mr. Siino
Dr. Mullan

Public Health Briefs

Asbestos Hazard Evaluation in Rhode Island Schools

GERALD A. FAICH, MD, MPH

Abstract: A statewide survey to identify and abate spray-on asbestos hazards in schools has been conducted in Rhode Island. Of 326 target schools, 24 (8 per cent) contained material confirmed in the laboratory to be spray-on asbestos. Overt hazards requiring major corrective measures were found in 4 (1 per cent) of the target schools. Simplified identification and reporting procedures allowed for the efficient conduct of the survey. (*Am J Public Health* 70:162-164, 1980.)

The potential health hazard associated with spray-on asbestos in schools has caused increasing concern. Several factors have inhibited the initiation of assessment and control efforts. Locating affected schools is a major undertaking. Criteria for assessing the degree of hazard for a given school have often been based on air sampling techniques not readily available. Most importantly, the costs of identifying the problem and resolving it can be high.

Asbestos has been used extensively for acoustical and thermal insulation in schools. It is often tightly bonded in tiles and other prefabricated building materials which pose no health hazard on ambient exposure. Beginning in the 1950s, spray-on asbestos was used in large buildings for insulation and for fireproofing structural steel. The material was used in gymnasiums, hallways, auditoriums and classrooms of schools until banned nationwide by the U.S. Environmental Protection Agency (EPA) in 1972.¹

The dire health effects of exposure to high doses of asbestos in occupational settings such as shipyards have been

thoroughly documented.² Even persons who live near occupational sites or are household contacts of asbestos workers have been affected.³⁻⁶

Concern about the potential hazard of asbestos in schools began several years ago when it was found that asbestos fibers were being shed from spray-on material. The Yale School of Art and Architecture in Connecticut provided an early, well-documented example of the problem.⁷ In this and other instances, asbestos air concentrations often exceeded the existing occupational standard.

In 1976, after a mail survey of New Jersey schools, a field study of 48 suspect schools showed that 62 of 64 samples of material contained significant amounts of asbestos,⁸ indicating that the presence of asbestos was accurately reported by local school authorities. Air sampling procedures and visual inspections showed that high concentrations of airborne asbestos fibers were generally found only when the surface of the spray-on material had obviously deteriorated. A memorandum from the Center for Disease Control (CDC), in Atlanta, Georgia, indicated that the public health hazard of asbestos was in direct proportion to the amount of fiber liberated from sprayed surfaces. Fiber liberation was related to the age and physical nature of the material and to the degree of its structural deterioration.⁹

With this information as a basis, the Rhode Island Department of Health with assistance from the State Department of Education and the Rhode Island Lung Association began planning a statewide school evaluation program. Training sessions were held in October 1977, and the survey was completed in May 1978.

Methods

A list of the 326 target public and private schools built in Rhode Island between 1950 and 1973 was compiled. School

Address reprint requests to Gerald A. Faich, MD, MPH, Chief, Division of Epidemiology, Rhode Island Department of Health, Room 105, 75 Davis Street, Providence, RI 02908, on assignment from the Division of Field Services, Bureau of Epidemiology, CDC, PHS, DHEW, Atlanta, GA. This paper, submitted to the *Journal* May 9, 1979, was revised and accepted for publication July 18, 1979.

TABLE 1—Asbestos Status of Rhode Island Target Schools*

| Spray-on Asbestos Status | No. of Schools | % |
|---|----------------|--------------|
| None reported on questionnaire return | 236 | (72) |
| None reported after telephone clarification | 53 | (16) |
| Present without deterioration | 15 | (5) |
| Present with minor deterioration | 5 | (2) |
| Present with major deterioration | 4 | (1) |
| No information | 13 | (4) |
| TOTAL | 326 | (100) |

*Public and private schools built or modified in the period 1950-1973.

superintendents, principals, and school governing committees were sent a letter describing the hazard posed by asbestos. Included in the letter were simplified guidelines for identifying spray-on asbestos, a survey questionnaire, and an invitation to send representatives (an inspector from the maintenance department and an administrator) to an inspection training session. School authorities were asked to review architectural records, conduct visual examinations, and classify suspected material according to use, deterioration status, and student and staff exposure status.

The training session developed by the Rhode Island Lung Association was an essential part of the program. Representatives from most public school districts attended. The preliminary visual and physical identification of asbestos in spray-on form was emphasized during the session. Transparencies showing examples of the various locations, forms, and deterioration patterns of spray-on asbestos were used.

