

# American Public Health Association's Basic Principles of Healthful Housing

## I. Overview

In 1938, the [American Public Health Association](#) (APHA) formulated [Basic Principles of Healthful Housing \(Principles\)](#), to promote the “physical, mental and social health” essential in housing. For each of the 30 Principles, APHA also identified Specific Requirements, and the Methods of Attainment considered at that time to be the “more important means” by which to achieve the Principle's objectives.

## II. How The Principles Have Been Applied

The Principles continue to inform the dialogue about, and development of policies to promote, healthy housing. For example, U.S. federal agencies endorse the Principles in the *Healthy Housing Reference Manual (HH Manual)*. The CDC also modeled its original basic housing inspection manual after the Principles. In the U.K., the University of Warwick used the Principles as a foundational document in the development of the Health and Housing Rating System, the nation's housing inspection system. The Principles comport with modern tenets of healthy housing, *i.e.*: keep housing dry, clean, ventilated, and pest free; avoid contaminants; and properly maintain housing.

## III. APHA's Principles

The 30 Principles fall into four categories:

- a. **Fundamental Physiological Needs** (e.g., for illumination, heat, cooling, space, chemical purity, quiet);
- b. **Fundamental Psychological Needs** (e.g., for privacy, adequate space, cleanliness, peace-of-mind, normal family and household activity);
- c. **Protection Against Contagion** (e.g., from disease, vermin, sewage, contaminated water, over-crowding, food decay); and
- d. **Protection Against Accidents** (e.g., from falls, fire, burns, gas, mechanical injuries, electrical shock, building collapse, traffic).

The Principles are summarized below, along with analysis excerpted from the *HH Manual*. The number of each Principle as identified in APHA's 1938 report is indicated by “P#.”

### Fundamental Physiological Needs (8 Principles<sup>[1]</sup>)

1. A thermal environment to *avoid undue* heat loss (P1) -- and *permit adequate* heat loss (P2).

The lack of adequate heating and cooling systems in homes can contribute to respiratory illnesses or even lead to death from extreme temperatures. . . . [A] majority of today's homes [can] maintain healthy temperatures, although many houses still lack adequate insulation.

2. An atmosphere of “reasonable chemical purity” (P3).
3. Provision of:
  - a. adequate *daylight* illumination and avoidance of undue daylight glare (P4);
  - b. direct sunlight (P5); and
  - c. adequate *artificial* illumination and avoidance of glare (P6).

Research has revealed a strong relationship between light and human physiology. . . . one of the physiologic responses . . . is the production of vitamin D. . . . It affects body rhythms and psychologic health. . . . Adequate lighting is important . . . to see unsanitary conditions and to prevent injury . . . Improper indoor lighting can also contribute to eyestrain . . . .

4. Protection against excessive noise (P7).

Noise has physiologic impacts aside from the potential to reduce hearing ability. . . . elevated blood pressure; negative cardiovascular effects; increased breathing rates, digestion, and stomach disturbances; ulcers; negative effects on developing fetuses; difficulty sleeping after the noise stops; plus the intensification of the effects of drugs, alcohol, aging, and carbon monoxide. . . . [and cause other adverse effects].

5. Provision of adequate space for exercise and for the play of children (P8).

Healthful housing should include the provision of safe play and exercise areas. Many American neighborhoods are severely deficient, with no area for children to safely play. . . . [no] sidewalks or street lighting, nor are essential services available by foot . . . .

### **Fundamental Psychological Needs (7 Principles)**

6. Provision of:
  - a. adequate privacy for the individual (P9);
  - b. opportunities for normal family life (P10) – and normal community life (P11);
  - c. facilities to make performing household tasks possible without undue physical and mental fatigue (P12);
  - d. facilities for “the maintenance of cleanliness of the dwelling and the person” (P13); and
  - e. “possibilities for reasonable esthetic satisfaction in the home and its surroundings” (P14).
7. “Concordance with prevailing social standards of the local community” (P15).

Privacy is a necessity to most people . . . . Ideally, everyone would have their own rooms . . . . excepting married couples and small children. . . . Bedrooms and bathrooms should be accessible directly from halls or living rooms . . . . crowding can lead to poor school performance in children.”

A wholesome atmosphere requires adequate living room space and adequate space for withdrawal. . . . This . . . . includes easy communication with centers of culture and business . . . .”

### **Protection Against Contagion (8 Principles)**

8. Provision of:
  - a. A safe and sanitary water supply (P16);
  - b. Protection of the water supply system against pollution (P17); and
  - c. Toilet facilities that minimize the danger of transmitting disease (P18).

