A School Immunization Law Is Successful In Texas

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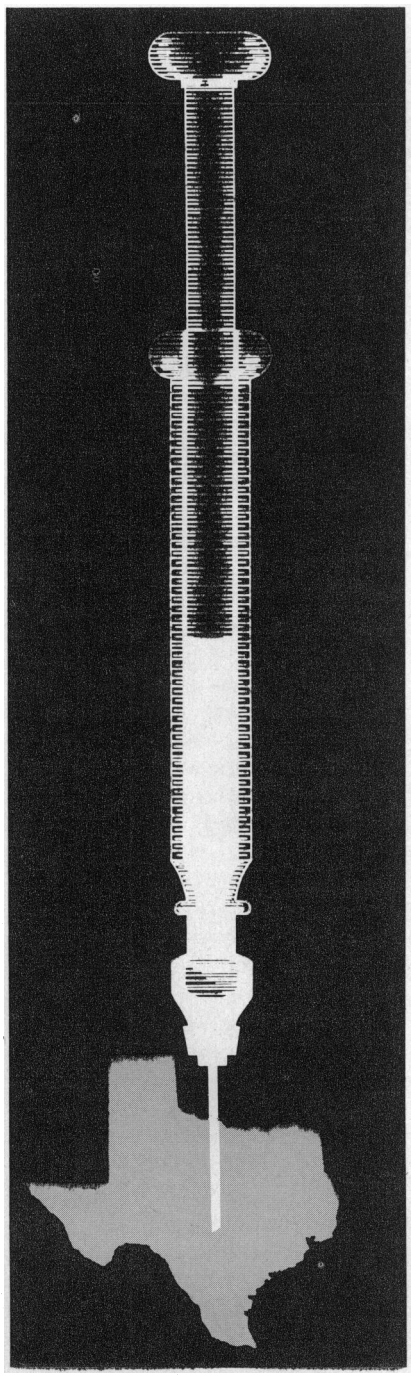

COMPULSORY IMMUNIZATION LAWS have been in effect since the 19th century, when a number of States began requiring smallpox immunizations. In 1905, a Massachusetts law was upheld by the U.S. Supreme Court *(1)*. A law requiring immunization for school attendance was upheld by the Supreme Court in 1922 *(2)*, and the majority of compulsory immunization laws have focused on school attendance since that time.

The extension of immunization laws to vaccines other than smallpox began to accelerate in the 1950s after the introduction of poliomyelitis vaccine and received further impetus with the advent of measles, mumps, and rubella vaccines in the 1960s *(3)*. By September 1973, some 41 States had enacted legislation requiring immunizations for school attendance *(4)*.

Most State laws recognize religious belief and medical contraindication as adequate reasons for exemption *(3)*, so that objections now are seldom made on these grounds. However, two other criticisms are frequently offered against immunization laws: *(a)* that most of these laws are enacted without provision of penalties for noncompliance or that such penalties are not enforced, so that the laws usually are not successful in raising immunization levels and *(b)* that a school immunization law does little or nothing for the most vulnerable group, the preschoolers, and actually may cause parents to defer immunizations until the child is ready to attend school *(5)*.

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The Texas Experience

Texas has a school immunization law that provides no penalties for noncompliance and, as with all such laws, it could cause preschool immunizations to lag.

Table 1 shows the record of morbidity which led to the enactment of the Texas law. From 1967 to 1970, Texas had reported a disproportionate share of the nation's morbidity in the vaccine-preventable diseases. In 1970, an outbreak of diphtheria occurred in a Texas city, the third such outbreak in 3 years. Twenty-two cases of paralytic poliomyelitis were also reported in Texas in 1970, about two-thirds of the national total *(6)*. The diphtheria outbreaks, particularly, caused some public alarm. In spring 1971, with the support of the Texas Medical Association, the Texas State Department of Health, and other groups, the Texas Legislature enacted a mandatory immunization law for school children. (A companion law, not discussed here, also requires immunizations for children enrolled in day care centers and child care institutions.)

