EXPERT GENERALISM

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INTRODUCTION

Tell someone you are training to be a doctor, and the response is often, “what will you specialise in?” Many doctors specialise in the management of specific conditions (e.g. diabetes or cancer) or of organ systems (e.g. cardiology, urology). But growing proportions of patients have problems that don’t fit neatly into these biomedically defined categories or have multiple morbidities that interact in complex ways.

Which is why we also need doctors who specialise in whole person medicine. These are doctors with the distinct skills and expertise of medical generalism [1]. Skills that enable them to safely construct robust, individually-tailored, whole-person explanations of illness experience; and so, implement person-centred healthcare designed to enhance health-related capacity for daily living [2].

The NHS Long Term Plan [3] recognises that changes in our population - including growing numbers of older people living with (often multiple) chronic illness - mean we need to expand our capacity for medical generalist practice within modern healthcare - both in hospital and primary care settings.

So, what is medical generalism? What does the medical generalist do? What skills do they use to practice? And what do you need to know if you are interested in working as a medical generalist?

This essay offers an introduction to how you can use your medical training to find out more about this most intellectually stimulating area of medical practice.

NEED TO KNOW

MEDICAL GENERALISM:
A PRIORITY FOR PATIENTS, PROFESSIONALS AND POLICY MAKERS

“The good physician treats the disease, the great physician treats the person with the disease” (Osler, 1849-1919)

The importance of person-centred medical care has long been recognised by the medical profession [4]. Recent years have seen an international call for a revitalisation of medical generalist practice. One of the key drivers for this comes from the expressed need of patients. You will no doubt have met a patient like Elsie (Box 1).
There are a growing number of people like Elsie [5] who live with the daily challenge of looking after their home and family [6], whilst also managing multiple long-term conditions, including dealing with the healthcare (medicines etc) that is intended to help [6-8]. Some of them tell us that the healthcare we offer has become more of a problem (a burden) than a help [6-8]. People like Elsie want us to tailor their care to their individual circumstances [9]. They want generalist medical care. Many can’t remember all the specialists they have seen in the past 12 months, or the medications they take and why they take them.

Aging populations living longer with multiple long-term conditions mean governments and policy makers have also realised that we need more capacity for medical generalist expertise [1,2, 10-12]. Expanding generalist capacity is an international healthcare priority.

**MEDICAL GENERALISM:**
**SCIENTIFIC METHOD FOR A DISTINCT FORM OF CLINICAL PRACTICE**

Practising medicine requires us to have both knowledge about health and illness, and the wisdom to use that knowledge to help our patients. Anyone with a smart-phone and access to the internet can know medical facts. The wisdom of medical practice comes not from what you know, but how you use what you know to help your patient [13]. Specialist and generalist medical practice use knowledge differently to answer different questions.
The scientific reasoning of specialist practice addresses questions such as: what is the likelihood that this person has a given condition; what is the probability that a given treatment will benefit/harm this person? It is grounded in the scientific practice of hypothetico-deductive reasoning: the systematic collection of data through the clinical consultation supporting the objective assessment of (statistical) likelihood of a given outcome [14,15]. The clinician considers the individual patient against the standard of externally-derived biomedical scientific evidence to decide if this patient has a defined condition and is likely to benefit from an evidence-based intervention. Much of it is based on randomised clinical trials, the ‘gold standard’ of researched, evidence-based practice. But this type of data is based on standardised patients, often with only one medical condition and from one ethnic background and age group. It doesn’t necessarily apply well to people like Elsie.

There is no such external evidence-base for a given individual - someone like Elsie, a ‘whole person’ living in their individual context. The scientific reasoning for whole-person, generalist practice must therefore differ. To understand an individual - a whole person - we must draw on evidence and data from a range of sources to help us gain a whole picture view of what is happening. This form of clinical practice is grounded in the scientific principles of inductive reasoning, which aims to construct a trustworthy interpretation or explanation of an illness phenomenon. This form of practice places an emphasis not on estimating statistical certainty, but on the robustness of the interpretive process, and the utility of the explanation in addressing the healthcare needs of the individual [2]. Generalist clinical reasoning is further explored in Section 1A of this “Learning General Practice” resource.

