



# Of lamp posts, keys, and fabled drunkards: A perspectival tale of 4 guidelines

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## Abstract

**Background:** Evidence-based medicine is the application of research findings to inform individual clinical decisions. There is a tension—both philosophical and practical—between the average result from a population study and the circumstances and needs of an individual patient. This personal account of “evidence-based” trauma care illustrates and explores this tension.

**The case:** The author, a keen athlete, describes her experience of a high-impact cycle accident that led to limb fractures (which were diagnosed and treated according to evidence-based guidelines) and also an occult injury to the cervical spine (which was not diagnosed at the time). Some evidence-based guidelines are reviewed and applied to the case.

The clinical record described the cycle accident as a “fall.” Initial assessment directed the clinicians’ gaze to the obvious injuries, whose treatment was straightforward. On admission, the patient (aged 55 years at the time) was offered “falls prevention” via a guideline-based checklist. Several months later, neurological sequelae indicated possible damage to the cervical spine. But the NICE Guideline recommending cervical spine imaging in cases of high-impact trauma had not been considered—perhaps because the clinical narrative had been prematurely assigned to the script of “older person with fall.” Furthermore, the author, who was (appropriately) treated with neurosurgery, was surprised at the response of clinical colleagues, based on application of an irrelevant section of a guideline, that her cervical discectomy was “nonevidence based.” Nonsteroidal anti-inflammatory drugs for postoperative pain were indicated in *this* patient even though they were not recommended for the *average* patient.

**Conclusion:** As Sir John Grimley Evans’ warned, we should avoid using evidence-based guidelines in the manner of the fabled drunkard who searched under the lamp post for his key because that was where the light was, even though he knew he had lost his key somewhere else.

## KEYWORDS

auto-ethnography, evidence-based medicine, guidelines, narrative, rationality, reason

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## 1 | INTRODUCTION

I owe my life to evidence-based medicine (EBM),<sup>1</sup> but that is not the story I want to tell in this article. Here, I want to tell a more critical story—of how the assiduous application of “good” evidence-based guidelines can sometimes result in a “bad” patient experience. My reflections are not intended as criticism of the particular doctors who treated me. They are pitched at a much wider audience: each and all of us who seek to apply evidence-based guidelines to individual patients.

Evidence-based medicine saves lives, but it is not perfect.<sup>2</sup> Valkenburg et al distinguish between limits to EBM that might someday be overcome by more research (either methodological or empirical) and more philosophical limits that are inherent to EBM's recommended approach.<sup>3</sup> The latter category, they argue, covers 2 main issues: first, that EBM standardizes the patient and second, that EBM standardizes moral considerations.

Evidence-based medicine standardizes the patient because (for example) evidence-based guidelines are based largely on findings from randomized controlled trials (RCTs). Conceptually speaking, RCTs are simple (indeed, somewhat crude) experiments: take a sample of individuals who meet particular inclusion criteria, allocate them at random to intervention or control arms, follow through to a predefined primary endpoint, and assess whether differences between the 2 arms are both clinically and statistically significant. The result, if definitive, can inform a recommendation in a guideline. Such a recommendation states (effectively) that, *on average*, people meeting inclusion criteria XYZ (and ignoring people meeting exclusion criteria PQR) will gain significant benefit from the intervention tested, compared with whatever was offered to those in the control arm. It does not (indeed, it *cannot*) mean that every individual meeting the inclusion criteria of the trial will benefit from the intervention.<sup>4</sup>

Evidence-based medicine standardizes moral considerations because responsibility for the case-based moral question that drives every clinical decision (“what is the best thing to do for *this* patient, in *these* circumstances?”) is, at least in part, removed from the clinician and assigned to the processes and procedures inscribed in an evidence-based guideline or recommendation.

The consequence of standardizing both the patient and the moral considerations of how to manage him or her means that (a) patients—who come in all shapes and sizes and with a vast range of co-morbidities, sociocultural influences, and personal idiosyncrasies—are wrongly assumed to conform to the “ideal type” patient around which the trial was designed and (b) the clinician is placed under powerful but clandestine *moral* pressure to align the management of *this* patient with the management of the ideal type.

