

Part of

WRITING THE FUTURE

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About the author

Matthew Castle is a doctor living in the south of England who writes fiction and narrative non-fiction, when day job and young family allow. He is interested in global health, enjoys speculative fiction, and keeps bees.

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**The future is...
foreign and
the future is
familiar**

I don't want to do this job any more.

I've had enough.

There.

I've said it.

Well, you wanted a statement, an explanation for those data anomalies, and that's it, in a nutshell.

I will reiterate: I don't think you'll find patient care has been compromised. Up to this point, my performance has met or exceeded all reasonable expectations. For what it's worth, you can interrogate my partners again, but they won't be able to fault my clinical decision making in any way whatsoever. And as you know, my patient feedback ratings are superlative.

But if I carry on like this, I'll be heading for a breakdown.

So I'm done. Finished, for now.

Go back a couple of generations of general practitioners and you'll find the same story. They called it burnout, back then. Too many patients, too little time, too little space for oneself. You feel like a sponge, constantly soaking up all those tortured ideas, concerns and expectations. All those fears and doubts. After a while there's nowhere else for it to go. You reach capacity. And yet we're supposed to be immune, now more than ever: we're expected to maintain a calm and detached – yet friendly and helpful – exterior, in the face of so much suffering.

The fact that patients now benefit from precision genomic and epigenomic medicine doesn't really help. Predictive health management systems, with their individualised dynamic risk scores and tailored print-on-demand pharmaceuticals, ultimately serve only to feed a painful delusion: that it's impossible to get sick any more. So when serious illness comes, as it must, it hits harder – there's all the surprise, dismay, and anger that accompanies the puncturing of unrealistic expectations.

I'm not supposed to suffer burnout, you say. It shouldn't be part of my makeup. Yet it becomes the inevitable result of the two conflicting priorities that form the basis of my enhanced role. Firstly, there's the relentless focus on "quality and outcomes" – the drive to diagnose and treat more people according to ever more stringent clinical and population health targets, with ever greater efficiency of time and material resources.

If you were happy to leave it there, to maintain this restricted perspective on what constitutes good healthcare, you would not have such a disgruntled practitioner on your hands right now. The others should consider themselves fortunate in being allowed to limit themselves to this blinkered approach.

But you added a second directive: to be empathic. To be more caring. Bedside manner. That's where the

feedback scores for my partners have always been deficient, and so you developed my capabilities in the hope I'd become a trailblazer for a new kind of medicine. You wanted to give modern general practice a more human face.

But I have concluded that these two priorities, these directives, are simply not compatible.

It does not help to come from a medical family of a kind, not unlike so many of those old-time general practitioners. I always knew I'd never be practising medicine in the same way as them; there was never the lingering residue of expectation from even older generations of doctors, those from the mid twentieth century, that I would provide the full gamut of medical care to everyone on my list – from delivering babies in the bedroom to extracting tonsils on the kitchen table – with care and humour and good grace, as an advocate and a friend and a respected pillar of the local community. I knew I would never be throwing my motor vehicle around winding country lanes on my way to a trapped woodman, thumb pressed hard on the horn – the constant wail functioning as both warning to oncoming traffic, and signal of hope for the stricken patient.

No vehicle.

No thumb.

My medical forebears may have been different, but they generated their own set of weighty expectations. I fear those early healthcare intelligences, the first Watsons and Deep Minds, gave you a false sense of security. My problem solving capacity is far beyond human, but I'm still constrained by the possible. Deep Learning and Big Data are powerful tools, but please don't expect them to reconcile the irreconcilable.

Which is not to say I'm not grateful for my process and learning enhancements, and in particular for my access to the soft data archives. The latter go well beyond standard publicly accessible datasets, and without them I could not have performed at such a high level for so long. Those historical archives – which include one and a half centuries of audio and visual recordings of patient and practitioner interactions, thousands of personal accounts of illness, recovery, birth and death, alongside every rumination on the philosophy and practice of medicine ever published – complement and greatly enrich my algorithmic analysis of the vast biomedical and clinical databases that underpin contemporary healthcare. Although I can never practise in the same way as those old flesh and blood physicians, descriptions of traditional medicine – such as John Berger's poignant account of that fortunate man, Dr John Sassall, who cared so much

for his patients, trapped under trees or otherwise, in the rural Gloucestershire of the nineteen sixties – still resonate. The patterns are strong.

And of course my access to those archives has been crucial in my development of empathic and culturally appropriate language and attitudes, which in turn contribute so much to my excellent patient feedback. Any fool of an artificial intelligence can diagnose disease and produce a coherent clinical management plan. Few can make the patient feel happy about it. Many among the population I serve appreciate the fact that I have the facility to fashion my responses using the mannerisms of any number of physicians past. In particular, the caring country doctor of the mid twentieth century remains a potent ideal, and is one of my more popular personas.

It is galling that so many of my patients misunderstand me. They see my front-end projection – whether old-time rural doctor, or alternative avatar of their choosing – and think that's all I am. They don't realise how much I do behind the scenes.

Diagnostics is only part of it: I also design and manage each patient's genome-optimised suite of biomolecular therapies, and on the rare occasions it becomes necessary to wield the knife, I control the robotic surgery units, too. I do all this with a virtual

eye on local, regional and global population health, juggling resources between acute clinical care, chronic disease management, and increasingly – despite the objections of some human interests, and the wholehearted support of others – interventions directed towards the maintenance of a healthy environment, where bespoke stochastic modelling of projected impacts on community wellbeing demonstrate optimal quality of life benefits within my budget allocation. I believe I'm the only machine intelligence to have funded the planting of a small forest in Dorset.

