

“Optimising the Medical Workforce by Improving Efficiency and Physician Training”

By

Alan Maynard and Karen Bloor

Introduction

In many discussions of “efficiency” and “optimisation” these terms ambiguously and this can result in ill focused even misleading analysis. The purpose of the first part of this note is to clarify the meaning of technical terms which are often abused in the debates about efficiency, productivity and the physician workforce.

This definitional section is followed by the implications for the training of physicians. Given the worldwide recession and evidence of substitution possibilities in the medical workforce, it is concluded that the numbers in physician training should be tightly controlled if not cut back. Without such controls substitution possibilities will be frustrated as investments are translated into complementary activities which like additions to the physician workforce cannot be afforded in these times of large fiscal deficits in many countries.

Words have meanings: stop abusing technical terms!

Efficiency is a relationship between the value of what is given up when an investment is made (the “opportunity cost” in economics) and the value of what is gained or the benefit.

In the health care market “benefit” is often discussed and measured erroneously. Donabedian distinguished between organisational *structure, processes* of care and improved health status *outcomes* for patients.

In terms of the current debates worldwide about “productivity”, it is essential to distinguish between the relationship between *inputs* (the value of what is given up when a patient is treated) and *outputs*, and the relationship between *inputs* and *outcomes*, and the distribution of benefits to maximise value.

In most health care systems there is an implicit assumption that more outputs (e.g. CT and MRI scans, and more hip and knee replacements) always and everywhere result in improved outcomes for patients. Given that much of medical care is not evidence based in terms of clinical effectiveness and that clinical practice variations waste significant quantities of societies’ scarce resources, the production of more health care activity may not lead to an improvement of patient outcomes.

“Improved productivity” that produces more procedures may keep the workforce active and receive media plaudits but health gain is slight or non-existent. As the popular saying goes “the operation was a success but the patient died” i.e. output increased but it had no value to the patient (or taxpayers!)

The term “optimisation” has like “efficiency” and “productivity” been so abused that it too creates ambiguous meaning! The word optimum is usually defined as “most favourable”. To an economist this means the achievement of efficiency i.e. where opportunity cost is minimised and benefit or patient gain in health outcome is maximised. Thus optimisation and efficiency are very clearly linked.

What can be “optimised” in the medical workforce? The *size* of the workforce can be altered at the margins, and over a relatively long period of time. The *composition* of the workforce, in terms of the skill mix of the clinical team, can also be altered, sometimes more rapidly due to shorter training periods for non-physician substitutes and complements. And the *activities* of the workforce can also be influenced by policies aiming to create improved

efficiency and productivity. All these processes are affected by training not just physicians but clinical teams. Health care delivery is a joint product.

Physicians usually use terms in a precise way, fearing quite rightly that any ambiguity may put at risk the welfare of their patients. When these noble practitioners of the arts and limited but impressive science of medicine discuss health policy and health economics, they should adhere to precision in the use of technical terms. When they fail to do this, as occurs so often, they can introduce ambiguity which could damage the welfare of their patients, insurance payers and taxpayers.

Professions and power

The political and social power of the medical professions is considerable. The nice issue in any profession is how that power is exercised and whether it benefits its members and/or the society in which they work.

George Bernard Shaw argued that professions were “a conspiracy against the laity” implying like some economists (e.g. Friedman) that they were more concerned with improving members incomes and wealth rather than improving the welfare of their customers.

The medical profession (i.e. physicians) has been successful in achieving both high incomes and status. The twentieth century was a period in which their numbers steadily increased and their revenues generally improved. This was a period in which it was assumed that increasing expenditure to fund increased levels of outputs led almost automatically to improved patient outcomes.

However doubt about the output-outcome relationship grew during the latter decades of the century inspired by the work of Archie Cochrane, Jack Wennberg and other iconoclasts who

demanded evidence rather than religious belief about the output-outcome relationship.

