

Developing Health Care Workforces for Uncertain Futures

Des Gorman, MD, PhD

Abstract

Conventional approaches to health care workforce planning are notoriously unreliable. In part, this is due to the uncertainty of the future health milieu. An approach to health care workforce planning that accommodates this uncertainty is not only possible but can also generate intelligence on which planning and consequent development can be reliably based.

Drawing on the experience of Health Workforce New Zealand, the author outlines some of the approaches being used in New Zealand. Instead of relying simply on health care data, which provides a picture of current circumstances in health systems, the author argues that workforce planning should rely on health care intelligence—looking beyond the

numbers to build understanding of how to achieve desired outcomes. As health care systems throughout the world respond to challenges such as reform efforts, aging populations of patients and providers, and maldistribution of physicians (to name a few), New Zealand's experience may offer a model for rethinking workforce planning to truly meet health care needs.

Editor's Note: This New Conversations contribution is part of the journal's ongoing conversation on the present and future impacts of current health care reform efforts on medical education, health care delivery, and research at academic health centers, and the effects such reforms might have on the overall health of communities.

It is often claimed that the only truism about health care workforce planning is that many core predictions will inevitably turn out to be wrong. Perhaps as a consequence, a characteristic of most health systems is cyclical workforce “feasts and famines,” particularly for large workforces such as nurses. Oversupply and undersupply in the workforce coexist, along with inequities in access and outcomes

among patient populations. Despite years of planning, most health systems in Organisation for Economic Co-operation and Development (OECD) countries appear increasingly unaffordable.^{1,2} Even conservative estimates of demand for health care services over the next decade will exceed projected workforce supply.

There are three fundamental reasons why health care workforce planning is generally unreliable. The first is that most planning begins with the existing workforce, capital, and information technology (IT) infrastructure, which is used as the basis for the design of models of care and service configurations in the hope that these will meet the health care needs of the population. In practice, the process usually results in advocacy for the status quo. Second, most health care workforce planning does not account for uncertainty and projects supply–demand gaps on the basis of current models of care and service configurations—again, a process that is unlikely to lead to disruptive innovation. The third problem in most health care workforce planning is that, when some element of the plan is undermined by changes in population health needs, available technology, or other factors, the whole plan can fail.

A new approach to health care workforce planning in New Zealand is attempting to avoid the pitfalls of traditional methods by using health care

intelligence to develop plans that can accommodate the uncertainty that is characteristic in health care. As health care systems throughout the world respond to challenges such as reform efforts, aging populations of patients and providers, and maldistribution of physicians (to name a few), New Zealand's experience may offer a model for rethinking workforce planning to truly meet health care needs.

Reliable Health Care Workforce Planning Is Essential

There has never been a greater need for reliable, intelligence-based health care workforce planning—drawing a distinction between health care data, which are plentiful, and intelligence, which is scarce. As an illustration, the number of pharmacists who engage in clinical practices beyond dispensing is simply data; knowing what to do to encourage such extended practice amongst the others is intelligence.

The reason why intelligent planning is essential is that all predictions of the future health milieu for OECD nations suggest a mismatch between workforce supply and demand, and health care affordability. Using New Zealand as an example of a typical OECD nation,^{3,4} population projections by age cohort demonstrate that the future demand for health care—based on the numbers of workers needed and assuming stable productivity—will significantly outstrip supply unless there is a significant

Please see the end of this article for information about the author.

Correspondence should be addressed to Dr. Gorman, University of Auckland, 85 Park Rd., Grafton, Devonport, Auckland 0624, New Zealand; e-mail: d.gorman@auckland.ac.nz.

To read other New Conversations pieces and to contribute, browse the New Conversations collection on the journal's Web site (<http://journals.lww.com/academicmedicine/pages/collectiondetails.aspx?TopicalCollectionId=43>), follow the discussion on AM Rounds (academicmedicineblog.org) and Twitter (@AcadMedJournal using #AcMedConversations), and submit manuscripts using the article type “New Conversations” (see Dr. Sklar's January 2015 editorial for submission instructions and for more information about this feature).

Acad Med. 2015;90:00–00.