An evidence-based guideline is rarely based on a single RCT. It is the product of a complex and laborious process of identifying, reviewing, and collating both primary evidence and systematic reviews (and most especially, meta-analyses and mega-trials).<sup>5</sup> The development of a new guideline, or the updating of an existing one, generally requires the convening of a panel of experts (clinical, academic, and—these days—1 or 2 “experts by experience” previously known as patients) whose credentials and conflicts of interest are carefully examined to ensure they are both capable and dispassionate.

Drawing on the French philosopher Bruno Latour, Valkenburg et al highlight how the highly systematic and meticulously policed generation of evidence-based guidelines has the effect of turning particular scientific findings into “facts.” They observe that

*... a fact is developed following a certain path. First there is the inspiration to a new claim. The scientist starts with a large amount of existing texts. They are shaped as schoolbooks, articles, results from experiments etc. etc. These texts form the starting point for a scientist. He [sic] uses them, and reorganises them in a new fashion. He may cite them, stimulate their (re)publication, discuss them in seminars etc. etc. The scientist uses the texts to underpin a claim he wants to make. He actually builds a complex network around his claim, in order to provide it with solid ground. In this network, the function of a text may be altered. What, for example, previously had been presented as a surmise, may now be presented as an undisputed fact. (page 465)<sup>3</sup>*

The “facts” in guidelines are regularly disputed of course, but there is more than a grain of truth in the claim that the effort, expense, and apparent rigour of the guideline development process place the clinician under substantial pressure to adhere to them.

Real-world clinicians are often rightly cautious of the “facts” in evidence-based guidelines, since the guideline development process and its documentation tend to generate a sanitized (and misleadingly clear-cut) account of how particular items of evidence and/or particular caveats were either included in, or excluded from, the guideline. As Kelly and Moore have observed:

*The principles of the elimination of the possibility of bias in the hierarchy of evidence, of the rule-driven principles of guideline development and appraisal are based on an ideal version of the scientific method, which owe more to the logical precepts of the a priori relations of ideas than they do to messy empirical observation. (page 10)<sup>6</sup>*

Before using a personal case study to illustrate the pickle that can result from uncritical adherence to evidence-based guidelines, I want to introduce a third philosophical limitation of EBM, which is a consequence of the 2 limitations described above. Because of its reliance on population-derived evidence, EBM drives (indeed, requires) the clinician to reason *from the general to the particular*, which cuts across traditional clinical assessment and management (which runs from the particular to the general).

To understand traditional clinical reasoning, we need to go back to an era before EBM became the norm. Back in 1982, Jerome Kassirer and colleagues published an article entitled “Toward a Theory of Clinical Reasoning.”<sup>7</sup> In it, they reproduce a transcript of a discussion between one of them (“experimenter,” E) and a doctor-subject (S), about a hypothetical patient (page 254)<sup>7</sup>:

E: This is a 57-year-old admitted to the hospital with the chief complaint of nausea, vomiting, abdominal pain, and frequency of urination.

S: First I'm going to ask some questions about the character of her urinary stream because I'm thinking in terms of infection of her urinary tract. Did the patient notice any blood in her urine?

E: No, she didn't.

S: That she didn't have gross hematuria makes me turn away from one possibility—that she might have passed a stone in association with infection. She might have had a hemorrhagic cystitis but that makes it

unlikely, just at first cut. You said she had frequency—did she have pain on urination? I'm asking that in terms of also inflammation of the bladder.

E: She did complain of some burning on urination.

S: Now again continuing along the infection line, I'm going to ask whether she had a fever just in terms of general infection.

This transcript illustrates how, in analysing an (albeit hypothetical) case, the traditional clinician first asks a question *about the patient* and only then considers what evidence from the literature may be relevant. When one possible diagnosis does not match, the clinician returns to seek more information *about the patient*—thus reasoning from the particular to the general (“the patient has characteristic X; could it be illness Y?”).

This kind of reasoning still occurs in clinical practice. But my own experience as a patient suggests that it now receives far less attention from clinicians, whose primary focus now tends to be assigning their patient to a particular guideline, after which management will be more or less protocol based. As early as 1998, Mark Tonelli was moved to comment that:

... in EBM, the individuality of patients tends to be devalued, the focus of clinical practice is subtly shifted away from the care of individuals toward the care of populations, and the complex nature of sound clinical judgement is not fully appreciated.<sup>8</sup>

More recently, Engebretsen et al<sup>9</sup> summarized the literature critiquing EBM's lack of engagement with the need to *individualize* assessment and diagnosis. Drawing on Lonergan, they remind us that the process of clinical inquiry is a complex process of interpretation, comprising 4 overlapping phases: (a) collecting sensations and observations (“something that calls for explanation”)—what we might call *data*; (b) interpreting those data (asking “what could this be?”)—and leading, hopefully, to *understanding*; (c) weighing up competing interpretations by a process of *judgement*; and (d) choosing how to act (by asking “what is the right thing to do?”)—a process of *deliberation*. This individual-to-general reasoning, these authors argue, should be reflexive and informed by scientific evidence—but the latter can never replace the former.

