

## Getting more for their dollar: a comparison of the NHS with California's Kaiser Permanente

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### Abstract

**Objective** To compare the costs and performance of the NHS with those of an integrated system for financing and delivery health services (Kaiser Permanente) in California.

**Methods** The adjusted costs of the two systems and their performance were compared with respect to inputs, use, access to services, responsiveness, and limited quality indicators.

**Results** The per capita costs of the two systems, adjusted for differences in benefits, special activities, population characteristics, and the cost environment, were similar to within 10%. Some aspects of performance differed. In particular, Kaiser members experience more comprehensive and convenient primary care services and much more rapid access to specialist services and hospital admissions. Age adjusted rates of use of acute hospital services in Kaiser were one third of those in the NHS.

**Conclusions** The widely held beliefs that the NHS is efficient and that poor performance in certain areas is largely explained by underinvestment are not supported by this analysis. Kaiser achieved better performance at roughly the same cost as the NHS because of integration throughout the system, efficient management of hospital use, the benefits of competition, and greater investment in information technology.

### Introduction

The NHS Plan for 2000 states: "The NHS is effective and efficient at meeting its goals. The NHS gets more and fairer health care for every pound invested than most other health care systems."<sup>1</sup>

We examined this claim by comparing the costs and performance of the NHS with those of a non-profit health maintenance organisation (Kaiser Permanente) in California. We compared the NHS and Kaiser Permanente on a macro level to identify any large scale differences in efficiency and operational effectiveness that would be relevant to policy and to identify topics for further research. We have not examined the merits of the overall healthcare systems in the two countries.

Comparisons among health systems are difficult because of the complexity of the systems and their contextual specificity. Several authors have made

country-level international comparisons using data from the Organisation for Economic Cooperation and Development (OECD)<sup>2</sup> or the World Health Organization.<sup>3</sup> Comparative studies usually conclude that the United States has high costs and poor population health outcomes. Beneath this accurate overall observation, however, lies the multiplicity of different healthcare systems operating and often competing within the United States.<sup>4</sup>

In many ways Kaiser Permanente is like the NHS, providing a similar range of services for a population equivalent to that of a small country. Founded in 1945, it is roughly the same age as the NHS and has had the same amount of time to evolve and adapt to new circumstances. Kaiser Foundation Health Plan and Hospitals are integrated with independent physician group practices called Permanente Medical Groups. The health plan is the insurance arm of the organisation, while the hospitals and medical groups provide all clinical services. To the public these entities are seen as one organisation, which is commonly referred to as Kaiser. Kaiser has 8.2 million members: 6.1 million in California and the remainder in Colorado, Georgia, Hawaii, Maryland, Ohio, Oregon, Virginia, Washington, and the District of Columbia.<sup>5</sup> We compared Kaiser's California region with the NHS because it represents the model most similar to the NHS. In California, doctors in the Kaiser system (both primary care and specialist) are shareholders or partners and salaried employees of the medical groups, and Kaiser owns and operates most of its own ambulatory facilities and hospitals. Unlike the NHS, Kaiser specialists cannot work outside the system.

### Methods

We focused on cost and performance. We measured cost by determining the total operating costs of each system and by adjusting the benefits offered, special circumstances not common to both systems, the relative costs of the medical environment in which the two systems operate, and the age and socioeconomic characteristics of the populations served. We measured performance by comparing inputs, access to services, responsiveness, and limited quality indicators.

In the 1940s the NHS inherited a large stock of hospitals and facilities whereas Kaiser has had to develop its infrastructure from scratch. While noting the different balance between maintenance and capital investment

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that this imposes, we did not take these factors into account in our analysis. Each system has had over 50 years to manage its capital as it thought appropriate.

We used sources with the broadest range of comparative data (such as the OECD dataset for 2000).<sup>6</sup> Much of the data on the NHS come from the official NHS website.<sup>7</sup> Kaiser data come from the health plan employer data and information set for 2000<sup>8</sup> and directly from Kaiser sources.

In comparing the per capita costs of two systems we adjusted for age and socioeconomic status. The adjustment for age is straightforward because breakdown of cost by age is available. The adjustment for socioeconomic group is more difficult because of a lack of age adjusted comparative data on the healthcare costs of various socioeconomic groups. We used data from the Office for National Statistics to adjust for potential socioeconomic differences.<sup>9</sup>

In comparing performance between the two systems, we adjusted only bed day use for age. To adjust accurately for each performance indicator we would need detailed case mix data, which were not available. Also for some of the performance indicators it is not obvious what specific adjustments would be appropriate even if the data were available.

## Results

### Costs

Table 1 shows the comparison of costs between the two systems with details of the adjustments made to arrive at the final adjusted per capita expenditure.