The Texas school immunization law *(7)* requires protection against smallpox, diphtheria, tetanus,

Table 1. Number of cases of certain immunizable diseases in Texas and their percentage of U.S. total, 1967–70

Year	Diphtheria		Tetanus		Poliomyelitis		Rubella		Measles	
	Texas	Percent of U.S. total	Texas	Percent of U.S. total	Texas	Percent of U.S. total	Texas	Percent of U.S. total	Texas	Percent of U.S. total
1967	72	33	44	17	10	25	640	1	13,411	21
1968	131	50	17	10	22	42	2,923	6	5,204	23
1969	75	31	22	11	6	33	4,363	8	4,943	19
1970	234	53	14	10	22	79	8,409	15	8,494	18

NOTE: In 1970 the Texas population was 11,196,730, approximately 5½ percent of the U.S. population.

poliomyelitis, rubeola, and rubella. Exemption may be granted for religious reasons or medical contraindication, but religious exemptions may be set aside in time of emergency or epidemic by the State commissioner of health. The Texas State Board of Health is authorized by the law to modify or delete requirements for immunization, and under that authorization the board eliminated smallpox requirements in 1971 and established regulations, as shown in table 2. All immunizations should be completed by the time of enrollment. However, the law also allows an unimmunized child to enter school as soon as he has received the first dose of vaccine, provided he continues to receive the remaining immunizations as rapidly as is medically feasible. Finally, the law requires the Texas State Department of Health to provide the required immunizations to children "in areas where no local provision exists to provide these services." This is particularly important in Texas, where only 77 of the 254 counties are served by a State-associated local health department.

The Texas law provides no penalties for failure to comply with the law. However, the law and the subsequent regulations adopted by the State Board of Health appear to be appreciably stronger than those reported from some other States *(8)*. The Texas requirement includes all students enrolled, not just those entering for the first time. It requires schools to keep records of each student's immunization status and provides a source of public health immunizations in all counties. (Many types of personal immunization records were in use; therefore, any document listing each immunization received by year, was acceptable until June 1972. Since that time, signature or rubber-stamp validation of personal records by physicians or public health clinics is required.)

In 1972, the Texas school immunization law was challenged in the courts, and in 1973, it was upheld by the Supreme Court of Texas as a valid exercise of the State's police power *(9)*.

Coordination Among Agencies

The Texas school immunization law is an amendment to the Texas Education Code, and administration of the law is nominally a responsibility of the Texas Education Agency. Because of the requirement for offering immunizations, however, it was recognized that principal support staff would be required by the State health department's immunizations division. Accordingly, funds for implementation of the law were appropriated to the Texas State Department of Health, and a coordinated approach was worked out between the two agencies. Most initiative and all funding and support services come from the State health department, and the Texas Education Agency transmits information to the schools, receives reports from them, and provides the necessary influence and persuasion to insure that school officials take the law seriously.

The relationship between the two agencies has been exceptionally harmonious; no requests have been made of the Texas Education Agency which could not be accommodated in some way. The attitude of commitment and the amount of effort expended by the Texas Education Agency have been key factors in the success of the school immunization program.

Another important factor has been the influence of the legislature. Passage of the law was only the beginning. More than $1 million were appropriated for the immunization program (including the school program), and substantial amounts have followed in subsequent years. In addition, a highly respected State Senator supported the entire immunization effort, with his personal influence and with the activities of the Special Senate Committee on Disease Prevention by Immunization, which he chairs.

Table 2. Minimum immunization dose requirements for children admitted to child care facilities and institutions, schools, and institutions of higher learning, by age group

Vaccine	Dose requirement for ages—			
	Under 1	1-4	5-11	12+
Poliomyelitis	3	3	[1]3	[1]3
DTP or Td	3	3	[1]3	[2]3
Measles	0	1	1	0
Rubella	0	1	1	0

[1]At least 1 dose must have been received since the 4th birthday.

[2]At least 1 dose must have been received within the past 10 years.

NOTE: If a child has had measles, the vaccine is not required. Requirements for kindergarten (5-year-old children only) and grades 1–5 are the same as those for ages 5–11, shown above. Requirements for grades 6 and above are the same as those for ages 12 and older.

