Clinical paradigms revisited

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ABSTRACT

- Despite astounding advances in scientific knowledge and technological capabilities, modern medicine is not free of significant problems.
- A persistent high rate of diagnostic errors, the prevalence of medical (iatrogenic) harm and the growing demand for complementary and alternative medicine indicate an urgent need for improvement.
- An important step is a return to three quintessential clinical paradigms that have become neglected with the advent of high-technology medicine: the need to emphasise prevention and early, presymptomatic diagnosis; the crucial role in decision making of skilful history taking and examination, backed by evidence; and enhanced attention to patient autonomy and emotional factors.
- Possible reasons for the current neglect of these *Altneuparadigms* ("old–new" paradigms) are considered, and techniques for restoring their primacy in medicine are discussed.

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The outstanding advances in medical knowledge and technological capabilities over recent decades are widely recognised. However, there are serious and ubiquitous problems that undermine these advances. The cost of modern medicine is escalating and becoming difficult to sustain.[1] Gatekeeping, rationing and administrative interference are some of the responses to this problem, but they increasingly affect medical decisions and the patient–physician relationship. Another unexpected finding is that, despite the new diagnostic technologies, autopsy studies continue to reveal significant rates of misdiagnosis: an important and unsuspected diagnosis is still being found in about 30% of autopsies.[2] Thus, high-technology medicine is not as infallible as we tend to believe. In addition, there is a high incidence of serious adverse drug reactions, medical mistakes and other adverse outcomes, both in hospitals and in the community: "medical harm" affects over 10% of patients, is persistent (although often preventable) and commonly severe.[3] These problems may indicate important flaws in current medical care and the neglect of three classical paradigms with the advent of high-tech medicine.

The first paradigm

Prevention of disease is an old concept that has become better founded and much more effective with advances in scientific knowledge over the 20th century. Nevertheless, it is being practised to just a fraction of its full capacity.[4] Measures that can radically improve patient outcomes have been identified across a wide array of diagnoses that typically afford ample time for early diagnosis and intervention. However, physicians' compliance is often far below par. Missed opportunities are strikingly abundant in both primary care and hospital care.[4-6] Many patients are under-screened, under-vaccinated, under-counselled and undertreated, and the underuse of simple, life-saving interventions remains extremely prevalent.[1,4-6] For example, in a study of people with diabetes in the United Kingdom and Ireland, about 85% of recently enrolled patients were not being given aspirin;[7] and, in another study of patients who had recently had a myocardial infarction, 79% were not being given β-blockers.[8] Resources continue to be drained from the health care budget to treat advanced diseases with poor prognosis, even though in many cases the diseases could have been delayed, attenuated or altogether prevented.[9]

While continuing their traditional role of responding to patients' symptoms (symptom-driven medicine), physicians should assume a highly active role in pre-emptive strikes against disease, stressing its early recognition in the asymptomatic phase. A broad physician-initiated prevention strategy aimed at achieving optimal outcomes is the first paradigm.

The second paradigm

The clinician's art of obtaining a good history, performing a skilful examination and making sense of simple clinical facts has substantially receded in recent times.[10] With the increasing availability of powerful diagnostic instruments, physicians have become distanced from both their patients and the basic clinical data. Today, tests and procedures are considered infallible and ordered in increasing numbers — often almost blindly, repeatedly and sometimes even without examining the patient. Thus, many are redundant, inconclusive or misleading, in addition to being unnecessarily expensive. Uncertainty, false positive findings and fear of lawsuits often beget more tests or procedures, and may trigger dangerous cascades. This testing-dominated approach undermines the value of clinical skills, which tend to become underestimated, underused — and finally lost.

In contrast with technology-based testing, taking a history and conducting an examination are simple, safe, cheap, immediately accessible and remarkably effective.[2,11-13] These simple bedside methods are unique in detecting significant findings and clues, and lead to the correct diagnosis 70%–80% of the time.[11] Even if not producing an immediate diagnosis, they are still crucial for the selection and interpretation of sophisticated tests and for ruling out diagnostic hypotheses. The history- and examination-based clinical encounter is also the only way to know and care for the patient, to obtain the patient's trust and compliance, and to create the special bond essential to healing.