### Package of benefits and special circumstances

Kaiser and the NHS both provide comprehensive health services, including hospital admission, ambulatory and preventive care, accident and emergency, optometry, subacute care, rehabilitation, and home health care. For drugs used outside hospital, in the NHS people under 16 years (or under 25 years in

Wales), over 60 years, and with special exemptions do not pay for prescriptions (about 80% of all prescription items) while others pay £6.10 (about \$10). Most Kaiser members pay \$5 per prescription. Drugs given to inpatients are free of charge in both systems

The NHS provides greater coverage than Kaiser in dental and long term psychiatric care services. For other services, specifically long term care, precise comparison is difficult. Kaiser covers up to 100 days per year of subacute care, including rehabilitation and other medical services requiring skilled nursing care. It also covers home health care, including skilled nursing, speech and physical therapy, social services for the housebound, and hospice care. The NHS also covers medical long term care and home health services. Non-medical residential care is provided outside the NHS budget and is not covered by Kaiser. Table 1 shows the amounts deducted from costs for particular services.

We examined whether either system incurs special costs or benefits by virtue of its environment that would considerably bias the cost comparison between the two systems. For example, the NHS spends over 6% of its budget on obligations such as education and training, research and development, statutory and national bodies, research, European economic area medical costs, medical, scientific and technical services, grants, and other miscellaneous services. Equivalent items in the Kaiser budget account for about 3.5% of expenditure. Kaiser also has considerable administrative costs such as sales, marketing, high malpractice insurance, and risk adjusted pricing, which account for about 4% of its budget.

### Private health care

In the United Kingdom about seven million people (12%) have private medical insurance, making the private insurance market worth around £2.6b.<sup>11</sup> Private insurance serves primarily as a safety valve to provide more rapid access to specialists and non-emergency surgeries. Few Kaiser members buy duplicate insurance.

In addition to private health insurance, out of pocket spending (that is, paid for directly by the patient) is important in the United Kingdom, where about 20% of all private operations are paid for this way.<sup>14</sup> However, as we cannot accurately estimate the amount of such spending for services that are not covered by either system (such as alternative therapies, some cosmetic surgery, and certain drugs) we have not adjusted for it. We have included costs such as copayments and direct payments for non-covered drugs in Kaiser's overall costs (table 1).

### Medical cost environment

After we derived per capita costs for each system we adjusted for the purchasing power parity of each system's currency in the health sector to correct for underlying price differences in medical inputs—that is, if the NHS operated in California, or if Kaiser operated in Kent, what would be their respective per capita costs adjusted for the relative price of inputs? We can illustrate why this is necessary by comparing two major inputs: doctors' salaries and pharmaceutical costs. For general practitioners (primary care physicians) Kaiser's average starting salaries are 43% higher than average

Table 1 Comparison of costs in the NHS and Kaiser

Category	NHS (2000/2001)	Kaiser, California (2000)
Gross expenditures/revenue	£58 500m	\$14 200m
Less capital depreciation	£1 000m	\$557m
Less profit	0	\$688m
Operating expenditures	£57 500m	\$12 975m
Adjustment for differences in benefits and special circumstances:		
Dental	£1 190m	\$10m
Long term psychiatric care	£3 250m	Not covered
Special circumstances	£3 587m	\$1 065m
Supplementary private health insurance	£2 630m	0
Net expenditure after adjustments	£52 103m	\$11 900m
Per capita expenditure (59.5 million people for NHS; 6.1 million people for Kaiser)	£876	\$1951
Conversion to dollars*	\$1402	\$1951
Adjustment for PPP (1.52)†	\$2130	\$1951
Adjustment for age (decreases NHS costs by 12.2%) and socioeconomic group (decreases NHS costs 5%)	\$1764	\$1951
Final adjusted per capita expenditure	\$1764	\$1951

Sources: Lakin,<sup>8</sup> Department of Health,<sup>10</sup> Laing & Buisson,<sup>11</sup> CANDA,<sup>12</sup> World Bank,<sup>13</sup> and unpublished data from Kaiser.

\*Uses average exchange rate for the 1990s of 1.6.

†Purchasing power parity: rate of currency conversion that equalises purchasing power in health sector of different currencies.

**Table 2** Age distribution of members of Kaiser California and UK population, 2000

Age (years)	Kaiser (%)	UK (%)	NHS Costs per capita* (£)
0-4	6.0	6.0	504
5-15	15.0	14.3	131
16-44	43.1	40.8	264
45-64	25.7	23.4	363
65-74	6.9	8.2	698
75-84	3.2	5.4	1246
≥85	0.7	1.9	1993

Sources: Department of Health,<sup>10</sup> Office for National Statistics,<sup>19</sup> and unpublished Kaiser data.

\*NHS per capita costs for the Hospital and Community Health Services component of the NHS budget.

