Medical Research

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Finding the Best Information

In addition to using their training and knowledge, doctors often use information from published medical research to help them make informed decisions about a patient's diagnosis or care. There are many good sources of information, but the most current information is usually found in medical journals.

Doctors read articles in medical journals to keep up with current medical information and discoveries. At times, they must hunt through the many journals and articles available to find information on a condition or treatment for one of their patients. Fortunately, there are computerized databases they can access that can help them more easily find the articles they need.

An article in the September 13, 2000, issue of *JAMA* discusses the best way to use information from medical journals to help diagnose and treat patients. **Evidence-based medicine** is an approach to practicing medicine that is based on using current medical research to help with medical decisions. The article stresses that information gathering is only the beginning of the process and the doctor must apply the knowledge obtained from medical research, along with other information, to the unique situation of each of his or her individual patients.

RANDOMIZED CONTROLLED CLINICAL TRIALS:

Randomized controlled clinical trials are the best way to objectively assess treatments. Elements of these trials include:

- **Informed Consent** – potential participants are informed about the key facts and procedures of the study and then decide whether or not to give their consent to participate in the study
- **Randomization** – participants receive treatments in the study by random assignment, somewhat like flipping a coin—each participant has an equal chance of being in the treatment group or being in the control group. This assures that differences in outcomes are due to the treatments alone and not other factors.
- **Control Group** – the control group is used to measure the effectiveness of the treatment by comparison with the group randomized to receive a treatment (the "treatment group"). The control group may receive a standard treatment while the treatment group receives a new treatment, or in some studies people in the control group receive an inactive substitute (for example, a pill with no pharmaceutical effects) for the treatment called a *placebo*
- **Blinding** – in most studies the participants do not know whether they have been randomized to the treatment or the control group; this is referred to as "*blinding*." Studies in which neither the participants nor researchers know who has been randomized to which group until the end of the study are called "*double-blind*" studies. This is the most objective way to assess the treatments.

TYPES OF RESEARCH:

- **Clinical trials** – Studies that measure the effectiveness and safety of treatments or interventions, such as drugs or treatment programs; includes randomized controlled clinical trials (*see below left*)
- **Epidemiologic studies** – Studies that look at the percentage of people who are affected by a particular disease or occurrence
- **Meta-analyses** – studies that combine the results of individual studies to get an overall view of the effectiveness of a treatment

FINDING INFORMATION ABOUT CURRENT MEDICAL RESEARCH:

The main source of information for searching for articles in English-language medical journals is MEDLINE, which is a database maintained by the U.S. National Library of Medicine.

You may have access to MEDLINE through a local medical library or the Internet (see Web site information under "For More Information"). You might need help from a librarian to search the MEDLINE database effectively. Web sites maintained by reputable organizations such as government agencies and medical societies are also good sources for medical information.

FOR MORE INFORMATION:

- ClinicalTrials.gov
  Service of the National Institutes of Health
  http://clinicaltrials.gov/ct/gui/
- U.S. National Library of Medicine
  MEDLINE Plus Health Information
  http://www.nlm.nih.gov/medlineplus/

INFORM YOURSELF:

To find this and previous *JAMA* Patient Pages, check out the AMA's Web site at www.ama-assn.org/consumer. A *JAMA* Patient Page on medical research was published on July 15, 1998.

Additional Sources: National Institutes of Health, National Library of Medicine, Food and Drug Administration, National Cancer Institute

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