To make the most of the data collected, electronic databases that are vast, up-to-date and easily accessible are now available close to the bedside.[11,14] Consulting them to support evidence-based decision making is certainly superior to using personal memory and anecdotal experience alone. Acknowledging the quintessential role of simple clinical methods and becoming proficient in their use, with the back-up of evidence-based knowledge, is the second paradigm.

The third paradigm

Current medicine is predominantly biologically focused and disease-oriented. It should also be patient-centred and "psychosocial".[15,16] However, physicians often do poorly in terms of

involving patients in decision making or responding to their emotional concerns. As an example, in a UK study of general practice consultations, less than 10% of doctors' decisions were completely informed, and only 11% of patients said they were able to voice all their concerns during a consultation.[17] Remarkably, in a US study of physician–patient interactions, physicians redirected their patients' initial statements after a mean of 23 seconds, preventing them from completely expressing their concerns 82% of the time.[18] In another US study, physicians responded to patients' emotional clues in only one in five cases.[19]

Informing the patient, improving health literacy and sharing decision making are increasingly recognised as vital components of patient autonomy that are integral to proper health care. Most people strongly want to be involved with their care plans, and, if they do, are likely to be more satisfied and more compliant, to have a lesser symptom burden, and to use fewer resources.[15] Scientific disease management must therefore be complemented by the ability to understand patients, respect their preferences and provide empathy, encouragement and hope.

Moreover, identifying and addressing the emotional aspects of illness may improve not only quality of life and compliance, but even the biological course of illness.[20] A truly patient-centred approach that involves patients in decision making and is sensitive and responsive to their emotional concerns is the third paradigm.

Why are the clinical paradigms often disregarded?

Why are these clinical paradigms so often disregarded, despite their many proven merits and wide acclaim? Physicians' attitudes, education and economic pressures seem to be the predominant culprits. Several leaders in medicine have observed that physicians have become "fascinated", "preoccupied" and even "obsessed" with their new instruments. These are perceived as more objective, modern, sophisticated, "scientific" and accurate than clinical methods.[11,21] Among their attractions, high-tech medical tools not only reduce physicians' uncertainty and fears, but are also lucrative, add to the doctor's prestige, answer demand, and can be easily arranged with little investment of time or emotion on the doctor's part.[11,22] Their choice even satisfies our inherent bias towards action and towards making use of a new available technology, as well as conforming to our high-tech, high-pressure and impersonal society.

As a result, tests and procedures are ordered excessively,[22] and many physicians have distanced themselves from the bedside and even, to some degree, from their patients. The conference room has largely replaced the bedside as the arena of teaching.[21] Staff are selected for their excellence in bench research, while clinical acumen is under-appreciated and under-rewarded.[11]

Have good clinician role models become an endangered species? The curricula of many medical schools allocate relatively little time to training in interviewing, hands-on clinical skills and the humanistic components of the medical encounter.[16,21] Instruction in these areas receives scant attention in residencies as well.[10] Moreover, licensing and board examinations are often based on theoretical, written questions, with no human contact involved.[23] There are numerous examples of the deleterious effects of these changes on current physicians' attitudes and abilities.[10,12,18,19]

Shrinking resources and the shift of medical care to the ambulatory setting have added to the problem. In an outpatient clinic, presentations are less well defined and clinical skills are necessary to determine optimal care.[21] Admitted patients are now older and much sicker — yet, paradoxically, their stays are getting shorter. The managed care system also urges doctors to see patients as briefly as possible.[24] Rapid throughput is hardly conducive to proper history taking, examination and patient-centred communication, not to mention preventive care. Side by side with time constraints and the lack of incentives for exercising traditional clinical skills, new diagnostic technologies are vigorously promoted by the large companies that supply them, while simple, effective, low-tech, low-cost methods and interventions are de-emphasised and may not even be reimbursed.