First published online

doi: 10.1097/ACM.0000000000000644

change in the way in which such care is managed and provided. Health care workers are also aging, and data from an unpublished 2013 National Health Board survey indicate that the cost of recruiting and retaining existing workers will cause a 2% to 3% annual increase in overall health system cost. Given the demographic shift underway, private and public health care systems will be increasingly challenged to meet population health needs while keeping health care spending at sustainable levels.

A salient question here is whether the productivity of conventional health care workforces can be significantly increased to meet the health care needs of populations given recent trends and generational effects. Pay-for-performance reimbursement models have been proposed as one way to incentivize health care providers to improve clinical productivity by placing an emphasis on patient outcomes. Reviews of these models, however, show a poor track record largely because schemes have not been based on behavioral economic principles.⁵

But it is possible to have successful productivity interventions. For example, in New Zealand, national elective surgical outputs have increased by about 30% over the last five years, and, in one region, orthopedic surgery durations and length of patient hospital stays were reduced by almost 40%; related inpatient costs decreased by 12% to 17%.⁶ The success appears to have been underpinned by an action research-type methodology. That is, the desired outcome was determined at the outset, and then the process was changed as necessary to achieve that outcome. Several factors were essential to the success of the process: Clinical champions led the initiatives, acute and elective surgical campuses were separated, shared-risk funding was used, and targets were paired to prevent “resource shifting.”

In spite of individual success stories like this one, there is little likelihood that the productivity of conventional health care workforces can be increased enough for supply to meet future demand. Effective workforce planning, however, can better position health care systems to meet the needs of populations. Again, New Zealand provides a helpful example.

Health Care Workforce Planning That Accommodates Uncertainty

What we do know

New Zealand Treasury data show that, while the national GDP increased by 133% between 1950 and 2010, health care costs increased by 417%.⁴ At present, the New Zealand economy is growing by 3% to 4% per year. By contrast, an unpublished analysis for the National Health Board shows health care cost inflation, despite close control of pharmaceutical prices, to be about 8.5% per year. Not only is the rate of health care inflation more than twice the growth rate of national wealth, two periods of intense “managerial” control of providers have not produced a sustained suppression of costs. Arguably, what has been “achieved” instead is that many health care providers consequently do not believe they have any responsibility for overall system resource management.

Given the reliable predictions of a future supply–demand and affordability mismatch, sound health care and workforce planning is essential. However, as noted above, traditional approaches to workforce planning are unreliable because the future health milieu is uncertain. Several examples demonstrate how this uncertainty presents itself. The discovery of an infective cause of peptic ulceration rendered a surgical workforce redundant. Significant workforce implications arose from the development of laparoscopic cholecystectomy to replace the open abdominal procedure that required a 10- to 12-day hospital stay. And the workforce impact of basing cancer services on the underlying mutation is as yet unknown.

Whole-workforce dynamics also illustrate how uncertainty can affect planning—size of the nursing workforce is strongly influenced by general economic conditions and nurses’ age.⁷ Consequently, “feasts and famines” in the nursing workforce occur as predictably as do changes in general economic conditions.

Accounting for what we don’t know

Health Workforce New Zealand (HWNZ) was established in 2009, in part as a response to the criticism that the country had an unsustainable reliance on immigrant doctors and nurses to meet health care workforce needs, in turn due to a significant emigration of health care workers, in particular to Australia.⁸

HWNZ was commissioned to develop a sustainable, affordable, and fit-for-purpose health care workforce. It became apparent that there was little useful intelligence on which this work could be reliably based and that a better planning methodology was needed along with active career management strategies for existing and future workers. Consequently, an approach to health care and workforce planning that accommodated uncertainty was developed and has proven to be highly effective. Several factors have contributed to this success.

First, a version of the Institute for Healthcare Improvement Triple Aim initiative was adopted as the core planning template.⁹ Any proposed clinical scenario (i.e., model of health care) that does not maintain or preferably improve the quality of the patient experience and outcome—on an individual as well as a population level—largely through better access to health care and at a reduced per capita and/or per intervention cost, is rejected.

Second, health care workforce planning needs to be based on a sequential hierarchy: identifying health need, agreeing on appropriate models of care and consequent service configurations, and only then developing integrated workforce, capital, and IT solutions.

