fsc ref.

(1)

Preventing Death and Injury From Fires With Automatic Sprinklers and Smoke Detectors

Council on Scientific Affairs

Resolution 2 (Annual Meeting 1985), which was referred to the Board of Trustees, asked the American Medical Association to urge government officials to require all new residential and nonresidential buildings to be equipped with rapid-response automatic water sprinklers and smoke detectors and to require their installation in existing high-rise buildings within three years unless existing code requirements are more stringent. This response to the resolution is a summary of the literature up to June 1986.

(*JAMA* 1987;257:1618-1620)

ACCORDING to the Federal Emergency Management Agency,[1] the incidence of fires and of fire death rates per capita in the United States is among the highest in the industrialized world. The United States is second only to Canada in number of deaths caused by fire from 1965 to 1985.[2] Fire is responsible for the third largest number of accidental deaths and injuries; it causes 20 times more deaths per year than hurricanes, tornadoes, floods, and earthquakes together.[3] From 1977 to 1983, civilian deaths averaged almost 7000 per year. This figure is comparable to the midair crashes of two 747 jets each month.[4]

In 522 000 reported fires in 1981 involving one- and two-family residences, more than 4000 persons were killed and 34 000 were injured, including 20 000 firemen. There was over $1.5 billion in property loss and nearly $0.5 billion of indirect expenses for temporary shelter, absence from work, and legal, medical, and funeral services.[5] Residential fires—most of which are caused by smoking, heating, cooking, and suspected arson—comprise only 25% of fires annually in the United States, but they are responsible for 76% of the deaths, 64% of the injuries, and 43% of the property loss.[6]

Statistics in 1983 for all types of fires were generally worse than in 1982; the numbers of fires, deaths, and injuries increased slightly more than 4%. The major causes of residential fires (heating and cooking) and the percentages of fire-related deaths, injuries, and dollar loss show little change from 1982 to 1983. Careless smoking caused the most fatalities (23.1% in 1983); these incidents usually occurred at night, and the smoker often had been drinking. Cooking was blamed for the largest proportion of fire injuries (15.6%), while arson accounted for the largest economic loss.[6]

In 1984, property loss from fire totaled $6.7 billion, an increase of 1.7% over 1983; this is an average loss of $6947 per structure. The incidence of arson in 1984, on the other hand, decreased by 9.4%—to 110 500 structure fires—with a dramatic reduction (45%) in deaths associated with such fires (National Fire Protection Association, written communication, Aug 19, 1985).

Smoke and carbon monoxide (CO), rather than heat or flame, are generally responsible for fire-related deaths. Based on data obtained in Maryland from 1972 to 1977, CO alone caused 48% of the fatalities; CO combined with other factors (eg, the presence of hydrogen cyanide or heart disease) accounted for another 16%. Burns and heat were responsible for the remaining 36% (18% each).[2]

From the Council on Scientific Affairs, American Medical Association, Chicago.

Report G of the Council on Scientific Affairs, adopted by the House of Delegates of the American Medical Association at the 1986 Annual Meeting, in response to Resolution 2 at the 1985 Annual Meeting.

This report is not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all of the facts and circumstances involved in an individual case and are subject to change as scientific knowledge and technology advance and patterns of practice evolve. This report reflects the views of the scientific literature as of June 1986.

Reprint requests to Council on Scientific Affairs, American Medical Association, 535 N Dearborn St, Chicago, IL 60610 (William R. Hendee, PhD).