In the remainder of this paper, I describe a personal experience to illustrate the dangers of replacing the sequence of data-understanding-judgement-deliberation centred on the patient with the *apparently* more rational approach of reaching immediately for an evidence-based guideline.

## 2 | A PERSONAL CASE HISTORY

Drawing on the principles of narrative research,<sup>10</sup> and more specifically those of auto-ethnography,<sup>1</sup> I present below a subjective account of a trauma incident and my recollections of how both the acute episode and its sequelae were managed.

Narrative research, of which auto-ethnography is one example, does not seek to produce hard facts, rather it is necessarily and irrevocably perspectival: one person's interpretations of their observations and experience. Indeed, the internationally renowned qualitative

researcher Norman Denzin defines auto-ethnography as “an imaginative organisation of experience that imposes a distortion of truth” (page 13).<sup>11</sup>

Accordingly, the sequence of events below should not be viewed as “facts” in the narrow sense. Whilst the experiences occurred a few years ago, I have tried to reproduce the sequence of events and decisions as accurately as I can. My account is to a large extent objectively verifiable through test results and medical record notes. Nevertheless, it is inevitable that my recall of the initial events will be incomplete and coloured by what happened subsequently. But, importantly, this “distortion of truth” does not invalidate the philosophical arguments the story is intended to illustrate.

I have deliberately not included details of the hospitals or clinicians involved. As noted above, my goal is not to criticize individual actions but to surface and question a contemporary approach to clinical management that is increasingly widespread—and, I believe, rarely challenged.

### 2.1 | Case narrative: a cycle accident

I was riding my racing bicycle by the side of a canal. It was a sunny day and there was nobody else around. That part of the towpath was wide and smooth, and the surface had recently been improved with a layer of smooth concrete. I was pedalling hard and going quite fast (about 20 miles an hour). I was wearing Lycra racing gear and special cycling shoes that were fixed to the pedals.

Suddenly, a mechanical failure occurred. Perhaps something got caught in my front wheel. Perhaps the chain jammed. Abruptly, my feet were prevented from circling and the front wheel stopped dead. The rear wheel left the ground and the entire bike somersaulted high into the air. My feet were locked into the pedals so I went with it.

I came down heavily on the concrete, attempting to break my fall by putting my arms over my head. I initially landed on my bent arms (which took the brunt of the fall) and heard the crack of breaking bones. I bounced off the concrete. The back of my head took the second hit, splitting my cycle helmet. I was very dazed but had not been knocked out. Both my arms were deformed and useless. All my fingers were numb and painful.

For various reasons, it took a couple of hours to reach the hospital, by which time I was cold and shivering. A triage nurse, followed by a more senior nurse, asked me questions and gave me paracetamol. My arms were X-rayed and confirmed a comminuted fracture of the left olecranon (elbow) and a severely impacted fracture of distal radius (forearm) on the right. An attempt to reduce the fractured radius under regional anaesthesia was unsuccessful. I was given more painkillers and put on the list for an operation the next day, where the fractures were realigned and repaired using internal fixation.

The afternoon following my accident, I was visited by a woman who introduced herself as the “falls co-ordinator.” She was wearing a white coat and carrying a clipboard with a tick-box chart on it. She began to go through a structured list of questions, including “do you take four or more prescription drugs a day?” and “have you ever felt unsteady on your feet?”. After a few of these questions, we both agreed that there was little point in continuing with the assessment, since my accident had not been the kind of fall that the designers of

the guideline she was following had had in mind. We exchanged pleasantries and she wished me a speedy recovery.

In the weeks that followed, I struggled to rehabilitate myself and return to work with both upper limbs injured. My arm muscles wasted despite intensive physiotherapy, and the pain and numbness in my fingers improved only marginally. The grip in both hands was weak and getting weaker. A further operation was done to shorten the ulna (forearm bone) in one arm to try to relieve the unexplained pain. This was unsuccessful. I began to stumble when I walked—something that had never occurred before.