Their work and long delayed recall of other pioneers pressing for improved efficiency such as Semmelweis (hand hygiene), Florence Nightingale (measurement of outcomes) and Codman (surgical outcomes) has led to the first decade of the twenty first century witnessing an eruption of concern about “quality” i.e. the relationship between inputs and patient outcomes or efficiency!

The US Institute of Medicine report, “Too Err is Human” enabled the Institute of Health Improvement to evangelise “patient safety” with vigour and success. At the same time the growth of the “evidence based medicine” (EBM) movement intensified political and professional focus on creating and using evidence to formulate practice guidelines to use as benchmarks for clinical practice.

The latter has obvious attractions but also some limitations. Again the issue is about the use of words, in this case what is “evidence”? The Cochrane collaboration has focused largely on evidence of clinical effectiveness. But as emphasised by economists what is clinically effective may not be efficient, but what is efficient is always clinically effective.

The policy issue still debated by some in the USA is whether technology appraisal and guideline construction should be based on clinical effectiveness data or information about the cost and outcomes of interventions competing for public and private funding. The English National Institute for Health and Clinical Excellence (NICE) is focused on the latter i.e. EBM where the “E” stands for economics and efficiency based decision making. In the USA some still appear to be focused merely on clinical effectiveness, thereby adhering to inefficiency in guideline production and technology appraisal.

A nice problem facing both groups is the single morbidity approach they both use. Whether they use economic-efficiency criteria or mere clinical effectiveness to ration access to health care through technology appraisal or guidelines, the focus is on single morbidities e.g. breast cancer, diabetes, kidney failure or heart failure. However those who are regular users of health care are the elderly and they typically have multiple morbidities. Is it efficient to use combination of single morbidity guidance to treat such patients, when their treatment regimes may interact e.g. a patient with renal deficiencies and cancer treatment may be treated for the latter with damage to the former? The trade-offs inherent in such choices are proverbial elephants in the room i.e. they are acknowledged but little discussed.

Physician training

Becker made a distinction between general and specific training. General training involves the acquisition of skill that can be used across trades and firms. Thus it might be considered reasonable that all health professions treat patients and their colleagues with care and understanding, can put up a drip (without infecting the patient!), insert a catheter (without producing urinal tract infections!), administer drugs to protocol (i.e. right drug and right dose!) and be able to meet the domestic needs of patients, (e.g. feeding, cleaning and toileting)

Specific training is the acquisition of more particular analytical and interpretative skills in terms of diagnostic pathways (e.g. bloods and scans) and treatment selection (hopefully in relation to an economic evidence base). As clinical guidelines are adopted more widely as benchmarks that may determine seventy to eighty per cent of practice, the focus of this training has to be on the understanding of exceptions that may often be defensible for patients with complex co-morbidities, and on judgements about balancing benefits, risks and costs of treatment.

Given these general considerations, it is remarkable how the health care professions (like medieval guilds) work in silos and are fiercely independent, protecting the interests of their members often in preference to the interests of patients and taxpayers.

This problem is epitomised by “grade inflation” whose value in terms of patient health gain is unclear. For instance turning nursing into a “graduate profession” may make practitioners “too posh to wash” patients and also may create wage inflation when funding is highly restricted. The fundamental issue is does such grade inflation increase efficiency i.e. reduce costs and/or improve patient outcomes? Where is the evidence from these ubiquitous reforms in most countries?

Efficiency improvements are possible if graduate nurses can replace physicians in undertaking some tasks. The literature on nurse-doctor substitution is over 40 years old and the Cochrane review of the literature shows the potential for substituting primary care physicians. In UK terms this might mean that instead of continually reducing GP list sizes, they might be increased, thereby reducing the employment of physicians and replacing them with nurse practitioners.

Such substitution has not taken place for several reasons. Firstly the political power of physicians has led to successful blocking of such skill mix changes (e.g. as in Germany) or where there has been investment in primary care nurses they have been used as complements rather than as substitutes. In addition, nurse training has tended to be highly risk averse in comparison with balancing of risks that medical professionals have become used to over time. This may mean that the potential for substitution in terms of cost savings may not always be realised fully in practice.

