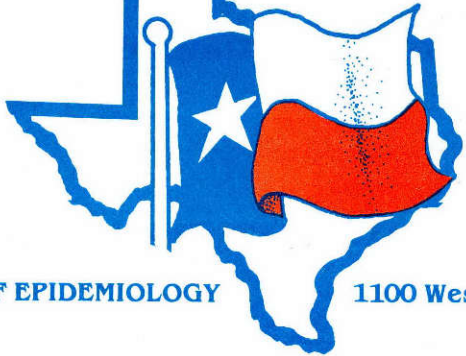


Texas Preventable Disease NEWS



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Aspirin Use Among Children During the 1983
Influenza Season
Influenza Virus Surveillance

BUREAU OF EPIDEMIOLOGY

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ASPIRIN USE AMONG CHILDREN DURING THE 1983 INFLUENZA SEASON

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Since 1980, four case-control studies have shown an association between Reye syndrome and the ingestion of salicylates during a prodromal viral illness.^{1,3} Although several authors have questioned this association^{4,5}, the Surgeon General of the United States and the Committee on Infectious Diseases of the American Academy of Pediatrics have recommended against salicylate use for children suspected of having influenza or chickenpox.^{6,7}

At the time these recommendations were made, very little background information was available regarding the extent of, or reasons for, aspirin use by children. The only published information about the proportion of ill children who might be expected to receive aspirin is from the relatively small control groups in the case-control studies.^{1,3} No studies have been published regarding changes in aspirin usage as a result of Reye syndrome publicity or physician efforts. To address these issues and examine the current incidence of antipyretic use in children with acute febrile illness, a telephone survey was conducted in Houston during March 1983 by the Influenza Research Center at Baylor College of Medicine and the Bureau of Epidemiology, Texas Department of Health (TDH).

METHODS

Six elementary schools were chosen at random from two school districts in the Houston area. The school districts had a combined elementary school population of 21,467 in 33 schools. Telephone numbers were acquired from the school directories for grades one through six. Common telephone numbers belonging to the same household were grouped.

Respiratory viral activity in Houston is carefully monitored each year by the Influenza Research Center at Baylor College of Medicine. Based on this surveillance information, the survey was conducted just after the peak in influenza A (H3N2) activity in the community. Randomly chosen households were telephoned until 200 interviews were obtained. The interviewers spoke with the adult member of the household most knowledgeable about the children's illnesses and medications.

Interviews involved a series of questions concerning the number of children 12 years of age or less in the family, the occurrence of any illness since Christmas 1982, symptoms, all prescription and non-prescription medications administered, knowledge of Reye syndrome, knowledge of the association between Reye syndrome and aspirin, and demographic data. Each reported medication was coded for its pharmacologic components. All questions about illness and medications were recorded before

questions concerning knowledge of Reye syndrome were raised. Pamphlets were mailed to survey participants who requested information about Reye syndrome.

RESULTS

Two hundred sixty-four households were contacted. Interviews were completed on 200 households with 346 children ages 12 years or younger. Forty-eight households (14.9%) refused participation, and a language barrier was encountered in 16 households (5%). The majority of the respondents were white (80.9%) with a mean age of 34.4 years. The mother of the children was the source of information in 77.5% of the households.

One hundred seventy-nine children (51.7%) had experienced at least one acute illness since Christmas 1982. Symptoms included fever (73%), coryza (63%), cough (60%), sore throat (48%), headache (35%), nausea (26%), myalgias (26%), and diarrhea (16%). The children were ill for an average of 6.4 days, although an average of only 3.1 school days were missed. Physicians were visited or consulted by phone regarding 43% of these illnesses. Fever was measured with a thermometer in 114 children, 103 of whom had at least one temperature $\geq 100^{\circ}\text{F}$ ($>37.7^{\circ}\text{C}$).

Of the 179 acutely ill children, 173 (97%) were perceived as acutely ill by their parent and received at least one medication; 106 (59.2%) received two or more medicines. Antipyretics were by far the most commonly used drugs, given to 82.7% of ill children. Considering all ingredients in all medications administered, 49.7% of the 173 acutely ill children received acetaminophen only, 16.8% received aspirin only, and 16.2% received both.

For comparison, parents were also questioned regarding their children's use of medications during the same three months when they did not have an acute illness as perceived by the parent. Fourteen percent of the 346 children 12 years of age or under had received an aspirin-containing medication and 14% an acetaminophen-containing medication for allergic conditions or symptoms such as headache.

Medications administered to the 103 children with measured temperatures $\geq 100^{\circ}\text{F}$ ($>37.7^{\circ}\text{C}$) are presented in Table 1. These children are of particular interest because they represent a group thought to be at high risk of Reye syndrome. A total of 13.6% received aspirin only, while 61.2% received acetaminophen only. Among the subgroup of 44 children with temperatures of at least 103°F (39.4°C), 11.4% received aspirin only, and 59.1% received acetaminophen only. Antibiotic and decongestant use are also shown in Table 1.