Eight months after the original injury, I consulted a new orthopaedic surgeon, who examined me and ordered a magnetic resonance imaging scan of my neck. This showed collapse of 3 lower cervical vertebrae and herniation of several intervertebral discs. A link to the original trauma was suspected but unproven. I was advised to have surgery to my cervical spine with some urgency. In a 5-hour operation, the surgeon replaced 2 damaged intervertebral discs and decompressed various nerve roots. The operation was immediately successful, to the extent that when the surgeon visited me in the recovery room, I could squeeze his hand with more power than I had had since my accident. The pain and numbness in my fingers were gone.

I had been warned that I should expect considerable pain after my operation. I was offered opioid analgesia, but this class of drugs has always made me feel very sick. In the days before my operation, I explored the option of nonsteroidal anti-inflammatory drugs (NSAIDs), which I have taken in the past with no side effects. I put out a question on Twitter (where I have many thousands of followers, many of them clinicians interested in EBM). The response of many people to my 140-character tweet was that (a) my forthcoming cervical spine surgery was “not evidence based,” so I should pull out of having it and (b) NSAIDs delay bone healing after orthopaedic surgery, so I should not take those.

Both these pieces of advice were offered with apparent confidence by clinicians who identified as part of the EBM movement. Others (some of them frontline clinicians who were less closely aligned with the EBM movement) gave anecdotal accounts of NSAIDs being very useful analgesics after spinal surgery, with the advantage of being “opioid sparing.”

Following my operation, I took NSAIDs (which controlled my pain well) and made an uneventful recovery.

### 3 | COMMENTARY

In this section, I offer an interpretation of what was said and done to me by clinicians, along with discussion of relevant (and also, as it turned out, irrelevant and imaginary) guidelines. In particular, I consider 4 aspects of my clinical management and a guideline or possible guideline that may apply to each: (a) the decision not to order imaging studies of my cervical spine at the time of my accident; (b) the decision to use a falls prevention checklist; (c) the decision, several months later, to perform cervical discectomy and decompression; and (d) the decision to prescribe NSAIDs for postoperative pain relief after spinal surgery.

The question of whether a patient with an acute head injury should be offered imaging of the cervical spine is addressed in NICE Guideline 76.<sup>12</sup> The relevant section of the algorithm is shown in Figure 1. It includes the situation where the patient is alert and oriented, but there is also “suspicion of cervical spine injury” along with a history of “fall from >1 metre” and/or “bicycle collision.” My bicycle had somersaulted in a way that precipitated a fall from well over 1 metre, and whilst the cycle itself did not collide with anything (since I hit the ground before it did), its occupant collided twice with the concrete towpath.

The question then arises as to why a cervical spine injury was not suspected. The answer, I believe, is that whilst the history I gave on admission to hospital was very similar to the account given above, the version that appeared in my medical record was closer to “55-year-old lady, fell off bike.” The obvious fractures in the upper limbs were, it seemed, sufficient explanation for the pain and numbness in my fingers.

Whilst my impacted fractured radius was not accompanied by dorsal displacement of the distal fragment (the classic “fork” shape of the eponymic Colles fracture<sup>13</sup>), it was described as such by the orthopaedic registrar who attempted unsuccessfully to reduce it. (Indeed, I called this injury a Colles fracture myself until I explored the literature in more detail and discovered my error.) This is important. As Porrino et al explain in their review of the epidemiology of fractures of the distal radius, the condition is patterned very differently in different age groups. In both teenagers and adults aged up to 50 years, distal radius fractures are commoner in males and most commonly result from sporting or road traffic accidents; they are not associated with low bone density but linked to particular activities and lifestyles.<sup>13</sup> In the over 50s, distal radius fractures are more common in women (and usually show the classic fork shape); these Colles fractures are associated with osteopenia (low bone density) and broadly follow the epidemiological pattern of other “fragility fractures” (eg, hip and thoracic spine).

