Nitesh Sharma, Shriya Nerolian Fernandes, N.Gerasimchuk

**MODERN DIAGNOSTICAL METHODS AND THEIR ETHICAL ASSPECTS**

Diagnosis is the identification of the nature and cause of a certain phenomenon. Diagnosis is used in many different [disciplines](https://en.wikipedia.org/wiki/Academic_discipline) with variations in the use of [logics](https://en.wikipedia.org/wiki/Logics), [analytics](https://en.wikipedia.org/wiki/Analytics), and [experience](https://en.wikipedia.org/wiki/Experience) to determine "[cause and effect](https://en.wikipedia.org/wiki/Causality)". In [systems engineering](https://en.wikipedia.org/wiki/Systems_engineering) and [computer science](https://en.wikipedia.org/wiki/Computer_science), it is typically used to determine the causes of symptoms, mitigations, and solutions.Diagnosis is often challenging, because many signs and symptoms are nonspecific. For example, redness of the skin (erythema), by itself, is a sign of many disorders and thus doesn't tell the healthcare professional what is wrong. Thus differential diagnosis, in which several possible explanations are compared and contrasted, must be performed. This involves the correlation of various pieces of information followed by the recognition and differentiation of patterns. Occasionally the process is made easy by a sign or symptom (or a group of several) that is pathognomonic.

There are 4 Methods :1. [CDR - Computerized Assessment System](https://en.wikipedia.org/wiki/CDR_Computerized_Assessment_System)

2. [Differential diagnosis](https://en.wikipedia.org/wiki/Differential_diagnosis) 3. [Medical diagnosis](https://en.wikipedia.org/wiki/Medical_diagnosis) 4. [Retrospective diagnosis](https://en.wikipedia.org/wiki/Retrospective_diagnosis)

The CDR system is a computer based [cognitive testing](https://en.wikipedia.org/wiki/Cognitive_testing) tool, developed to assess both enhancement and impairment of human cognitive performance. The CDR system’s simplicity, sensitivity and specificity make it acceptable to be used in clinical trials with either healthy subjects or diseased patient populations. The CDR system software is loaded onto laptop computers for testing in medical clinics.

Differential diagnosis has four steps.

The physician:

1. Gathers all information about the patient and creates a symptoms list. The list can be in writing or in the physician's head, as long as they make a list.

2. Lists all possible causes (*candidate conditions*) for the symptoms. Again, this can be in writing or in the physician's head but it must be done.

3. Prioritizes the list by placing the most urgently dangerous possible causes at the top of the list.

4. Rules out or treats possible causes, beginning with the most urgently dangerous condition and working down the list. *Rule out*—practically—means use tests and other scientific methods to determine that a candidate condition has a clinically negligible probability of being the cause.

Medical diagnosis (abbreviated DS or Dx) is the process of determining which [disease](https://en.wikipedia.org/wiki/Disease) or condition explains a person's[symptoms](https://en.wikipedia.org/wiki/Symptom) and [signs](https://en.wikipedia.org/wiki/Medical_sign). It is most often referred to as diagnosis with the [medical](https://en.wikipedia.org/wiki/Medicine) context being implicit. The information required for diagnosis is typically collected from a [history](https://en.wikipedia.org/wiki/Medical_history) and [physical examination](https://en.wikipedia.org/wiki/Physical_examination) of the person seeking medical care. Often, one or more diagnostic procedures, such as [diagnostic tests](https://en.wikipedia.org/wiki/Diagnostic_test), are also done during the process.