Let us return to Elsie to illustrate the difference between the two approaches. In Elsie’s case, hypothetico-deductive reasoning can help us work out the reduced risk of a stroke if she were to improve the control of her diabetic sugars. But it cannot tell us if the burden of taking extra diabetic medication (e.g. adding insulin) will be adequately balanced by the (potential) improvement in her overall health as a resource Elsie needs, and uses, to live her daily life [6]. To understand this broader picture, we must draw on our consultation skills to hear Elsie’s full story; our biomedical knowledge of the science of diabetes; our wider scientific knowledge of the personal experiences of living with chronic illness; our understanding of the ethics and principles of good health care, amongst others. Ultimately the decision about whether to treat or not is an interpretation of this complex data set. This is inductive reasoning - a data-driven form of practice in which multiple elements (all believed to be robust) are combined to infer an explanation or conclusion. Inductive reasoning produces explanations that are plausible, reasonable, justified – but never certain. The use of inductive reasoning highlights the need for follow up in generalist medical practice to appraise and (re)assess the conclusions reached.
Both specialist and generalist reasoning produce new knowledge about a patient. But the insights from these two approaches may differ. Judging between competing knowledge is a branch of scientific practice in its own right - being the area of practice known as epistemology. Epistemology asks questions about how do we know what we know, and how can we trust what we know? These are questions that scientists openly grapple with every day. For clinicians, this work is often less visible. Nonetheless clinical epistemology is a key principle of generalist practice.

MEDICAL GENERALISM IN ACTION: DESCRIBING THE STEPS FOR PRACTICE

It is important to start by noting that the skills of medical generalism are used by many different types of doctors working in a range of settings [1, 16, 17]. Generalist medicine is a set of skills that GPs commonly use in their daily work, but it is not synonymous with general practice [16-18]. (Indeed, GPs use both specialist and generalist skills in their daily work). However, much of the scholarship to describe this form of practice has been done in General Practice.

Gabby and le May observed GPs in practice over a long period and described how they are able to flexibly use and apply data and evidence in context (what they described as ‘contextual adroitness’) to generate new ‘knowledge-in-practice-in-context’ [19]. They recognise generalist practitioners robustly analysing data (including ‘traditional’ scientific evidence), in the context of a consultation, to generate new, individualised understanding of a personal illness experience [2,20].

Donner-Banzhoff et al also observed GPs at work and found that hypothetico-deductive reasoning was not the most common model of practice. Instead they saw doctors collecting data, through a patient-led exploration of the illness to infer (deduce) an explanation of illness. They described this as ‘inductive foraging’ [21].

In 2015, I described the SAGE consultation model [22]. By adapting established scientific method for generating robust, trustworthy interpretations through inductive reasoning, I described five key necessary elements for a ‘whole person’ (generalist) consultation [2,20,22]:

• The clinician’s ‘lens’: the clinician must seek to understand the presented illness from the patient perspective. [6]
• Multi-source data: the clinician must collect and consider the full range of data needed to understand this illness experience. [2]
• Exploration and Explanation: where the clinician explores the data set with the patient [2,18,22]; combining the data with an understanding of context [19] to analyse the illness problem; employing explanatory reasoning [14], to make sense of the patient’s problem [2]; and so deliver robust, judicious, context-specific decisions [16].
• Safety netting: where the clinician checks with the patient, themselves, and potentially a wider team whether they have 'missed something' [2,22].
• Impact review: where the clinician follows up the patient to evaluate the impact of the explanation and decision [2,22]

**MEDICAL GENERALISM IS NOT A NEW IDEA, BUT NEEDS UPDATING FOR MODERN PRACTICE**

With recognition of an urgent and growing need for expert generalist capacity, we have seen new accounts of generalist practice from around the globe. Including Gunn and Palmer’s review in Australia [10], Stange’s work in the US [11], the Canadian College of Family Medicine [12], the UK RCGP report [1] and most recently an international consensus statement describing quality standards for generalist practice [20].

Our understanding of, and writing about, generalist medicine is rapidly being updated for emerging 21st century healthcare systems characterised by evidence-based practice, guideline care, and the emerging technologies associated with artificial intelligence, personalised medicine and genomic medicine; along with complex patients and healthcare needs. There is exciting new educational research and practice to support professionals in understanding and delivering care [23,24]; new research examining enablers and barriers to generalist practice to inform new models of care [7,8]; and new thinking on health systems design [25]. On a day to day basis, the profession - the doctors who you meet in your clinical attachments - are working to make sense of how to be a generalist in the new healthcare context. You are both witnessing, and becoming part of, an emerging new world. There has never been a more important time to be talking with your tutors, as well as the clinicians and patients you meet on a daily basis, about what generalist medicine means to them. So that you can contribute to shaping future medical practice.

