



## Volume 12

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## Medicine and Magic

### TAKING OUR PULSE

In a previous Medigram (Vol 7, Nov 2014), we explored the definition and process of evidence-based medicine, beginning with well-designed research studies, filtered through expert consensus-driven evaluation and peer review, and then incorporated into the development of referenced clinical guidelines.

The process can be long and laborious, but the rigor of this approach can help to ensure that medical treatment is efficacious and cost-effective.

So can we be assured that all medical treatment is evidence-based, and that current clinical guidelines, when available, are faithfully utilized by physicians? A book authored by two academic physicians in 2011 addresses this concern. Drs. Nash and Kumar write:

We could accurately say, “Half of what physicians do is wrong,” or “Less than 20 percent of what physicians do has solid research to support it.” Although these claims sound absurd, they are solidly supported by research that is largely agreed upon by experts.

The plain fact is that many clinical decisions made by physicians appear to be arbitrary, uncertain and variable. Reams of research point to the same finding: physicians looking at the same thing will disagree with each other, or even with themselves, from 10 percent to 50 percent of the time during virtually every aspect of the medical-care process – from taking a medical history to doing a physical examination, reading a laboratory test, performing a pathological diagnosis and recommending a treatment. Physician judgment is highly variable.

McGlynn and her colleagues (at the Rand Center for Research on Quality in Health Care) found something shocking: physicians get it right about 55 percent of the time across all medical conditions. In other words, patients receive recommended care only about 55 percent of the time, on average. It doesn't matter whether that care is acute (to treat current illnesses), chronic (to treat and manage conditions that cause recurring illnesses, like diabetes and asthma) or preventive (to avert acute episodes like heart attack and stroke).

## JUST WHAT THE DOCTOR ORDERED

This problem can be exacerbated by a tendency we all share to search for, and adopt, new technology, medications, and procedures before they have been proven to be safe and useful, putting faith ahead of facts. Drs. Leff and Finucane describe these innovations with the highly technical term "gizmos":

It seems that "gizmo idolatry" now exists in the practice of medicine. "Gizmo" is defined by the American Heritage Dictionary as "a mechanical device or part whose name is forgotten or unknown; a gadget." In this article, gizmo is used to refer to a mechanical device or procedure for which the clinical benefit in a specific clinical context is not clearly established, and gizmo idolatry refers to the general implicit conviction that a more technological approach is intrinsically better than one that is less technological unless, or perhaps even if, there is strong evidence to the contrary. The credulous acceptance and rapid diffusion of frontal lobotomies in the 1930s and 1940s led to great harm, and to a Nobel Prize for Egas Moniz in 1949 "for his discovery of the therapeutic value of leucotomy in certain psychoses." Autologous bone marrow transplantation for breast cancer is a more recent example of gizmo idolatry.

The cutting edge or first on the block use of a gizmo can bestow on the physician a mantle of expertise, competence, and preeminence. Off-pump coronary artery bypass graft surgery, computed tomographic detection of coronary artery calcification, or positron emission tomographic scans to diagnose Alzheimer disease may dazzle, even if there is little or no evidence that the patient will benefit.

Gizmo idolatry can cause harm to patients, threaten the advancement of medical science and health systems, and erode professionalism.

Gizmo idolatry describes the willingness to accept, in fact to prefer, unproven, technologically oriented medical measures. Several forces contribute to and encourage this tendency. Great burdens may result. Clinicians, patients, payers, and policy makers should be mindful of the urge to use gizmos. Purveyors should proceed responsibly, limiting promotional efforts until data about meaningful benefit to patients are developed. Payers should be stringent in their decisions to cover expensive and unproven treatments. Clinicians and patients should resist the clamor for the new and fancy. Finally, all stakeholders should encourage and reward diligent bedside care for all who need it.

Broadspire's Medical department continually produces, and annually updates a set of medical advisories that address both old and emerging medical services, indicating whether the subject service can be considered efficacious or whether it should be considered of unproven benefit ("experimental or investigative"). This content is located within the Medical department database and is available to all Broadspire staff.

The following listed services are among those currently not recommended for authorization and reimbursement due to lack of clinical evidence of value. Each document provides a comprehensive review of the service, as well as research findings compiled from the scientific literature and available guidelines. Utilization management and/or peer review should be engaged to review any request for these services.

- Adhesiolysis/Epidural Lysis of Adhesions/Percutaneous Epidural Adhesiolysis
- Artificial Disc Replacement

- Blood Product Injections (Platelet Rich Plasma Injection [PRP], Autologous Blood Injection, Bone Marrow Plasma Injection)
- Cold Laser/Low-Level Laser Therapy (LLLT)
- Current Perception Threshold Testing (CPT)/Sensory Nerve Conduction Threshold Test (SNCT)/Neurometer/Quantitative Sensory Testing (QST)
- Digital Radiographic Imaging and Reconstruction Analysis
- Discography
- Electro-Acuscope/Myopulse
- Electroceutical Therapy
- Electrothermal Shrinkage
- Facet Rhizotomy/Radiofrequency Lesioning
- H-Wave Stimulation
- Interferential Stimulation (IFS)
- Magnetic Resonance Neurography (MRN)
- Microcurrent Stimulation Devices (MENS)
- Minimally Invasive Spinal Disk Procedures
- Non-Surgical Spinal Decompression [VAX-D (Vertebral Axial Decompression), DRX9000/Powered Traction Devices]
- Percutaneous Electrical Nerve Stimulation (PENS)/Percutaneous Neuromodulation Therapy (PNT)
- Prolotherapy
- Pulsed Electrical Stimulation/High-Frequency Pulsed Electromagnetic Stimulation/Galvanic Stimulation Devices
- Sympathetic Therapy (Dynatron STS)
- Therapeutic Magnetic Resonance (TMR)
- Thermography (Temperature Gradient Study)
- Transcranial Magnetic Stimulation (TMS) and Cranial Electrical Stimulation (CES)
- Vertebroplasty

### CIRCULATING IN THE PRESS

Educating the public about best medical practices is an admirable goal. However, providing unsound information to consumers is worse than providing no information at all. A recent study in the British Medical Journal evaluated the quality of advice provided by two internationally syndicated talk shows, one of which was The Dr. Oz Show.

The investigators analyzed 40 episodes of the show and catalogued all the medical recommendations that were made.

Unfortunately, they found that less than half of these recommendations were supported by clinical evidence, and urged caution in accepting talk show information at face value.

For recommendations in *The Dr. Oz Show*, evidence supported 46%, contradicted 15%, and was not found for 39%.

Recommendations made on medical talk shows often lack adequate information on specific benefits or the magnitude of the effects of these benefits. Approximately half of the recommendations have either no evidence or are contradicted by the best available evidence.

Potential conflicts of interest are rarely addressed. The public should be skeptical about recommendations made on medical talk shows.

**REFERENCES:**

- 1) Televised medical talk shows – what they recommend and the evidence to support their recommendations: a prospective observational study. Christina Korownyk, M.D., et al, British Medical Journal, 2014;349:g7346.
- 2) Gizmo Idolatry. Leff, et al, JAMA, April 16, 2008-Vol 299, No. 15 (Reprinted).
- 3) Health Care Myth Busters: Is There a High Degree of Scientific Certainty in Modern Medicine? Kumar, et al, March 25, 2011, Scientific American.