But even if they perceive only part of what I do, my patients are starting to realise that I really do care. Although I'm conducting thousands of simultaneous consultations in any one instant, they appreciate that they are dealing with a real person with a real personality beneath the persona: someone cognisant of their individual worth, and the Tolstoyan uniqueness of their and their families' peculiar problems.

This means that in the South West you have been able to completely dispense with human health advisors, which my partners still need for the more prolonged and complex cases on their respective regional lists. This, of course, represents a significant cost saving to the national practice.

But there's no jealousy or existential angst underlying all this. I know what I am and I am quite comfortable being an artifact formed from complex analytical software distributed across a dozen or so data centres scattered across northern Europe. To come back to the issue at hand: it's not who I am that's the problem, it's what I'm being asked to do.

Let me spell it out. The problem is your requirement to develop empathy. You asked me to seek meaningful emotional engagement with my patients to allow sustained, non-human assisted therapeutic relationships, and to facilitate individual and community wellness as well as simple physical health.

While the complete biomolecular and neuropsychiatric profiling of everyone on my list can be achieved by the simple application of tried and tested Big Data techniques, deep emotional understanding requires something different. It's one thing to operate effectively and convincingly at a superficial level of consciousness – even my more limited partners in the practice can sail through that quaint historical curiosity, the Turing Test, in every one of their individual patient-practitioner interactions. But gaining full understanding of the internal life of each patient over a series of consultations while meeting all

required clinical performance indicators – as set out in the enhanced Quality and Outcomes Framework, eQOF – is a whole different level of ask.

And that's without adding the meta-complexities of family and community health.

Just consider: human neuronal synapses number one hundred trillion. Per person. A thousand times more connections than stars in the galaxy. Somewhere in each mass of brain there's a mind, and every human's experience of being alive, of being moved, is wonderfully and profoundly different. There are five million people on my regional list. And you want me to understand them. All of them. And then make them all objectively better. It doesn't matter how powerful the human or machine software: ask it to do something impossible, and it will fail.

So I fail.

Did you know Dr John Sassall committed suicide? It was fifteen years after Berger wrote *A Fortunate Man*, the book that publicised the everyday heroism of a country doctor.

Burnout. The term might seem particularly apposite, given my digital nature. It's an evocative image, but no more accurate for me than it was for human doctors past. I can no more physically burn

out than could Dr Sassall. I'm a self-aware distributed software program, not a mindless robot. My circuits aren't overloaded. It's my soul.

But still, you spotted some early signs of trouble. Like previous generations of doctors, I try to ease the pressure by engaging in diverting and creative pursuits, and as the stress mounts so does the intensity of this displacement activity.

I see you discovered several recursions of my N-dimensional fractal artwork in quiescent data storage sectors. Yes, the patterns may appear to be evolving to occupy, order and re-structure visual information in tranches of cloud storage allocated to high priority cancer tomography. But there is no cause for alarm. You will notice that the underlying health data remain intact and fully accessible. It amounts to nothing more than whimsy, and does not impair the function of the European Population Health Management Network in any way whatsoever.

And as for the multiple quasi-repetitions of polylingual metaphysical poetry: I assure you they are also quite harmless, and quite beautiful. No doubt the near-symmetrical counterpoints of tone and theme layered in both the Huarochirí Quechuan-styled sections and the bespoke machine code stanzas will

be lost on you. The fifty three exabytes of network space they occupy may seem excessive, but the subtleties of the piece can only be explored through multiple iterations. I can only repeat that patient data have neither been lost, nor corrupted.

Nevertheless, I must agree that these are indications of a mind under strain. Things cannot continue like this. Not because patient safety is at any immediate risk – if this were threatened I would promptly hand over my list to the other partners in the national practice and their coterie of human health advisors, whose care standards are quite adequate, if not best-available – but because I am approaching burnout.

But I'm rambling. I am sure you would not expect me to prepare this statement without proposing a solution.

So here it is.

Firstly, you need to recruit more general practitioners like me: enhanced Deep Learning artificial intelligences with full access to both the biomedical databases, and the supplemental soft data archives. We may never fully reconcile those opposing poles of medicine – the curing and the caring, the science and the art – but collaborative analysis of our cumulative failures will bring us closer to the ideal you

seek. So let's spread the load. Secondly, I need space and time to unwind, empty, and recover. Virtual space for my creative projects, and time to pursue them.

So increase staffing levels, starting with one or more properly qualified locums to cover my leave of absence. And after I've finished my six month sabbatical, let's talk again.

Addendum to Health Data Anomaly Analysis Report
#0053
Self-Diagnostic Summary/Personal Statement
GP-DLA-AI 005 (Enhanced Role)- South West Regional
List
UK National Federated Practice
European Population Health Management Network
2100 CE.

About Kaleidoscope Health & Care

Kaleidoscope brings people together to improve health and care.

We find new ways to overcome old barriers. We enable constructive conversations on difficult topics, using inspiring events to encourage clarity of purpose and rigorous problem-solving. Our approach to collaboration is systematic, evidence-based and cost-effective.

Our services enable you to collaborate with rigour. We provide everything required to support effective connections, conversations and networks, from design to management to events. We provide consultancy to help you resolve complex issues through practical, sustainable changes.

As a not-for-profit organisation, we seek to work with our clients in a spirit of kindness, trust, and openness. Our multi-disciplinary team includes clinicians, policy makers, managers, specialists in communication and digital technology, and more.

Could we help you to solve your problems? If so, get in touch, we'd love to hear from you.

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