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CHILDHOOD MORTALITY FROM ACCIDENTS 1949

BIOSTATISTICS SERVICE
FIFE-HAMILL MEMORIAL HEALTH CENTER

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Accidents kill and cripple more of our children than all the infectious diseases of childhood put together. Those diseases include influenza, pneumonia, poliomyelitis, tuberculosis, rheumatic fever, measles, diphtheria, and whooping cough.

If parents understood the accident problem and were as concerned about it as they are about polio and other contagious diseases, the toll of childhood death and disability could be cut sharply.

Accident prevention means setting up and maintaining precautionary measures. The measures that could reduce accidents are known to family physicians, health officers, teachers and safety experts. All these people are ready and anxious to help. But they can do little until parents are well enough informed to see that the needed precautions are set up and continuously maintained in the home, school, and other places where children are exposed to accidents.

The accompanying charts answer three questions:

1. How serious are accidents compared to other causes of childhood death? Chart 1 answers this question for each of five age groups. One may add the generalization that, in 1949, accidents accounted for over a third of all childhood deaths in the age range 1 to 19 years. The chart also shows that decreases in accident rates from 1940 to 1949 were small compared to the reductions achieved in death rates from other causes, and indeed the accident rate for ages 15-19 increased slightly during the decade. In terms of overall rates per 100,000 children of ages 1-19, the accident rate was cut only 16% (38.1 to 32.0) while the rate for all other causes was cut 46% (121.6 to 65.1).

2. What are the main causes of childhood accidents? Chart 2 shows that motor-vehicle accidents make up the greatest single cause group. Although it takes the heaviest toll in adolescence, the family car—or the neighbor’s car—is a grave threat even to younger children. The chart also brings out the age variation in accident deaths from drowning; fires, explosions and burns; firearms; falls; poisoning; and, especially in infants, the inhalation or ingestion of objects.

3. In what kinds of places do childhood accident deaths occur? Chart 3 shows the new data on this question that became available in 1949. As would be expected, accident risks for infants and preschool children are greatest in the home. Yet, in the preschool age range, accidents outside the home also take a heavy toll, especially from transport vehicles.
Most of the accidents occurring on streets are due to vehicles and are therefore classified as transport accidents (see below). The low rate shown in Chart 3 for "street" merely means that street accidents which do not involve vehicles are infrequent.

However, one of the important facts revealed by the new data is the relative safety of what statisticians call "places for recreation and sport," which are indicated in Chart 3 as "playgrounds". These places include ball fields, swimming pools, and other places specially arranged for recreation. They are usually under adult supervision. The accident rate for these places is so small that it could not readily be shown as a separate band on the chart. Over the age range 1-19, the rate for places of recreation and sport accounts for only a small fraction of 1% of all accident deaths in childhood.

Number of Deaths

The data in the charts are shown in terms of rates rather than numbers of deaths in order to give an accurate picture of the relative risks at different ages. The number of deaths involved in the rates are, of course, important additional information. In 1949 the total number of children under age 20 killed by accidents was 17,649. Of them, 2,358 were deaths of infants under 1 year. These deaths were represented by the total infant rate, 72.1, shown in all three charts. The other 15,291 accident deaths were distributed as follows: 4,739 of ages 1-4; 3,004 of ages 5-9; 2,535 of ages 10-14; and 5,013 of ages 15-19. These numbers are represented by the rates 37.8, 22.3, 22.7, and 47.2, respectively.

Classification of Causes

The 1949 data are classified according to the Sixth Revision of the International Lists of Diseases, Injuries, and Causes of Death. Some of the detailed causes of accidents used in that Revision are not comparable with those used in the Fifth Revision, which was applied to the data for 1940. However, over the age range 1-19 years total accident deaths as classified by the two Revisions are fairly comparable; that is, the "comparability ratio" for the Revisions is close to 1.00 so far as total accident rates of children aged 1-19 years are concerned. This cannot be said regarding infants under 1 year of age, and as noted in Chart 1, the apparent rise from 1940 to 1949 in the accident rate for infants may not be real.

"Accidental Suffocation"

It is now widely recognized that infant deaths certified to "accidental mechanical suffocation in bed or cradle" (category number E924 in the Sixth Revision or 182 in the Fifth Revision) are rarely due to accidents or "suffocation," but are due instead to viral infections which overtake infants suddenly. Accordingly that cause is excluded from both the 1949 and 1940 accident rates in this report for infants under 1 year. However, deaths of children over 1 year of age certified to that cause, which are very few in number, have been included with miscellaneous accidents.
Race and Sex Differences

For an analysis of the relative risks among white and nonwhite children and among boys and girls, the reader is referred to an earlier report, "Childhood Mortality from Accidents", which was issued in 1946 as Children's Bureau Publication No. 311. To obtain statistically reliable information on race and sex differences, the data in that report were averaged over the 3-year period 1939-1941. In brief, for children under age 20 accident mortality was 35% higher for nonwhite than for white children, and the rate for males was over twice that for females. The sex difference increased sharply with age. The excess for boy babies was 30%, and at ages 15-19 the rate for boys was about four times as high as for girls.

Transport Accidents

Although transport accidents are not classified by place of occurrence—beyond what is implied in the detailed classification of such accidents—they are included in Chart 3 for the sake of completeness and to make Charts 2 and 3 comparable.

The transport accidents shown in Chart 3 include both the motor vehicle group shown in Chart 2 and a relatively small group of other accidents (railway, water, air, and bicycle transport) which were included with "miscellaneous accidents" in Chart 2.

More detailed breakdowns of both transport and non-transport accidents are given in the reference cited in Chart 2. That volume is available in health departments and large libraries. Similar information is given in a separate report, "Accident Fatalities in the United States, 1949," Vital Statistics-Special Reports, Vol. 36, No. 19, which may be obtained on request to the National Office of Vital Statistics, Washington 25, D. C. In that report, table 8 on page 381 gives the number of deaths by place of accident on which the rates shown in Chart 3 are based.
Although this total accident rate changed little from 1940 to 1949, the component due to motor-vehicle accidents rose 12% while the component due to other accidents fell 1% during that period. No rise in the motor-vehicle component occurred for the other age groups, with the possible exception of infants under 1 year. In the rate shown for infants, both the motor-vehicle and other-accident components apparently rose, but the significance of the increases is uncertain owing to changes in the classification of causes of infant death in 1949.
Rates are deaths per 100,000 children of specified ages. Numbers of deaths from each cause and from the causes grouped here as "miscellaneous accidents" are given in Table 9, pages 148-152 in "Vital Statistics of the United States, 1949, Part I," published by the Federal Security Agency, National Office of Vital Statistics.
CHART 3.—CHILDHOOD ACCIDENT MORTALITY RATES
BY PLACE OF ACCIDENT, U.S., 1949

Rates are deaths per 100,000 children of specified ages.

* Data by place of accident are not available for ages 15-19, but the rates shown here for ages 15-24 probably approximate the rates for ages 15-19.