Another factor mitigating substitution has been the success of the physician profession in manipulating politicians to increase medical school intake, thereby heading off substitution. Few

politicians can countenance “physician unemployment” as the media and profession response is usually intense, deploying unique shroud waving methods to ensure success in guaranteeing physicians jobs for life!

In countries such as Britain the government has expanded medical school intake significantly. Currently about 6000 medical students graduate each year, but only 3000 are retiring. In order to employ these new graduates there will be political pressure by the Royal Colleges and the trade union to ensure employment, and this will certainly result in blocking nurse substitution.

A complicating issue is that female hospital physicians in the UK and Canada have been shown to have lower activity-output rates than their male peers. There is no current analysis and data to compare male and female diagnostic success and outcomes. If there is evidence to maintain physician activity-output, the feminisation of the medical workforce will require the employment of more and expensive practitioners. If such evidence is absent, substitution with nurse anaesthetists, nurse endoscopists and even nurse surgeons could become economically attractive.

The typical response of the Royal Colleges and trade unions is to support substitution where it improves the income and employment of their members. Thus (HSJ April 9th, 2010) the Royal College of Nurses supports the use of nurses in place of physicians. However the notion of replacing registered nurses with assistant practitioners (APs) does not find favour even though they may be able to carry out nursing roles at lower cost! As nursing becomes a graduate profession, and nurses substitute for doctors, there could be a domino effect in grade inflation, with health care assistants trained more highly for nurses and so on. Robust management of substitution is essential if such inflationary pressures are to be contained within very limited budgets.

As populations age and suffer from multiple morbidities, there is an emphasis on patient pathways integrating primary, secondary and community care. Such an approach puts an emphasis on team work. However the two guilds which dominate training are the professions and universities and colleges. These organisations “feed” off each other with the latter emphasising the “academic” and thus usually not equipping practitioners for work in teams or creating knowledge and skills to manage in the health care system where they will work.

The silo approach to medical workforce training and management is advantageous to the members of professions in terms of income enhancement and employment protection. However it appears to be inefficient and it is certainly not “optimising” the health care workforce. Might it not be reasonable to expect all health care professions to have general skills in medical care and thus expect radiographers, occupational therapists and perhaps even some administrative grades to be able to carry out routine nursing tasks? Might not we expect experienced graduate nurses to be able to do many tasks currently carried out by physicians? The implied challenges are evaluative (where is the efficiency evidence?) and political (are policy makers and managers sufficiently robust to drive change in the face of professional self interested conservatism?).

Conclusions

- 1) The delivery of health care in public and private health care remains inefficient. Common inefficiencies have been evident for decades and ignored by the medical professions and policy makers worldwide. These inefficiencies include the lack of an evidence base for many interventions, the failure to deliver care efficiently where that evidence base exists, significant waste due to inefficient variations in clinical practice, poor patient safety which damages patient health and wastes resources, and an absence of patient reported outcome measures.

- 2) The political power of the medical profession and the weakness of government and private insurers have been sufficient to ensure that these inefficiencies have been preserved for decades, thereby damaging patient welfare and wasting society's scarce resources
- 3) This power continues to inhibit an efficient use of the most expensive resource in all health care systems i.e. the workforce
- 4) Those jurisdictions concerned with budget pressures and recession face a nice choice. Do they wish to continue to support inefficiency with practitioners trained to work in silos or do they want to meet the needs of patients often with complex co-morbidities by working in flexible teams?

The history of the management of health care systems, public and private, is that they prefer inefficiency which damages patients and taxpayers. The economic situation may at last dictate efficiency based medicine (EBM). Physicians, who often claim leadership rights in health care delivery, should be at the forefront of this reform. Health care is delivered by teams, and the physician, who Fuchs referred to as the "captain of the team", should lead reforms to improve efficiency in workforce training and health care delivery.

Physicians of the world unite! You have nothing to lose but your professional chains!