U.S. Army Public Health Command (Provisional)
formerly U.S. Army Center for Health Promotion and Preventive Medicine

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Just the Facts...

Barracks Layout to Prevent Disease Transmission

Why the Risk of Disease Transmission?

Respiratory disease is a major medical problem for military personnel living in close quarters. Crowded conditions are often found at military training barracks, classrooms, dining facilities, tent cities, and deployment staging areas. Close contact coupled with the stress of military operations often puts military personnel at greater risk for respiratory disease than their civilian peers. The highest risk is seen during Basic Combat Training when individuals bring bacteria and viruses from around the world into crowded living conditions. These personnel are typically young and have immune systems that may be depressed from extended periods of physical and emotional stress making them more susceptible to acute respiratory disease.

How are Respiratory Diseases Transmitted?

→ infected people expel viruses when they cough, sneeze or talk

→ droplets are propelled a short distance and can either land on or be breathed in by another person

How to Prevent Transmission?

Individual Measures:

→ covering coughs and sneezes with a tissue or shirt sleeve are effective ways to block infectious droplets and reduce the risk of transmission

→ hand washing has been proven to be the most effective way to prevent transmission, but in the absence of hand washing facilities, instant hand sanitizers are also effective

Leadership's Role:

→ leader involvement is essential to preventing respiratory disease

→ every leader must know and enforce the recommendations to prevent respiratory disease

→ leaders can use administrative control measures to increase space between individuals

→ isolating sick individuals in separate sleeping areas is **critical** to prevent infections from spreading

→ barracks layout recommendations can be implemented while still allowing for the high levels of activity and stress expected in an environment like recruit training

Square Feet per Person

→ current space allocation guidelines set forth in DA Pam 40-11, Preventive Medicine, 22 July 2005, specify a minimum sleeping space allowance of 72 square feet of floor space ***per person*** to lower the risk of disease transmission

→ for example, an open bay that is 90 feet long and 45 feet wide has a total of 4,050 square feet and should hold a maximum of 56 personnel (4050/72 = 56.25). Care must still be taken to ensure that each person receives 72 square feet of floor space (see figure). Stacked bunks require 144 square feet of floor space (72 square feet X 2) if both beds are occupied.

→ all available billeting, including temporary facilities and tents when necessary, should be used to ensure this minimum space allowance

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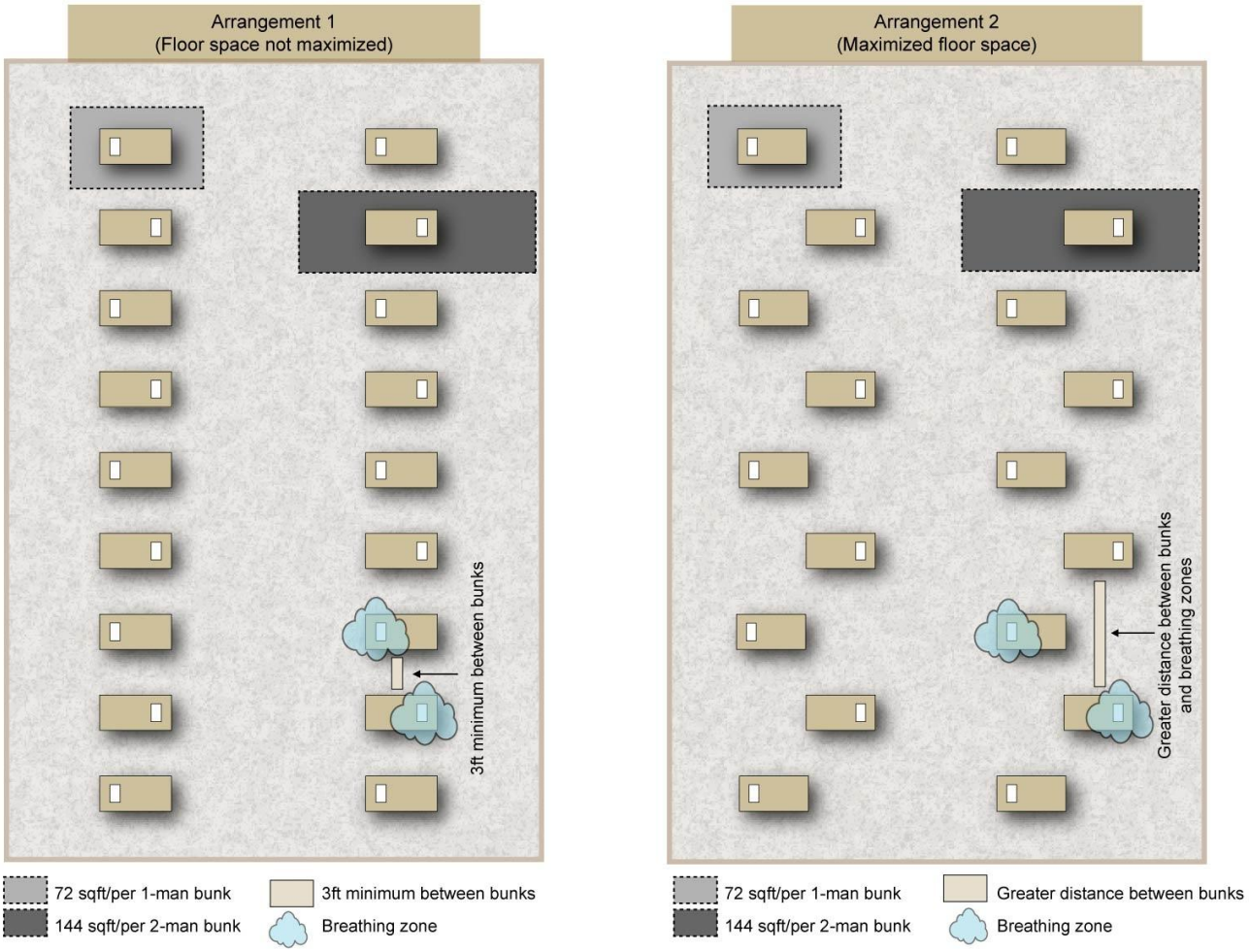
Spacing between Bunks and Head-to-Toe Sleeping

→ leaders should provide at least 3 feet between bunks
→ alternate head and foot positions on adjacent bunks to increase a person's breathing zone (head-to-toe sleeping)
→ maximize available space in the bay or tent (see Arrangement 2 below)
→ a staggered bunk arrangement provides a greater distance between bunks without reducing the total number of bunks in the same area as if the bunks were all aligned
→ do not crowd bunks (or personnel) in one area while leaving large open spaces in other areas
→ if barracks are not at full capacity, tear down excess bunks or place trainees in every other bunk to further increase distance between occupants

Figure (not to scale). Two arrangements are depicted below. "Arrangement 1" is commonly seen at recruit training installations but does not maximize available floor space. A staggered bunk/cot arrangement, as depicted in "Arrangement 2", maximizes available floor space and the distance between bunk/cots while still maintaining egress routes and allowing for command and control.



In the staggered bunk arrangement, (Arrangement 2) the center area is reduced. This area is easily re-established by sliding the inner bunks back in line with the outer bunks during the day and back to maximize sleeping space in the evening. A simple system, such as dots on the floor, can help keep the bunks in line during movement. Not all rooms or bays are represented by the figures above, but the same principles used to maximize floor space can be applied to areas of any shape or size. Respiratory disease is usually spread when an infected person expels droplets onto another person. Cough etiquette, isolation of sick individuals and space between bunks are all important preventive measures to prevent the spread of infectious diseases.