Despite more than two years of publicity about the possible link between Reye syndrome and aspirin use, only 59.5% of the 200 respondents in this survey stated they had heard of Reye syndrome. Even fewer (42.0%) stated they had heard of an association between Reye syndrome and aspirin. Among the 84 respondents who had heard of this association, 59% first heard about it from the television or newspaper, 11% learned from their neighbors, and 10% were instructed by their physicians.

Parental knowledge of the Reye syndrome-aspirin association did influence the choice of antipyretic medication. The 103 children with a measured temperature $\geq 100^{\circ}\text{F}$ ($>37.7^{\circ}\text{C}$) were members of 76 families. Thirty-five of these 76 parents knew of the association, and 41 did not. Twelve of the 35 parents (34%) who knew of the possible risk administered aspirin containing medications to their febrile children compared to 49% of the parents who were unaware of the potential risk. Administration of aspirin or acetaminophen to the 103 febrile children was not related to the age of the child or whether the parent consulted a physician about the illness.

DISCUSSION

This survey suggests that a major change has occurred in recent years in the types of antipyretics administered to children. Of the surveyed Houston children <12 years of age who became ill during the 1983 influenza season, 32% received aspirin for that illness. By way of comparison, control groups in the case-control studies conducted in Arizona, Michigan, and Ohio in 1980 and 1981 suggested that 50% to 77% of ill children received aspirin. Conversely, acetaminophen use has increased to 64%, compared with 31% to 34% found in the 1980-81 control groups.

A better comparison group for assessing trends in aspirin and acetaminophen use in Houston is provided by an unpublished survey performed by the Influenza Research Center and the Centers for Disease Control in February 1981. That telephone survey involved 210 families including 108 ill children. It revealed that 96% of these children received some type of antipyretic for their illness; 69% received aspirin, and 52% received acetaminophen. The survey, performed shortly before Reye syndrome received widespread media attention, revealed that only 22/108 (20%) of the respondents knew of the Reye syndrome-aspirin association early in 1981. The 1983 survey found that 42% of parents were aware of this association.

There are a number of possible explanations for the use of aspirin despite parental knowledge of the potential risk of Reye syndrome. In many cases, the parent was unaware that the medication contained aspirin. In other cases, the parent may have forgotten, or not believed, that the risk was significant. Whatever the reasons, it appears that the impact of parent education on antipyretic choice has been small.

In summary, this survey suggests that acetaminophen has replaced aspirin as the major antipyretic used by children in Houston. Successful advertizing and marketing techniques probably account for much of the increase in acetaminophen use, as parental education about the Reye syndrome-aspirin association has not been thorough enough to account for this change. Nevertheless, if the decline in aspirin use in Houston is representative of large segments of the United States, and if aspirin is causally related to Reye syndrome, a steady decrease in the incidence of Reye syndrome may be expected during subsequent years.

PDN Editorial Note: A list of antipyretics containing aspirin or acetaminophen will be published in a subsequent issue of PDN.

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Table 1.
Number and Percentage of Acutely Ill and Non-acutely Ill Children by
Type of Medication Taken, December 1982-March 1983, Houston, Texas

<u>MEDICATION</u>	<u>NO ACUTE ILLNESS N=346</u>	<u>ANY ACUTE ILLNESS N=179</u>	<u>MEASURED FEVER ≥100°F(37.7°C) N=103</u>	<u>MEASURED FEVER ≥103°F(39.4°C) N=44</u>
Aspirin Only	44 (12.7%)	29 (16.2%)	14 (13.6%)	5 (11.4%)
Acetaminophen Only	45 (13.0%)	86 (48.0%)	63 (61.2%)	26 (59.1%)
Aspirin and Acetaminophen	5 (1.4%)	28 (15.6%)	21 (20.4%)	12 (27.3%)
Decongestant	36 (10.4%)	58 (32.4%)	29 (28.2%)	10 (22.7%)
Bronchodilator	6 (1.7%)	5 (2.8%)	3 (2.9%)	0
Expectorant	4 (1.2%)	38 (21.2%)	19 (18.4%)	7 (15.9%)
Antibiotic	14 (4.0%)	43 (24.0%)	32 (31.1%)	14 (31.8%)

INFLUENZA VIRUS SURVEILLANCE

Widespread influenza virus activity is still occurring throughout the state. Influenza B viruses have been isolated in residents of Brazos, Harris, Hays, McLennan, Nueces, and Travis Counties. A total of 143 influenza A(H1N1) viruses have been isolated from residents of Brazos, Grayson, Harris, McLennan, and Travis Counties. Four influenza A(H3N2) viruses have been identified in Harris County and one from Nueces County. The influenza A(H3N2) viruses have all been from pre-school age children.

In past years influenza A (H1N1) viruses have caused epidemics in children and young adults. A random sample of 30 school districts (representing 128 schools) in 29 counties throughout the state were telephoned during the week of February 1-8, 1984. Absentee levels greater than 10% were reported from 65% of the schools for at least one day during that period. Four percent of the schools had absentee levels above 20%. Background absentee level is usually 5% or less.

Other states reporting widespread influenza activity are Arkansas, Arizona, New Mexico, Louisiana, Iowa, North and South Carolina, and Georgia.

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