As the survey questionnaires were received, the Department of Health called to get additional information from schools that had reported the presence of asbestos. Inspectors from the Health Department repeated visual examinations and took samples for microscopic and petrographic laboratory analyses from all schools that had reported finding spray-on asbestos. The level of hazard was defined as "potential" when laboratory-confirmed asbestos was visibly intact, and as "overt" when the material had obviously deteriorated. Schools with overt hazards were advised that abatement would have to be done in compliance with state, Occupational Health and Safety Administration (OSHA),¹⁰ and EPA¹¹ guidelines to prevent high-dose occupational exposures.

Results

Of the target schools, 312 (96 per cent) had submitted completed forms by February 1978. Telephone discussions revealed that 53 schools had erroneously reported the presence of nonspray-on asbestos materials such as tiles and steampile coverings. The presence of spray-on asbestos was confirmed visually and in the laboratory for 24 schools (8 per cent) (see Table 1). Of these, the material in 15 schools showed no visible deterioration and was classed as a potential hazard. Five schools had areas of minor deterioration and were able to readily convert the hazard from overt to potential. All schools with potential hazards will be mon-

itored in the future with annual inspections by the department of health.

Four schools had a major overt asbestos hazard. In one instance, spray-on asbestos had been used extensively to cover exposed and frequently traumatized steel beams in a large gymnasium. Asbestos surfaces, behind a bank of bleachers in the same gymnasium, had been carved and gouged by artistically minded fans. The other three affected schools had spray-on asbestos false ceilings in corridors, in several classrooms, and in a gymnasium. Hazard abatement for the schools with major overt hazards involved removing the material in two instances, using sealants in one instance, and a combination of the two methods in the fourth.

Discussion

One major limitation of the survey design is sensitivity. Schools that report having spray-on asbestos material usually do have it. Can we be certain; however, that schools that do not report having spray-on asbestos actually have none? While the Department of Health did not make validation visits, we believe most schools with an overt asbestos hazard were probably identified. Usually when spray-on asbestos is present in a school, it is used extensively and deterioration is readily apparent. Since informed nonprofessionals are able to identify the material, the validity and completeness of the survey depended primarily on accurate reporting by local school authorities. While there was little reason to question the honest compliance of school officials, intentional avoidance of hazard reporting was discouraged in several ways. First, school representatives were required to submit a report regardless of whether or not they found spray-on asbestos. Second, the initial notification letter was simultaneously sent to superintendents, principals, and school committees to avoid "pigeonholing" of the issue at any one level. Lastly, news media stressed the importance of reporting the hazard.

REFERENCES

1. Environmental Protection Agency: National emission standards for hazardous air pollutants—*asbestos, beryllium, and mercury*. Fed Reg 38:66, 1973.
2. Selikoff IJ, Hammond EC, Seidman H: Cancer risk of insulation workers in the United States. In: *Biological Effects of Asbestos*, Bogovski, Gilson, Timbrell and Wagner, (eds.) Lyon, IARC, 209-215, 1973.
3. Wagner JC, Sleggs CA, Marchand P: Diffuse pleural mesothelioma and asbestos exposure in the north western Cape Province. Br J Ind Med 17:260-271, 1960.
4. Newhouse M, Thompson, H: Methelioma of pleura and peritoneum following exposure to asbestos in the London area. Br J Ind Med 22:261-269, 1965.
5. Harries PG: Asbestos hazards in naval dockyards. Ann Occup Hyg 11:136, 1968.
6. Anderson HA, et al: Household contact asbestos neoplastic risk. Ann NY Acad Sci 271:311-323, 1976.
7. Sawyer, RN: Asbestos exposure in a Yale building: analysis and resolution. Environ Res 13:146-168, 1977.
8. Nicholson, WH, Rohl, AN, Sawyer RN, et al: Control of sprayed asbestos surfaces in school buildings: a feasibility study. Report to the National Institute of Environmental Health Sciences, June 15, 1978.

PUBLIC HEALTH BRIEFS

9. Center for Disease Control: Public Health Recommendations Regarding Asbestos Spray Building Materials, May 9, 1977.
10. National Institute for Occupational Safety and Health: Criteria for a recommended standard . . . occupational exposure to asbestos. HSM 72-10267, pps. VIII-1-8, 1972.
11. Environmental Protection Agency: National emission standards for hazardous air pollutants. Fed Reg 40:48292-48311, 1975.