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Epidemiological Measures of Health and Disease

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For an improved version of this topic, see Third Edition (2012) of the book Medical Biostatistics, which has a large number of new topics and expanded discussion. This book available at <http://www.crcpress.com/product/isbn/9781439884140> (list price US\$129.95) or go to amazon.com for discounted price

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by A. Indrayan (indrayan.weebly.com)

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Assessment of the level of health and disease in individuals can be very subjective. Perfect health can seldom be defined, and the meaning of well-being changes from person to person. The subject's own perception also changes from time to time. Health becomes an unattainable ideal in a true sense. This, however, does not distract scientists. Efforts are always made to measure the level of health. The focus, though, remains on lack of health rather than on its presence.

Positive health can be understood as the ability to cope with physical, biological, psychological, and social stress. This can become far too abstract. Yet measurements such as hemoglobin level, high density lipoprotein (HDL), immunity level, vital capacity and pain-bearing capacity can be possibly used to assess positive health. This aspect has remained unexplored and need attention of the researchers. Profile of persons who rarely fall sick and are able to do more work than others while leading enjoyable life can be studied to identify factors that contribute to positive health. It is possible though that psychological factors such as personality profile, absence of stress and carefree attitude contribute more to positive health than physiological parameters.

On the ground, the objective assessment of health is generally done in terms of the usual physiological and pathological parameters for lack of health. Measurements such as heart rate, blood pressure, and respiration rate are always important. All these are basically statistical in nature, and I will come to them later. This section concentrates on some indicators of epidemiological nature although they are also applicable to individuals.

Different measures are used for different age groups. Some of the more commonly used measures are mentioned in this section. These are presented only for the purpose of illustrating

the methodology generally used to measure different aspects of health. The list by no means is exhaustive. Relative merits and demerits of these indicators also are not discussed.

Multiplicity of measures mentioned hereafter in this section for some aspects of health raises the question of the choice. Choose the one that exactly measures the targeted aspect and possesses established reliability and validity. The chosen indicator must be unambiguous and should have biological relevance. If it is simple, inexpensive, easy to implement and less inconvenient to the subjects, consider that a bonus in this age of technological complexity.

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