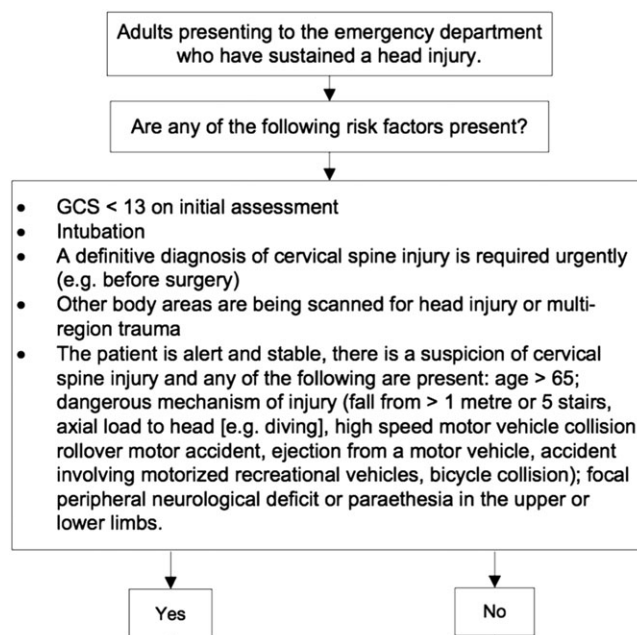


FIGURE 1 Extract from NICE Guideline 76 “Head Injury”<sup>12</sup>



Describing my right-sided injury as a Colles fracture, then, aligned the clinical gaze to an “ideal type” of a postmenopausal woman with fragility fracture resulting from a relatively low-impact fall onto the outstretched hand. The Colles fracture stereotype, along with my age (just days after my 55th birthday, which put me into the denominator population of “the over-55s”), led the doctors looking after me to reach for what seemed to be the appropriate guideline: covering falls prevention in older people.

The guideline in use at the time was the 2013 version of NICE Guideline 161,<sup>14</sup> which defined “older people” in the community as those over 65 and “older people” in hospital inpatients as those over 50. Since I was lying in a hospital bed, I was presumably considered to be a member of the latter group—yet closer inspection of the guideline suggests that this was a misclassification. I was only in hospital as a result of a fall that happened *outside* the hospital. The section of the guideline relating to falls prevention in hospital explicitly relates to (a) all over-65s and (b) those inpatients aged 50 to 65 years who are considered at risk of falling *because of an underlying condition* (paragraph 1.2.1.2).

In other words, whoever sent the pleasant lady along with her clipboard to assess my medication, cognitive function, balance, hearing, and much else besides with a view to falls prevention was *not* following an evidence-based guideline—though I’m sure the attending clinician believed that this was what they had ordered. The falls prevention co-ordinator sensibly abandoned her “evidence-based” checklist when she listened to my story—which was unambiguously one of high-impact trauma in someone who was otherwise fit and well.

The next question—and the third guideline in this narrative—addresses whether I should have been offered a cervical discectomy and decompression surgery. In response to a 140-character question posted by me on Twitter, many of my medically qualified followers immediately answered “no.” Which evidence were they following when they offered this advice? The answer appears to be “evidence that does not apply to this patient.”

Here is where I think my well-meaning advisers went astray. First, they were aware of the evidence-based finding that most people with neck pain and even most people with cervical radiculopathy (that is, symptoms in the arms resulting from nerve root compression or tension) do no better following cervical spine surgery than they do with conservative management.<sup>15</sup> Second, they were aware that many if not most patients who are being considered as potential candidates for cervical spine surgery are suffering from common or garden cervical spondylosis and do not have “red flag” symptoms or signs.<sup>15</sup> It is therefore absolutely correct to say that, *on average*, patients who are contemplating going under the knife for their neck pain or neck-related arm pain (radiculopathy) would be ill-advised to rush into surgery.

Now let us take a look at the NICE Clinical Knowledge Summary on neck pain.<sup>16</sup> It divides patients with radiculopathy into 3 groups: those with “red flag” signs or symptoms; those without red flags and a history of less than 4 to 6 weeks; and those without red flags whose

symptoms have persisted beyond 4 to 6 weeks. The knowledge summary recommends the 2 latter groups be offered conservative management—with pain relief, physiotherapy, lifestyle measures, and (in longstanding cases only) magnetic resonance imaging. But red flags—including a history of severe trauma (Figure 2)—should prompt urgent referral and bespoke management of the underlying cause. Randomized controlled trials demonstrating the lack of efficacy of cervical spine surgery compared with conservative management typically exclude unusual presentations and individuals with red flag features (see, for example, Engquist et al<sup>17</sup>). Tellingly, my Twitter advisers had not asked me about red flags.