Third, health care planning was found to be more reliable when it is based on service aggregates, such as care of aging populations and mental health, than when it is based on professions or craft groupings, such as geriatrics and psychiatry. It is also more reliable when the desired outcome is an inclusive set of possible future clinical scenarios for each service aggregate. The credibility of the scenarios is enhanced if clinical subject matter experts and opinion leaders generate them.¹⁰ The basis of this approach is to encourage clinicians to identify the various ways in which they can imagine health care being provided in the future, often facilitated by a cohort of patient stories. The end result is a suite of possible models of care and service configurations. Current plans can then be assessed by the extent to which they are able to accommodate all of these scenarios and can be adjusted accordingly. Selection and engagement of appropriate clinical opinion leaders is a critical step. Engagement is facilitated if the process is explicitly constructed to have tactical outcomes—that is, if some suggestions by the planning

group are adopted and implemented as soon as possible. This approach not only reassures clinicians that the process is purposeful but also increases the tactical capacity of the health system with respect to innovative change—notably a weakness in most departments and ministries of health.

Fourth, because the future is uncertain, planning has also included advocacy for generalist scopes of practice for those health care workers whose training is slow and expensive. We have also advocated for flexibility in deployment for all workers to allow us to fill the need for more general health care workers, such as rehabilitation practitioners, rather than specific roles, such as physiotherapy, occupational therapy, and speech language therapy. Both of these measures will help to “future-proof” the workforce. It is clear from U.S. Medicare data that, in addition to future proofing, advocating for generalist scopes of medical practice can have positive effects on patient outcomes and health care costs.¹¹

Fifth, cross-sectional analyses of workforce forecasts are used to identify consistent findings that can then be confidently incorporated into plans. In the New Zealand context, such analyses of the 17 completed health service forecasts, and the now dozens of putative clinical scenarios, have highlighted many iterative observations, which, because they are “identified” by the majority of these scenarios, constitute robust intelligence for the purposes of planning. For example, it was seen that the supply of general medical practitioners was inadequate to meet the projected need for almost all the possible future clinical scenarios. As such, an increased investment in general medical practitioner training was undertaken with significant confidence that this would almost certainly be worthwhile.

We have also observed through these analyses that some allied health care workforces are almost certain to be in significant oversupply and others in undersupply. In addition, New Zealand has and will continue to have more than enough doctors for the foreseeable future, but the medical workforce is somewhat perversely incentivized and is poorly distributed by way of demography, geography, and discipline to meet need.¹² This is also true for most OECD nations, as is the observation that this

maldistribution has been misinterpreted as a doctor shortage.¹³ A low-vacancy medical marketplace should provide an opportunity for an increase in the ratio of locally trained to overseas-trained doctors. This would achieve a closer cultural alignment of the medical workforce to the community it serves, improve self-reliance, and help to future-proof the local workforce against inevitable changes in the medical marketplace.

The current medical marketplace will also make a change in the recognition, reward, and remuneration scheme for doctors easier to achieve—from a system that has a recruitment and retention bias to one that has a productivity (outcome) quality bias.¹⁴ It is noteworthy in this context that there is already a shift from private practice to salaried employment in the United States.¹⁵ The extant labor market will also facilitate a demographic, geographic, and disciplinary redistribution of the medical workforce to better meet need. This also has significant implications for medical schools. On the assumption that these schools have a social contract to produce a workforce that meets their society’s needs, substantial curriculum reform will almost certainly be necessary for most.

We have also been able to derive critical intelligence about both the nursing workforce and community-based allied health care workforce. In brief, unless there are changes to the nature and scope of nursing careers and to their career support infrastructure, the current low-vacancy nursing marketplace (feast) will transition to a high-vacancy nursing marketplace (famine) over the next decade. In addition, we have discovered that the community-based workforce that provides home-based care to older patients is both relatively undertrained and underskilled for the necessary tasks. Up-skilling this workforce will constitute a significant economic challenge because of consequent wage and salary increases unless there are substantive productivity improvements.

In regard to refining and enhancing the planning process, an approach to workforce scenario modeling, which provides information that will assist subsequent implementation, is being tested by an HWNZ research fellow.¹⁶

In contrast to these insights and developments, countries such as the

United States, the United Kingdom, Australia, and Canada still largely undertake health care workforce planning using traditional methods that have failed to develop an optimal health care workforce. There is a consequent reliance on market forces to “shape” workforce disposition—given the workforce maldistribution that has arisen as a result of this approach in the past, and in the context of finite health care resources, the only possible conclusion is that this approach will result in increasing inequities in health access and outcomes.

