Guest Editorial:

Research and its Distortions

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This issue contains a broad-based critique of a representative swath of published medical research. The problems described are not rare, and the practical implications are not trivial.

Physicians are the "purchasing agents" for our patients. We advise them on what is reasonable to try for relief or for prevention, but the cost and outcome are theirs to bear. While patients can now access data about their problems, they are unlikely to have a grasp of the context and limitations of the findings.

Meanwhile, they are bombarded with advertisements and other inducements for treatments. Physicians cannot be ignorant consumers of research and expect to help patients in this noisy marketplace. Our stock in trade leans now more heavily on interpretation and judgment than on mere information.

Medical research commonly produces disease-oriented evidence, known to some as "DOE." The DOE research question is framed: "If all other things are equal, and if the patient is relatively free of the clutter of other morbidities, and if we are rather sure that the patient takes the treatment, is the disease relieved or averted?"

In real life, the treatment is not provided free, all other things are not equal, the patient may not stick with the treatment, and there are comorbidities. Further, other causes of morbidity and mortality can submerge any benefit from the one specific result such that there is no good net outcome for the patient.

Research that takes into account these complications is known to some as patient-oriented, evidence-based medicine, or "POEM." POEMs try to answer the question: "Taking into account a wider array of measures and conditions, do patients experience a net benefit from the treatment?" It is not likely to be considered a net benefit to avert a fatal heart attack, only to be taken down at about the same time by a cancer. The option of dramatically reversing your fresh thrombotic stroke with a thrombolytic drug is less attractive if you simultaneously increase your risk of a catastrophic hemorrhagic stroke by about the same amount.

Another distortion in research is the vast number of people sorted through to find candidates for your treatment. A recent study of the benefits of using impermeable bedcovers to reduce mite allergen exposure in asthma offers an example.[1]

More than 21,000 patients were invited to participate. Most were not interested. Others were screened out because of ineligibility according to the protocol. Some failed a "run-in phase." About 1,100 were randomized, and fewer than 900 made it through to the end of the study. In real life practice, sorting through those who will comply–part of the utility of a "run-in phase"–who qualify medically, and who are interested, is not a cost-free chore. The time, effort, and cost invested in finding suitable patients for an intervention is subtracted sometimes from more beneficial pursuits with those same patients. Research focusing on the disease will understate these costs.

Listening to a product representative and reading an abstract and discussion section are not sufficient to do our task properly. There is financial and intellectual pain involved in getting an understanding of a matter. Some things cannot be made simple enough for adequate capture in a couple of bar graphs that a salesperson flashes on a screen.

There is a line in the classic fairy tale, "The Princess Bride": "Life is pain, Highness. Anyone who says differently is selling something." A distortion in selling is inevitable. Our job as physicians is to reduce or balance that distortion. Bias in reporting of studies, combined with physician inattentiveness to it, and a contorted third-party payment system, has produced an explosion in demand for prescriptions and health screenings. The net benefit of many of these is nil, but the related rise in costs has pushed us to the rim of rationing medical care by means of a dreadful political regulatory process.

In centrally controlled rationing, the judgment about cost and benefit on a good day will be made on a herd mentality basis by those who do not know the patient or the situation. On a bad day, the judgment will be made on grounds of politics or in whose congressional district the drug is manufactured. There will be little leeway for risk-to-benefit judgment between an informed physician and a particular patient. Disease-oriented algorithms will rule.

The innate liberty of a patient and physician to sort through the information and arrange a mutually satisfactory contract for treatment will be at risk. If this scenario actually arrives–and pieces are already in operation–it will be partly because physicians haven't been willing to examine research claims critically.

Research is sometimes crafted to produce predetermined results, and/or spin is applied if the results are weak. In *A Man for All Seasons,* Sir Thomas More looks at the ambitious young man whose testimony against him has been suborned by the reward of the office of attorney general of Wales.

"It profits a man nothing to give his soul for the whole world," says More, "but *for Wales?*"

Some future generation may look back at us and marvel, "They traded away their liberty of contract for *statin drugs*?"

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REFERENCE

[1] Woodcock A, Forster L, Matthews L, et al. Control of exposure to mite allergen and allergen-impermeable bed covers for adults with asthma. *New Engl J Med* 2003;349:225-236.