- 2 Wennberg JE, Freeman JL, Culp WJ. Are hospital services rationed in New Haven or over-utilized in Boston? *Lancet* 1987;3:1185-8.
- 3 Wennberg JE, Freeman JL, Shelton RM, Bubolz TA. Hospital use and mortality among Medicare beneficiaries in Boston and New Haven. *N Engl J Med* 1989;321:1168-73.
- 4 Fisher ES, Wennberg JE, Stukel TA, Sharp SM. Hospital readmission rates for cohorts of Medicare beneficiaries in Boston and New Haven. *N Engl Med* 1994;331:989-95.
- 5 Wennberg JE, Fisher ES, Skinner JS. Geography and the debate over Medicare reform. Published on *Health Affairs* website: www.healthaffairs.org/WebExclusives/Wennberg_Web_Excl_021302.htm
- 6 Fisher ES, Wennberg DE, Stukel DA, Gottlieb D, Lucas FL, Pinder E. The implications of regional variations in Medicare spending: part 1, utilization of services and the quality of care. *Ann Intern Med* 2003;138:273-87.
- 7 Fisher ES, Wennberg DE, Stukel DA, Gottlieb D, Lucas FL, Pinder E. The implications of regional variations in Medicare spending: part 2, health outcomes and satisfaction with care. *Ann Intern Med* 2003;138:288-98.
- 8 Wennberg JE. Unwarranted variations in healthcare delivery: implications for academic medical centres. *BMJ* 2002;325:961-4.
- 9 America's best hospitals. *US News and World Report* 2001;131(3).
- 10 McCullagh P, Nelder JA. *Generalized linear models*, 2nd ed. New York: Chapman and Hall, 1989.
- 11 Wennberg J, Gittelsohn A. Small area variations in health care delivery: a population-based health information system can guide planning and regulatory decision-making. *Science* 1973;182:1102-8.
- 12 Welch WP, Miller ME, Welch HG, Fisher ES, Wennberg JE. Geographic variation in expenditures for physicians' services in the United States. *N Engl J Med* 1993;328:621-7.
- 13 Wasson JH, Gaudette C, Whaley F, Sauvigne A, Baribeau P, Welch HG. Telephone care as a substitute for routine clinic follow-up. *JAMA* 1992;267:1788-93.
- 14 Weinberger M, Oddone EZ, Henderson WG, for the Veterans Affairs Cooperative Study Group on Primary Care and Hospital Readmission. Does increased access to primary care reduce hospital readmissions? *N Engl J Med* 1996;334:1441-7.
- 15 Pritchard RS, Fisher ES, Teno JM, Sharp SM, Reding DJ, Knaus WA, et al. Influence of patient preferences and local health system characteristics on the place of death: study to understand prognoses and preferences for risks and outcomes of treatment. *J Am Geriatr Soc* 1998;46:1242-50. (Accepted 31 December 2003)

Commentary: Getting a grip on clinical variations in hospital services

David J Hunter

The findings reported by Wennberg and colleagues should come as no surprise to observers of the NHS and other healthcare systems.¹ They are neither unique nor confined to the United States. It is an iron law of health policy that supply determines utilisation and demand. Elasticity of demand dictates that if beds are available then patients will be found to fill them, regardless of the appropriateness of such care.

Wennberg and colleagues show starkly how, despite the assault on clinical practice by managers and politicians as they strive to control costs, improve quality, and tackle unexplained variations in clinical practice and outcomes, the power to determine what happens within health services resides firmly with clinicians based in acute hospitals.¹ Were the study to be repeated in the United Kingdom and elsewhere, as it should be, the results would be unlikely to differ substantially.

The findings should make policy makers wary of unleashing further, often ill considered, reforms on health systems. Successive reorganisations of the British NHS, for example, seem to have resulted in a situation best described as "dynamics without change."² The structures and organisations may come and go at bewildering speed, but life on the front line among clinicians proceeds with minimal disturbance.

Particularly striking is that the hospitals featured in the study are those with strong reputations for high quality care in managing chronic illness. High performing organisations may facilitate the development of particular cultural traits among staff, but in this instance such organisations seem to have been largely confined to acute care settings lacking a patient centred ethos. The effective management of chronic illness needs joined-up working across the entire spectrum of care, of which acute care is but one component and perhaps not the most critical.

The findings also prompt concerns about whether the English *NHS Plan* and its commitment to providing 9500 more doctors (7500 consultants and 2000 general practitioners) and increasing bed capacity by 7000 beds is entirely wise or appropriate if having more of them doing much the same sort of work in the same way is no

guarantee of better health.³⁻⁴ Do we really know the optimal number of staff and beds needed?⁵

In any event, with the focus of the government's reforms on the acute sector, on foundation hospitals, and on patient choice, Wennberg and colleagues' conclusion that the improved management of chronic illness and end of life care are priorities and should be determined by patients' needs "and not the capacity of the acute care system" is especially apposite. If the commissioning role of primary care was strengthened then the appropriate role of acute hospital care might be more effectively determined.⁶

Perhaps the most important lesson arising from the study is that if real change in the way health systems function is to occur then far greater attention must be given to the way clinicians operate and manage resources throughout the care pathway.⁷ Improving the micromanagement of chronic illness through integrated care pathways and "whole systems" thinking demands that health and social care services work together with and in the interests of patients. We have struggled with these issues for decades with limited effect. In contrast to some other European countries, Britain is still some way from reaching the promised land of integrated care. Wennberg and colleagues provide some critical insights into why.

Competing interests: None declared.

- 1 Wennberg JE, Fisher ES, Stukel TA, Skinner JS, Sharp SM, Bronner KK. Use of hospitals, physician visits, and hospice care during last six months of life among cohorts loyal to highly respected hospitals in the United States. *BMJ* 2004;328:607-10.
- 2 Smith J, Walshe K, Hunter DJ. The "redisorganisation" of the NHS. *BMJ* 2001;323:1262-3.
- 3 Department of Health. *The NHS plan: a plan for investment, a plan for reform*. London: Stationery Office, 2000.
- 4 Leatherman S, Sutherland K. *The quest for quality in the NHS: a mid-term evaluation of the ten-year quality agenda*. London: Nuffield Trust, 2003.
- 5 Department of Health. *Shaping the future NHS: long term planning for hospitals and related services: consultation document on the findings of the national beds inquiry*. London: Department of Health, 2000.
- 6 Roland M, Smith J. The role and contribution of primary care trusts in quality improvement. In: Leatherman S, Sutherland K. *The quest for quality in the NHS: a mid-term evaluation of the ten-year quality agenda*. London: Nuffield Trust, 2003.
- 7 Degeling P, Maxwell S, Coyle B. Medicine, management, and modernisation: a "danse macabre?" *BMJ* 2003;326:649-52.