

UTILITY OR FUTILITY OF ORDINARY MORTALITY STATISTICS IN THE STUDY OF AIR POLLUTION EFFECTS

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1. Introduction

Interest in the disease producing potential of air pollution in the United States was stimulated by the Donora episode which occurred in October 1948. This audience may be interested in a brief description of that episode which prefaces the exhaustive and now classic report [1] of the epidemic:

"This particular smog encompassed the Donora area on the morning of Wednesday, October 27. It was even then of sufficient density to evoke comments by the residents. It was reported that streamers of carbon appeared to hang motionless in the air and that visibility was so poor that even natives of the area became lost.

The smog continued through Thursday, but still no more attention was attracted than that of conversational comment.

On Friday, however, a marked increase in illness began to take place in the area. By Friday evening the physicians' telephone exchange was flooded with calls for medical aid, and the doctors were making calls increasingly to care for their patients. Many persons were sent to nearby hospitals, and the Donora Fire Department, the local chapter of the American Red Cross, and other organizations were asked to help with the many ill persons.

There was, nevertheless, no general alarm about the smog even then. On Friday evening the annual Donora Halloween parade was well attended, and on Saturday afternoon a football game between Donora and Monongahela High Schools was played on the gridiron of Donora High School before a large crowd.

The first death during the smog had already occurred, however, early Saturday morning at 2:00 a.m., to be precise. More followed in quick succession during the day and by nightfall word of these deaths was racing through the town. By 11:30 that night 17 persons were dead. Two more were to follow on Sunday, and still another who fell ill during the smog was to die a week later on November 8.

On Sunday afternoon rain came to clear away the smog. But hundreds were still ill, and the rest of the residents were still stunned by the number of deaths that had taken place during the preceding 36 hours . . ."

In retrospect it appears that despite the fact that almost 6000 people, 43 per cent of the population of the Donora area, were affected by the smog, the episode