[Approximately] 42 million Americans (mostly in rural America) get their water from private wells or other small, unregulated water systems. The presence of adequate water, sewer, and plumbing facilities is central to the prevention, reduction, and possible elimination of water-related diseases. . . . Water-related diseases can be organized into four categories:

- *Waterborne* diseases [*i.e.*, those caused by contamination from chemical, human, and animal wastes, such as cholera, typhoid, shigella, polio, meningitis, and hepatitis A and E].
- *Water-based* diseases [*i.e.*, from aquatic organisms that become parasites. These are rare in the U.S.]
- *Water-related vector* diseases [*i.e.*, those linked to vectors that breed and live in/near water; primarily mosquitoes that carry malaria, yellow fever, *etc.* The West Nile virus is a vectorborne disease. In the U.S. in 2003, there were 9,862 human cases of West Nile virus, with 264 deaths.]
- *Water-scarce* diseases [*i.e.*, diseases that flourish where sanitation is poor due to a scarcity of fresh water, including diphtheria, leprosy, tuberculosis. These conditions are essentially absent from the U.S.]

9. Protection against sewage contamination of interior surfaces (P19) – and avoidance of unsanitary conditions near the dwelling (P20).

In 2000 . . . 1.4% of U.S. homes lacked plumbing facilities. . . . The containment of household sewage is instrumental in protecting the public from waterborne and vectorborne diseases. . . .

Nationally, 74.8% of homes are served by a public sewer, with 24.1% served by a septic tank or cesspool, and the remaining 1.1% using other means.”

10. Exclusion of vermin which may play a part in the transmission of disease (P21).

Vermin, such as rodents, have long been linked to property destruction and disease. Integrated pest management, along with proper housing construction, has played a significant role in reducing vermin around the modern home. Proper food storage, rat-proofing construction, and ensuring good sanitation outside the home have served to eliminate or reduce rodent problems in the 21st century home.

11. Provision of facilities for keeping milk and food fresh (“undecomposed”)(P22).

Facilities to properly store milk and food [has] been instrumental in reducing . . . foodborne diseases . . .

12. Provision of sufficient space in sleeping rooms to minimize the danger of infection (P23).

Much improvement has been made in the adequacy of living space for the U.S. family over the last 30 years. . . . Excessive crowding in homes has the potential to increase. . . communicable disease transmission [and] the stress level of occupants . . . .

#### **Protection Against Accidents (7 Principles)<sup>[2]</sup>**

13. Erection of the dwelling with materials and methods to minimize danger of accidents due to collapse of any part of the structure (P24).

14. Control of conditions likely to *cause* fires or promote their spread (P25).

Between 1992 and 2001, an average of 4,266 Americans died annually in fires and nearly 25,000 were injured. . . . The [US] has one of the highest fire death rates in the industrialized world, with 13.4 deaths per million people. At least 80% of all fire deaths occur in residences. . . . Apartment fires most often start in the kitchen . . . .

Cooking is the leading cause of home fires, usually a result of unattended cooking and human error rather than mechanical failure of the cooking units. The leading cause of fire deaths in homes is careless smoking, which can be significantly deterred by smoke alarms and smolder-resistant bedding and upholstered furniture. . . .

Manufactured homes can be susceptible to fires. More than one-fifth of residential fires in these facilities are related to the use of supplemental room heaters, such as wood- and coal-burning stoves, kerosene heaters, gas space-heaters, and electrical heaters. Most fires related to supplemental heating equipment “result from improper installation, maintenance, or use of the appliance.”

15. Provision of adequate facilities for *escape* in the case of fire (P26).

Three key elements can contribute to a safe exit from a home during the threat of fire. The first . . . is a working smoke alarm system. . . . By 1995, 93% of all single-family and multifamily homes, apartments, nursing homes, and dormitories were equipped with alarms. . . .

A second element . . . is a properly installed fire-suppression system. . . . Currently, few homes are protected by residential sprinkler systems. . . . Sprinkler systems can be installed for a reasonable price. These systems can be retrofitted to existing construction . . .

The final element in escaping from a residential fire is having a fire [escape] plan.”

16. Protection against danger of electrical shocks and burns (P27).

Electrical distribution equipment was the third-leading cause of home fires and the second-leading cause of fire deaths in the [U.S.] between 1994 and 1998. . . . 38,300 home electrical fires occurred in 1998, which resulted in 284 deaths, [and] 1,184 injuries . . . .

Electrical fires are one of the leading types of home fires in manufactured homes. . . . [M]any electrical fires in homes are associated with improper installation of electrical devices by do-it-yourselfers.”

17. Protection against gas poisonings (P28).

In 2001 an estimated 130 deaths occurred as a result of CO poisoning from residential sources; this decrease in deaths [down from about 600 in 1998] is related to the increased use of CO detectors. In addition, approximately 10,000 cases of CO-related injuries occur each year.

18. Protection against falls and other mechanical injuries in the home (P29).

The leading causes of home injury deaths in 1998 were falls and poisonings, which accounted for 6,756 and 5,758 deaths, respectively. . . . Overall, falls were the leading cause of nonfatal, unintentional injuries occurring at home and accounted for 5.6 million injuries. . . . 48% of households have windows on the second floor or above, but only 25% have window locks or bars to prevent children from falling out. . . .

19. Protection of the neighborhood against automobile traffic hazards (P30).

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<sup>[1]</sup> The *HH Manual* adds a new Principle #1, “protection from the elements”; and does not discuss APHA Principle #3, “reasonable chemical purity.”

<sup>[2]</sup> The *HH Manual* does not discuss Principle # 24, dwelling construction, or # 30, traffic.