Summary

Health care workforce planning is notoriously difficult, and traditional approaches are unreliable. The major cause of that unreliability is that the future health milieu is uncertain. This uncertainty exists at a whole-workforce level and for individual models of care and service configurations. The HWNZ approach suggests that it is possible to undertake health care workforce planning that accommodates this uncertainty. The major strength of this approach is that it generates genuine health care intelligence that can form the basis of sound planning.

Funding/Support: None reported.

Other disclosures: None reported.

Ethical approval: Reported as not applicable.

Previous presentations: The content of this commentary is based on a presentation made by the author at the Ottawa Conference, April 2014, Ottawa, Ontario, Canada.

Dr. Gorman is professor of medicine, University of Auckland, Auckland, New Zealand, and executive chairman, Health Workforce New Zealand, New Zealand Ministry of Health, Wellington, New Zealand.

References

- 1 Iacobucci G. UK spending on health is lowest of all G7 countries except Italy. *BMJ*. 2014;348:g3063.
- 2 Iacobucci G. Financial crisis is inevitable in the NHS by 2015–16, King’s Fund says. *BMJ*. 2014;348:g3048.
- 3 NZ Institute of Economic Research (NZIER). Ageing New Zealand and Health and Disability Services: Demand Projections and Workforce Implications, 2001–21. A Discussion Document. Wellington, New Zealand: New Zealand Ministry of Health; 2004. <http://nzaca.org.nz/publication/documents/nzierreport-ageingnzandhealthanddisabilityservices.pdf>. Accessed November 24, 2014.

- 4 New Zealand Treasury. Health projections and policy options for the 2013 long-term fiscal statement. Draft paper for the long-term fiscal external panel. Wellington, New Zealand: New Zealand Treasury; 2012.
- 5 Gorman D, Thompson M. Encouraging and rewarding the good behaviour of healthcare providers. *Intern Med J*. 2011;41:585–587.
- 6 Gorman D, Horn M. Productivity gain a triumph for clinician leadership. *Intern Med J*. 2012;42:605–606.
- 7 Staiger DO, Auerbach DI, Buerhaus PI. Registered nurse labor supply and the recession—are we in a bubble? *N Engl J Med*. 2012;366:1463–1465.
- 8 Zurn P, Dumont J-C. Health workforce and international migration: Can New Zealand compete? Organisation for Economic Co-operation and Development, World Health Organization, case study. Paris, France: OECD; 2008.
- 9 Berwick DM, Nolan TW, Whittington J. The triple aim: Care, health, and cost. *Health Aff (Millwood)*. 2008;27:3759–3769.
- 10 Gorman DF. The utility of idealised patient journeys as a centre-piece of health workforce planning. *Asia Pac J Health Manag*. 2010;5(2):8–13.
- 11 Baicker K, Chandra A. Medicare spending, the physician workforce, and beneficiaries' quality of care. *Health Aff (Millwood)*. 2004;(suppl Web exclusives):W4184–W4197. <http://content.healthaffairs.org/cgi/content/full/hlthaff.w4.184v1/DC1>. Accessed November 24, 2014.
- 12 Gorman D, Poole P, Scott SJ. On the maldistribution of the medical workforce. *Intern Med J*. 2007;37:669–671.
- 13 Fréchette D, Hollenberg D, Shrichand A, Jacob C, Datta I. What's really behind Canada's unemployed specialists? Too many, too few doctors? Findings from the Royal College's employment study. Ottawa, Ontario, Canada: Royal College of Physicians and Surgeons of Canada; 2013.
- 14 Schroeder SA, Frist W; National Commission on Physician Payment Reform. Phasing out fee-for-service payments. *N Engl J Med*. 2013;368:2029–2032.
- 15 Press R. Private practice vs salaried employment: A complicated decision. *Orthop Today*. January 2011. <http://www.healio.com/orthopedics/business-of-orthopedics/news/print/orthopedics-today/%7B18032629-f0ad-4b49-94ea-f8f69d614846%7D/private-practice-vs-salaried-employment-a-complicated-decision>. Accessed November 24, 2014.
- 16 Godet M. To predict or to build the future? Reflections on the field and differences between foresight and la prospective. *Futurist*. 2012;46:46–49.