**IN CONCLUSION**

Generalist practice is increasingly recognised as a key ability for all doctors in cost-limited healthcare systems where patient needs, and satisfaction are considered important are accounted for. An over-reliance of specialist approaches to medicine can result in patients being referred to different specialists for each condition - a reality in many countries. This can lead to increased costs for the patient, increased investigations and poorer overall healthcare outcomes due to no one taking ultimate responsibility for the person and a feeling of not being treated as a whole. Generalist thinking is therefore a critical factor in determining the efficiency of healthcare systems. However, generalist practice demands the simultaneous use of both inductive and deductive methods of reasoning and is therefore intellectually demanding.
**ACTIVE LEARNING**

**Talk to a patient:**
Next time you meet a patient living with chronic illness, take the time not only to practice your Calgary-Cambridge medical consultation skills, but also to talk with the person about their lived experience of their illness. Ask them about the daily work of living [6], and how both their illness and medical care impact on that. Ask them what they need most from healthcare to help with that daily work. And consider how their answers impact on the decisions you are considering about their care. Share your reflections and learning with your peers, your trainers - perhaps consider writing up your findings. (Don’t forget to get permission from any patients you consider including in your case studies)

**Making generalist expertise visible:**
Generalist expertise is used in practice every day, but often not discussed and described. We have a language to discuss specialist care, but less so for generalist care. Generalist expertise has been referred to as the tacit knowledge or professional wisdom (phronesis) of practice [27]. As we have highlighted, the writing on generalist expertise that exists needs updating. We invite you to be part of making that happen.

✓ Observe what the doctors you meet in daily practice are doing.
✓ Ask yourself - and them - why did you do that? What data were you using, what was their reasoning?
✓ Apply the Montreal statement [20] and/or the SAGE consultation model [22] to what you have seen and ask yourself, what went well? What could the doctor have done differently?
✓ Consider why the doctor wasn’t using generalist expertise in this consultation. Perhaps the patient’s problem wasn’t suitable for a generalist approach? Perhaps the clinician’s expertise lies in specialist reasoning? Or perhaps there are contextual factors that prevented the clinician from offering a person-centred approach? [26,28]
✓ Reflect on the implications for your own practice and training. You might want to think about writing up your thoughts - in a paper or for a blog.
Trustworthy clinical decisions - the quality of my generalist practice:
Review your own clinical practice by applying the quality criteria described in the Montreal statement [20] and consider the implications for your future practice.

✓ Next time you take an extended history from a patient, review your history against the criteria in the Montreal statement. Ask yourself, what elements did I explore - what could I have also considered?
✓ Reflect on your thoughts with others. Are there any changes you want to make to your ‘consultation model’ - to the way you take a history?
✓ Look at the flipped consultation model described by Lucassen [29] - does this offer you ideas for your future history taking?

FURTHER LEARNING

ADDITIONAL RESOURCES: READING AND KEY PAPERS

• Try reading Range; how generalists triumph in a specialized world by David Epstein.
• Medical Generalism: expertise in whole person medical care. (Royal College of General Practitioners). [1]
• McWhinney: the gentle radical. [17]
• The science of generalism. [2]

ADDITIONAL RESOURCES: ONLINE

• Professional virtues in modern medicine  
  https://www.medicalvirtues.co.uk/defining-medical-generalism
  Which of these virtues do you recognise in yourself, in your tutors, in your fellow students? Do you agree with Professor Cassam’s argument?

• Generalist expertise in other professions  
  https://www.twipu.com/evalottchen/tweet/1135176647081103360
  Which of the attributes of the generalist referred to here apply to medicine? Are there any you disagree with?

• The WISE GP (@TheWiseGP)
  (https://s opc.ac.uk/article/gp-scholarship-wise-gp)
  Explores generalism in more detail – a joint venture between The Society for Academic Primary Care (www.sapc.ac.uk) and the Royal College of General Practitioners. Explores the wider skills needed for generalist practice especially the ability to gather and interpret data in the clinical context, produce robust decisions and act on the findings to support patient needs [26].

• Choosing to be ‘a jack of all trades’.
REFERENCES


4. Osler W. The Principles and Practice of Medicine. 1892.


7. May C, Montori VM, Mair FS. We need minimally disruptive medicine. BMJ 2009, 339: b2803 https://doi.org/10.1136/bmj.b2803


The following resources have been developed in conjunction with SAPC Heads of GP Teaching. If you have any queries or questions regarding the resources on offer, please contact [Prof. Joe Rosenthal](#) or [Prof. Alex Harding](#), Co-Chairs of SAPC’s Heads of GP Teaching Group.