My final question relates to NSAIDs as opioid-sparing analgesics in the aftermath of spinal surgery. Again, Twitter was a rich source of advice—and also a source of confusion in the identification and interpretation of evidence. Whilst several respondents referred obliquely or implicitly to “guidance,” no *actual* guideline was cited, rather received wisdom was presented *as if* it was evidence based. My own search of the literature could not identify a relevant guideline (though I suspect one may exist somewhere)—but it did identify some small studies of rodents in whom NSAIDs had apparently reduced the bone healing rate (for example, Gerstenfeld et al<sup>18</sup>) and retrospective case series of human patients with nonunion of bone, some of whom had received NSAIDs (for example, Giannoudis et al<sup>19</sup>).

My search also identified 2 systematic reviews, both of which had sought to throw light on the controversy of whether NSAIDs delay bone healing in surgical patients.<sup>20,21</sup> Both concluded that the evidence base was weak and conflicting; they called for more and better basic science studies as well as well-designed RCTs. One commented: “Animal and in vitro studies present so conflicting data that even studies with identical parameters have opposing results” (page 1).<sup>20</sup> The strongly held view that NSAIDs should not be given after spinal surgery appears to be no more than a nonevidence-based meme.

This view was reflected in the advice of 1 or 2 surgeons in my Twitter following, who suggested (based on their clinical experience) that in the absence of specific contraindications, NSAIDs after spinal surgery are effective and safe and that they “get you up and about quickly.” My own medical history is relevant here: As a young adult, I sustained a number of stress fractures (metatarsal and tibial). They were treated with high-dose NSAIDs, and I returned to sport quickly (and ahead of prediction) in each case. So I knew that whatever had happened to experimental rats and patients undergoing hip replacement in methodologically weak studies in faraway places, in *my* case there was already evidence that NSAIDs did not delay healing of *my* bones.

## 4 | DISCUSSION

This study has considered how guidelines influenced—or failed to influence—4 aspects of a single clinical case study told from the perspective of the patient: (a) a guideline that *existed and was relevant*

- **'Red flags' that suggest severe trauma or skeletal injury:**

- A history of violent trauma (e.g. a road traffic accident) or a fall from a height. However, minor trauma may fracture the spine in people with osteoporosis.
- A history of neck surgery.
- Risk factors for osteoporosis: premature menopause, use of systemic steroids.

**FIGURE 2** Extract from NICE Clinical Knowledge Summary “Cervical Radiculopathy”<sup>16</sup>

but which was not used (imaging of the cervical spine in acute head injury); (b) a guideline that was not relevant but which was used (falls prevention in older people); (c) a guideline that was relevant but was misremembered and misapplied by commentators claiming to be giving evidence-based advice (management of cervical radiculopathy); and (d) a guideline that did not exist but which was quoted by adherents of EBM as if it had existed (and which was also misremembered and misapplied).

This case study suggests—though it does not itself prove—that despite a whole generation of research into EBM, the medical profession remains mired in the problem that Sir John Grimley Evans described in 1995:

*There is a fear that in the absence of evidence clearly applicable to the case in the hand a clinician might be forced by guidelines to make use of evidence which is only doubtfully relevant, generated perhaps in a different grouping of patients in another country at some other time and using a similar but not identical treatment. This is evidence-biased medicine; it is to use evidence in the manner of the fabled drunkard who searched under the street lamp for his door key because that is where the light was, even though he had dropped the key somewhere else. (page 451)<sup>22</sup>*

Given the effort and expense that goes into producing guidelines, and the philosophical arguments in favour of case-based management set out in the Introduction, why are we continuing to use these resources in such a drunken way? I propose 3 explanations, the first 2 of which are psychological and the third sociological.

The first explanation is our inbuilt tendency to classify. As sociologists Geoff Bowker and Susan Leigh Star observed in their excellent book *Sorting Things Out: Classification and Its Consequences*, we create classification schemes (such as the ICD10 or targeted risk groups).<sup>23</sup> When we encounter a patient, instead of attending to the unique particularities of that individual, we hasten to classify them as a member of some group or other. Once we have done that, the *average characteristics of the group* not only inform but also become enshrined in clinical guidelines and recommendations. This has the effect of ossifying and reproducing our clinical and cultural stereotypes, which now appear as scientific “facts.”