Implementation of the Law

With adequate funds to hire a staff, provide necessary services, and publish materials, a major communication campaign began immediately after enactment of the law. The Texas Medical Association notified all private physicians in Texas. Copies of the newly written rules and regulations were sent to officials of the more than 1,100 school districts in Texas, along with immunization manuals, forms, sample recordkeeping cards, and other materials. An offer was made to have a member of the field staff of the immunizations division consult with any school superintendent who desired further information or advice, and more than 200 superintendents were visited. Local health departments, in most cases, began supporting the school systems in their areas, and immunizations by private physicians increased in volume almost immediately. The entire campaign was completely coordinated between the State health department and the Texas Education Agency.

From July 1971 to May 1972 almost 4 million doses of vaccines were administered by local health deparments or by the field staff of the immunizations division. A substantial number of these immunizations were given in mass clinics in the schools. In addition, of course, a significantly large but unknown number of immunizations were administered by private physicians.

On May 1, 1972, the Texas Education Agency began collecting a series of reports of immunization levels from all school districts (table 3). These reports are not based on a small random sample or parental memory, but on cumulative totals of official records kept on each campus in 1,145 school districts. They are a complete count of all school children in Texas—more than 2½ million.

After each report was compiled, the immunizations division's field staff visited every school district that reported low immunization levels. More than 400 schools were visited after the May 1972 report, 250 after the January 1973 report, and 158 school districts after the October 1973 report. The requirement to keep meticulous records, to make periodic reports, and the certainty that a bad report would be followed up seem to have had a significant effect.

Table 3. Percentage of immunization levels in Texas public schools, by type of vaccine

Vaccine	Students protected (percent)		
	May 1, 1972	Jan. 31, 1973	Oct. 15, 1973
DTP or Td ...	79	90	92
Poliomyelitis .	74	88	93
Measles	79	92	95
Rubella	78	91	94

The Texas Education Agency also warns school districts reporting immunization levels below 90 percent that their accreditation may be questioned for failure to comply with the law.

By spring 1974, field reports indicated that most of the children unimmunized as of the October 1973 report were completing their series. The school population of Texas appeared to be almost completely immunized, at least for the 1973-74 school year. It thus appears that the Texas law has been implemented successfully without any provision in the law for incentives or penalties.

There is also some evidence that the school immunization law has not caused parents to delay immunizations for their children until time for school entry. Table 4 shows the number of immunizations administered to preschool children (under age 5) by public health agencies in Texas during the period 1970-73. Because of the many other immunization activities in the State during this period, it is not possible to say conclusively what effect the school law has had on the immunization of preschool children. However, the substantial increase in 1973 over previous years (except for rubella, in which the initial mass campaigns were occurring in 1970 and 1971) certainly does not lend support to the argument that parents in Texas are deferring immunizations until their children enter school.

Changes in Morbidity

Along with the implementation of the school law, the State has made an intensive effort in other programs as well. For instance, a sustained education campaign is continuing; an Infant Immunization Surveillance Program provides contact with parents of newborns; a companion law requires immunization of children enrolled in day care centers and child care institutions; additional clinics are being scheduled; and outreach work by the immunizations division staff is being expanded constantly. Because of the many programs, it is simply not possible to assess the school law's effect upon morbidity.

The cumulative effect of all these programs upon morbidity, however, appears to be significant. Table 5 shows the changes in morbidity from 1970 (the last year before the law and the expanded program began) through 1973. The reduction in morbidity includes a feature unprecedented in Texas communicable disease history; in

Table 4. Number of immunizations administered in public health facilities to children under age 5, Texas, 1970–73

Vaccine	Total doses administered, under age 5			
	1970	1971	1972	1973
Diphtheria-tetanus	347,945	332,285	314,667	368,461
Poliomyelitis	293,401	288,355	288,399	350,810
Measles	45,614	96,039	98,134	110,056
Rubella	165,369	154,599	106,632	115,214
Total	852,329	871,278	807,832	944,541

Table 5. Cases of vaccine-preventable disease, Texas, 1970–73

Disease	Number of cases reported			Percent reduction	
	1970	1971[1]	1972	1973	1970-73
Diphtheria ...	234	56	41	18	–92
Tetanus	14	10	20	10	–29
Pertussis	437	282	185	115	–74
Poliomyelitis .	22	4	4	0	–100
Measles	8,494	9,585	1,617	533	–94
Rubella.....	8,409	4,414	1,596	1,129	–87

[1]The year the school immunization law was enacted.

