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## POSITION STATEMENT: HARMFUL EFFECTS OF ENVIRONMENTAL NOISE EXPOSURES

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The American Academy of Nursing promotes the reduction of environmental noise, which is defined as unwanted or disturbing sound.<sup>1</sup> Sources of this noise include household equipment, recreational activities, concerts, roads, railways, airports, and industrial sites. Noise is more than an annoyance; it is a public health hazard, having a significant impact on the health of our nation and its economic well-being. It has been well documented that noise exposure contributes to hearing loss, tinnitus, heart disease, stroke, anxiety, stress, depression, learning difficulties, job performance, sleep disorders, and reduced cognitive abilities.<sup>2–8</sup> This position is consistent with the Academy’s Strategic Goal 2 to “Lead efforts, in partnership with others, to address the broad range of factors that affect the health of populations.” Further, reducing noise and the health problems it causes will result in a reduction in health care costs, one component of the Triple Aim of the Academy’s Strategic Goal 1 for the health care system.<sup>9</sup>

In 2011, the World Health Organization (WHO), recognizing the urgent need to decrease environmental noise, published a report summarizing the negative impacts of environmental noise on health and the economy.<sup>10</sup> There is scientific evidence of a link between noise and high blood pressure, heart disease, stroke, heart attacks, hearing loss, tinnitus, sleep disturbance, reduced cognitive abilities, hyperactivity, personal injury, obesity, low birth weight, and prematurity.<sup>3–8, 11</sup> These are just a few examples of the debilitating and potentially life altering effects of environmental noise on health. Unfortunately, the effects of environmental noise on health often go unnoticed, as they slowly build over time and are often not recognized as associated with noise. However, the health effects of noise place a high economic burden on our society, comparable to those due to passive smoking.<sup>12</sup> It is conservatively estimated that at least one million healthy years of life are lost every year in Western Europe alone because of traffic related noise. A reduction in environmental noise levels by a mere five decibels (normal conversation = 60 decibels) can reduce the prevalence of hypertension and coronary heart disease, a reduction in prevalence that would benefit the economy by an estimated \$3.9 billion per year.<sup>13</sup>

In the 1970's, the federal government recognized the importance of noise reduction and enacted two landmark legislations: the Noise Control Act of 1972 and the 1978 Quiet Communities Act. As a result, the Office of Noise Abatement and Control (ONAC) was created and charged with coordinating federal noise reduction programs, promoting noise education and research, and assisting state and local noise abatement.<sup>14</sup> Importantly, this legislation established that the primary responsibility for control of noise was at the state and local levels. As a result, state and local regulations vary widely.<sup>15</sup> Unfortunately, funding for the ONAC was terminated in 1982, leading to little action in noise abatement and control since that time.<sup>14</sup>

In July 2015, recognizing the growing health problems related to noise pollution, H.R. 3384 Quiet Communities Act of 2015 was introduced in the current 114th Congress to (1) re-establish the ONAC to support state and local noise control programs; (2) carry out national noise control research to assess the mental and physical health effects of noise, (3) establish national noise assessment programs extending beyond commerce-related noise, and (4) develop public health education and training programs.<sup>16</sup> The proposed Act is congruent with the WHO guidelines for community noise that include recommendations for global action, research and interventions.<sup>10, 17</sup> Consistent with the WHO guidelines, the United Kingdom and other European countries already have legislation that requires quieter industrial and household equipment, labeling of noise levels of products, and incentives for manufacturers to develop quieter products. In the United States, the National Institute for Occupational Safety and Health (NIOSH) promotes the implementation of Buy Quiet programs that encourage companies to purchase or rent quieter machinery in order to reduce worker exposure to noise.<sup>17</sup> However, these noise reduction programs are not required by law, and there is a need for additional legislation to reduce environmental noise beyond the workplace.

The American Academy of Nursing supports efforts to reduce noise at its source by requiring production and use of quieter equipment and appliances; implementing measures to reduce airport, railway, and road noise; and enacting legislative restrictions at state and local levels on reducing environmental noise levels, including those at public events. The Academy will collaborate with federal agencies, state and federal legislators, and other non-nursing organizations, to support the reduction of environmental noise.

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