The second explanation is bounded rationality—that is, the idea that because real-world decisions often involve numerous options, outcomes, and contextual factors, we unconsciously simplify the problem to make it possible to cope with cognitively and manage practically.<sup>24</sup> Indeed, the inexorable pressures of modern clinical work often *require* us to use such “fast and frugal” reasoning.<sup>25</sup> As Kahnemann showed in the book *Thinking, Fast and Slow* that won him the Nobel Prize for Economics, such heuristics give our species a survival advantage.<sup>26</sup> So it is not necessarily a bad thing that clinicians hasten to classify (so they can treat the group rather than the individual) and then apply an oversimplified version of rules and procedures. It does, however, follow that a critical dimension of clinical judgement is knowing (at least at an intuitive level) which patients to manage using fast thinking (based on crude classification) and which require us to revert to slow thinking (individualized management).

The third explanation for our drunken use of guidelines is the over-valuing of *rationality* (doing the thing right—as in following rules and guidelines) over *reason* (doing the right thing—as in making the right moral choice for *this* patient at *this* time, given *these* contingencies). As sociologist Andrew Sayer wrote in his book *Why Things Matter to People*,<sup>27</sup> and as Anthony Giddens explored in *The Constitution of Society*, the encroachment of rationality over reason (and the particular phenomenon of the “expert system” that applies technology to impose *distant* rules and procedures over the granularity of local social situations) characterizes many sectors of modern society.<sup>28</sup>

It is both a strength and a weakness of EBM that so much of clinical practice is now highly structured, based on rational classificatory schemes and standardized procedures, and auditable from a distance. We depict clinical practice as the science of advanced rule-following rather than the practice of case-based moral reasoning. We train medical students, for example, to perform in predictable, standardized ways in highly standardized scenarios (“objective structured clinical examinations” or OSCEs),<sup>29</sup> with the implication that every time we manage renal colic, investigate pelvic pain, or break bad news, there is a universally “right” (and, implicitly, a “wrong”) way of going about it.

The quote from the 1982 Kassirer paper reproduced in the Introduction suggests otherwise. In that scenario, the clinician is engaging (with considerable enthusiasm, it appears) with a unique and dynamically unfolding narrative, altering his or her assessment of the case iteratively as additional patient-derived evidence accumulates.<sup>7</sup> Whist she or he is aware of a (1982-level) evidence base pertinent to the case, the main focus of the questioning is the patient, not the evidence. Unlike the typical contemporary clinician, Kassirer’s interviewee seeks to ground their decision making in what might be called “patient-based evidence,” which might be defined in terms of the following questions:

*What do I know about this patient: her history, the findings from examining her, her test results, how she reacted the last time she took this drug, her beliefs, her family circumstances etc. And given all that, what research evidence do I need to progress my clinical reasoning?*

In sum, my individual case narrative (deliberately chosen for being atypical, thereby highlighting the difference between individual evidence and population-derived evidence) adds to a growing literature on the overuse, underuse, and misuse of clinical guidelines. The existence of many thousands of evidence-based guidelines is no guarantee that the right section of the right guideline will be applied to the right patient at the right time. On the contrary, the accumulation of unmanageable numbers of lengthy guidelines makes it ever more likely that the clinician at the front line will manage his or her patients using early categorization, frugal heuristics, and a privileging of operational rationality over case-based moral reasoning.

In light of this, how can we ensure that evidence-based guidelines are our servant rather than our master in our pursuit of good clinical care? At the very least, we must treat guidelines with the scepticism they deserve—remembering that the best of them is nothing more than a statement of what is likely to happen to the *average* member of a defined group of patients. We must also learn to value, and

ensure that we seek, *patient-based evidence* through unfolding clinical conversations. And we should always bear in mind Grimley Evans' cautionary metaphor: if we did not drop our car keys under the lamp post, there is no point looking for them in that spot.