To resurrect our paradigms, all these barriers must be considered and overcome, and the literature on changing physicians' behaviour[25] must be consulted. This promises to be a hard task, as clinical practice, like any ingrained behaviour, is hard to alter.

Critical pathways suggested to be effective in bringing about a change towards more clinical, humanistic and preventive paradigms

Multifactorial approach

To succeed in bringing about change, intervention must proceed in more ways than one (the more the better).

Education

To be as effective as possible, education and training (eg, in communication, clinical examination and preventive medicine) need to start early (at medical school), be continuous (throughout residency training and incorporated into continuing medical education programs), involve good role models, and be supported by appropriate exams and evaluations (licensing).

Admission

In addition to scholarly excellence, medical school admission procedures should evaluate and favour baseline personal qualities of applicants, such as "narrative competence",* communication skills, sensitivity, empathy and compassion.

Remuneration

A system (financial or otherwise) for rewarding excellence in clinical, humanistic and preventive medicine may be a strong catalyst for change. (Importantly, clinicians who are good role models should be included in the rewards system.)

Reminders

Reminders (in computerised or some other form) can be extremely helpful in improving performance.

Research

Continued research effort in this area (including establishing the best methods of implementing strategies) is essential for filling gaps in our knowledge.

Strategy

Using organisational strategies, including audit and feedback, may considerably facilitate change.

* "Narrative competence" is the ability to acknowledge, absorb, interpret and act on the stories and plights of others.[16] ◆

Strategies for change

Strategies that appear promising in mediating the required changes in clinical practice are summarised in the Box.

Physician education and training is the cornerstone of effective implementation. Several areas that deserve special emphasis include communication skills and narrative competence (see Box);[16] the art and science of clinical examination; rational test selection and

interpretation; time management techniques to accomplish more in a limited time; and primary prevention skills. To be more successful, these elements need to be incorporated into all stages of medical education — medical school, residency training and continuing medical education (CME) programs.[10] In addition, emphasising bedside teaching with role models and constantly assessing hands-on performance by evaluations, group discussions, licensing exams and CME credits are all likely to support a re-emergence of the *Altneuparadigms* ("old–new" paradigms) discussed.[21,23]

At the same time, the process of admission to medical schools could be modified. Along with scholarly achievement, medical schools that identify and admit students who show compassion and possess superior interpersonal skills will, in all likelihood, produce better physicians.[16] A system of rewarding top clinical performers (in thrifty use of tests) and promoters of preventive medicine is already being tried in the UK and may prove to be highly advantageous.[26] Academic recognition and promotion of clinical role models[21] are also urgently needed and can be incorporated into the current effort to revitalise academic medicine.

Using informatics technology, such as reminders (especially useful in ensuring optimal preventive medicine and minimising redundant test ordering[6,27,28]), is decidedly promising and time-saving. It can also support evidence-based decision making at the bedside.[14]

Change is most likely to occur within an organisation as part of a systematic strategy.[25] As physicians work in organisations, improving the quality of care requires removal of organisational barriers and development of techniques within the organisation to target different essential aspects of medical care (such as preventive measures).[6,27] Forwarding audits and summaries of performance to providers may be of value, although current evidence on whether this changes physicians' behaviour is mixed, with some studies suggesting a relatively small effect.[25] Since even the best studied interventions are still based on meagre evidence, more research is needed. Further research may also reveal whether these interventions have the potential to ultimately bring about significant cost containment in health care.[22] Already it is clear that efforts to change current practice patterns are likely to be more successful if two or more effective approaches are used in combination.[25,27] In a UK survey of 100 general practitioners and consultants about the factors associated with changes in their clinical practice,[29] an average of three reasons per change was cited.

In conclusion, to make the most of the powerful new medical technologies, special care must be taken not to skip the profound basic value of clinical skills and methods, patient-centred, humanistic medicine and effective primary prevention.

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Competing interests

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