1973, the first year since recordkeeping began, Texas reported no confirmed cases of paralytic poliomyelitis.

Conclusions

The passage of a public health law, particularly one without a clause for penalty or incentive, may not be uniformly accepted or heeded, or at worst, the law may receive only nominal compliance. Over the past 3 years, it has been gratifying to observe the burgeoning effectiveness of a school immunization law in Texas. The Texas law has been successfully implemented. It has helped to increase immunizations among children of school age to levels approaching 95 percent, and it obviously has made at least some contribution to a substantial decline in morbidity of the vaccine-preventable diseases. It remains to be seen whether the high immunity levels can be maintained in the coming years as the program adjusts to a maintenance status.

The Texas school immunization law definitely does not appear to have caused any decline in immunization of preschool children and conceivably could have augmented such immunizations that all children need.

Perhaps it is true that the Texas law was successfully implemented only because a number of highly favorable factors were present. The public was concerned about at least one of the diseases; the law was well written; private physicians, medical societies, schools, and local health departments cooperated admirably for the most part; and the joint effort by the responsible State agencies was unusually harmonious. Underlying all these factors was the provision of funds and support by the legislature. In retrospect, it appears that the removal of even one of these factors might have greatly diminished the degree of success achieved in implementing the law.

References

1. *Jacobson v. the Commonwealth of Massachusetts,* 197 U.S. 11, 25 S. Ct. 358, 49L, Ed. 643, Ann. Cas. 765 (1905).
2. *Zucht v. King,* 260 U.S. 174, 43 S. Ct. 24, 67L (1922).
3. Jackson, C. L.: State laws on compulsory immunization in the United States. Public Health Rep 84: 787–795, September 1969.
4. Center for Disease Control: Immunization requirements prior to school entry. Atlanta, Ga., September 1973.
5. Marshall, A. L., Jr., and Offutt, A. C.: A noncompulsory immunization law for Indiana school children. Public Health Rep 75: 967–969, October 1960.
6. Center for Disease Control: Morbidity and mortality. Vol. 19, No. 53 (annual suppl., summary 1970), p. 8.
7. Texas Education Code, Sect. 2.09.
8. Jackson, C. L., and Carpenter, R. L.: Effect of a State law intended to require immunization of children. Health Serv Rep 87: 461–466, May 1972.
9. *Leo Itz et ux v. Penick et al,* 493 S.W. 2d 506 (Tex. sup ct 1973).

SYNOPSIS

GEE, LON (Texas State Department of Health), and SOWELL, R. F., Jr.: ***A school immunization law is successful in Texas. Public Health Reports, Vol. 90, January–February 1975, pp 21–24.***

Forty-one States have compulsory school immunization laws in some form, but these laws are sometimes criticized as being unenforceable or as causing parents to defer immunizations for their children until they are of school age.

A school immunization law, enacted in Texas in 1971, has been implemented successfully; immunization levels were near 95 percent in October 1973. One feature of the Texas law, possibly unique in the United States, is the requirement that all schools keep files of immunization records for all students. Also, increasing numbers of immunizations are being administered to preschool children; thus, it appears that parents are not deferring immunizations until their children are of school age.

Morbidity of the vaccine-preventable diseases decreased markedly in Texas from 1970 to 1973, including declines of more than 90 percent for diphtheria and measles. The first paralytic poliomyelitis-free year on record was 1973. The school law and a greatly expanded immunization effort among preschool children are believed to be principal factors in the decline in morbidity.

Successful implementation of the Texas compulsory school immunization law is attributed to public concern, a good law, and excellent cooperation from all agencies in the State concerned with health and education. The provision of money and support by the Texas legislature is also cited as one of the most important factors.