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## REFERENCES

- Greenhalgh T. Adjuvant chemotherapy: an autoethnography. *Subjectivity*. 2017;10(4):340-357.
- Greenhalgh T, Howick J, Maskrey N. Evidence based medicine: a movement in crisis? *BMJ (Clinical research ed)*. 2014;g3725:348.
- Valkenburg G, Achterhuis H, Nijhof A. Fundamental shortcomings of evidence-based medicine. *J Health Organ Manag*. 2003;17(6):463-471.
- Deaton A, Cartwright N. Understanding and misunderstanding randomized controlled trials. *Soc Sci Med*. 2018.
- National Institute for Health and Clinical Excellence. *How We Develop NICE Guidelines*. Accessed 24.2.18 at <https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-guidelines/how-we-develop-nice-guidelines>. London: NICE; 2018.
- Kelly MP, Moore TA. The judgement process in evidence-based medicine and health technology assessment. *Social Theory & Health*. 2012;10(1):1-19.
- Kassirer JP, Kuipers BJ, Gorry GA. Toward a theory of clinical expertise. *Am J Med*. 1982;73(2):251-259.
- Tonelli M. The philosophical limits of evidence-based medicine. *Acad Med*. 1999;73:1234-1240.
- Engebretsen E, Vøllestad NK, Wahl AK, Robinson HS, Heggen K. Unpacking the process of interpretation in evidence-based decision making. *J Eval Clin Pract*. 2015;21:529-531.
- Greenhalgh T, Wengraf T. Collecting stories: is it research? Is it good research? Preliminary guidance based on a Delphi study. *Med Educ*. 2008;42(3):242-247.
- Denzin N. *Interpretive Autoethnography*. London: Sage; 2013.
- National Institute for Health and Clinical Excellence. *Head Injury*. NICE Guideline 76. London: NICE; 2014.
- Porrino Jr JA, Maloney E, Scherer K, Mulcahy H, Ha AS, Allan C. Fracture of the distal radius: epidemiology and premanagement radiographic characterization. *Am J Roentgenol*. 2014;203(3):551-559.
- National Institute for Health and Clinical Excellence. Falls in older people: assessing risk and prevention. In: *NICE Guideline*. Vol.161 London: NICE; 2013.
- Binder AI. Cervical spondylosis and neck pain. *BMJ: British Medical Journal*. 2007;334(7592):527-531.
- National Institute for Health and Clinical Excellence. *Neck Pain-Cervical Radiculopathy*. *Clinical Knowledge Summary*. London: NICE; 2015.
- Engquist M, Löfgren H, Öberg B, et al. Surgery versus nonsurgical treatment of cervical radiculopathy: a prospective, randomized study comparing surgery plus physiotherapy with physiotherapy alone with a 2-year follow-up. *Spine*. 2013;38(20):1715-1722.
- Gerstenfeld LC, Thiede M, Seibert K, et al. Differential inhibition of fracture healing by non-selective and cyclooxygenase-2 selective non-steroidal anti-inflammatory drugs. *J Orthop Res*. 2003;21(4):670-675.
- Giannoudis P, MacDonald D, Matthews S, Smith R, Furlong A, De Boer P. Nonunion of the femoral diaphysis: the influence of reaming and non-steroidal anti-inflammatory drugs. *Bone & Joint Journal*. 2000;82(5):655-658.
- Pountos I, Georgouli T, Calori GM, Giannoudis PV. Do nonsteroidal anti-inflammatory drugs affect bone healing? A critical analysis. *Scientific World Journal*. 2012;2012:1-14.
- Konstantinidis IN, Papageorgiou S, Kyrgidis A, Tzello G, Kouvelas D. Effect of non-steroidal anti-inflammatory drugs on bone turnover: an evidence-based review. *Rev Recent Clin Trials*. 2013;8(1):48-60.
- Evans JG. Evidence-based and evidence-biased medicine. *Age Ageing*. 1995;24(6):461-463.
- Bowker GC, Star SL. *Sorting Things Out: Classification and Its Consequences*. Cambridge, MA MIT Press; 2000.
- Gigerenzer G, Selten R. *Bounded Rationality: The Adaptive Toolbox*. Cambridge, London MIT Press; 2002.
- Gigerenzer G, Goldstein DG. Reasoning the fast and frugal way: models of bounded rationality. *Psychol Rev*. 1996;103(4):650-669.
- Kahneman D. *Thinking, Fast and Slow*. Basingstoke Macmillan; 2011.
- Sayer A. *Why Things Matter to People*. Cambridge: Cambridge University Press; 2011.
- Giddens A. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley, CA: Univ of California Press; 1984.
- Atkins S, Roberts C, Hawthorne K, Greenhalgh T. Simulated consultations: a sociolinguistic perspective. *BMC Med Educ*. 2016;16(1):16.

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