NHS salaries. For consultants (specialists) starting salaries are 115% higher in Kaiser (Kaiser, unpublished data).<sup>15</sup> A standard basket of pharmaceuticals has been variously estimated to cost 20%,<sup>16</sup> 55%,<sup>17</sup> and 60%<sup>18</sup> more in the United States than in the United Kingdom. Overall, prices in the US health sector have been estimated to be 52% higher by the World Bank<sup>15</sup> and 56% higher by the Organisation for Economic Cooperation and Development<sup>8</sup> than in the UK sector. We used the lower World Bank ratio of 1.52 to adjust for purchasing power parity in table 1.

#### Populations served

One of the most difficult tasks in comparing health systems is to determine whether the populations served by the two systems are similar. It is impossible to account for every variable that distinguishes one population from another. We adjusted for age and socioeconomic status, both of which may significantly affect healthcare costs.

The NHS serves the entire population of the United Kingdom. Kaiser serves its members, 93% of whom become members through health plans sponsored by employers or the government (Kaiser, unpublished data). Kaiser members who join through employer schemes or through government programmes for indigent and elderly people cannot be rejected because of previous illness. Membership cannot be withdrawn if a member becomes chronically or seriously ill.

Sixteen per cent of UK citizens and 10% of Kaiser members are aged over 65 years. California is a young state (11% aged > 65 years) and the United States is a young country (13% > 65 years) compared with the United Kingdom (Kaiser, unpublished data).<sup>19, 20</sup> In the United States people over 65 are provided health coverage through Medicare, a federal programme for elderly people. They can choose to receive services through managed care organisations or on a fee for service basis. Many select the Kaiser system because of the comprehensive package of services it offers. Table 2 shows the age distributions of the two populations. We have used age specific per capita costs<sup>10</sup> and adjusted NHS costs for what they would be if the United Kingdom had Kaiser's age distribution. This results in a 12.2% decrease in NHS per capita costs (table 1).

The NHS covers all socioeconomic groups. Kaiser members tend to come from middle to mid-lower socioeconomic groups because wealthier families mostly opt for more flexible and more expensive healthcare options. By US standards, Kaiser is regarded as a "working class" system.

Few Kaiser members are very poor. About 3.5% are in Medi-Cal (Kaiser, unpublished data), the government financed programme for indigent and very low income families in California. About 15% of California's population are in Medi-Cal. Contrary to common perception, however, people in Medi-Cal cost less per capita than the general population because they tend to be younger (71% < 35 years *v* 53% < 35 years for the general California population) and are lower users of health care.<sup>20, 21</sup> Medi-Cal's total per capita costs in 1998 were \$2011 compared with \$3370 for overall per capita healthcare costs in California.<sup>21</sup> Although Kaiser does not serve a representative proportion of Medi-Cal members, those who enrol receive full benefits, which in some cases are more comprehensive than for commercial members.

By definition all Kaiser members are insured. About 24% of California's population is uninsured.<sup>22</sup> Kaiser does, however, provide care to non-members, who make up 5% of all admissions to Kaiser community hospitals. Many of these patients are uninsured. In examining the healthcare costs of uninsured people, it is important to note that almost none are aged over 65 years because they are eligible for Medicare. About 81% of uninsured people are employees and their families, and 62% are aged under 40 years.<sup>22</sup>

It can therefore be argued that the lower representation of poor and uninsured people among Kaiser's members does not give Kaiser a cost advantage relative to a system that covers the entire population. However, we wanted to ensure that we accounted for any possible bias arising from the NHS having to provide care to all socioeconomic groups. According to the Office for National Statistics, NHS overall per capita costs would be about 5% lower if it did not provide services to the poorest half of all the UK population under the age of 65 years.<sup>9</sup> We therefore adjusted per capita costs for the NHS down by 5% (table 1). We have not adjusted for potential socioeconomic differences of people above retirement age because a representative portion of Kaiser members are retired (aged over 65 years) and are insured through Medicare.

After all adjustments the NHS (\$1764) and Kaiser (\$1951) costs per capita were similar.

#### Performance

We compared the NHS and Kaiser on selected measures of performance from preventive services to highly specialised interventions.

#### Input and use

Primary care services are organised differently in the two systems. In the NHS, primary care is provided by general practitioners, often with only a modest level of support from other healthcare providers. In general, three full time general practitioners use one full time equivalent practice nurse. This nurse may perform only basic medical care and is responsible for administrative functions as well, though increasing numbers of NHS practice nurses are gaining additional skills. Most general practices have a pharmacy close by, and about a quarter have pharmacies on site (NHS, unpublished data). Physiotherapy and mental health services are often available on site for a limited time during the week (table 3).

**Table 3** Comparison of inputs and use in NHS and Kaiser, 2000

Inputs	NHS	Kaiser, California
<b>Specialists per 100 000 people</b>		
Pediatricians	4.9*	12.3
Obstetricians-gynaecologists	4.1*	8.3
Oncologists	0.9*	1.7
Radiologists	4.3*	6.0
Cardiologists	0.8†	2.4
<b>Primary care facilities</b>		
Percentage of primary care physicians in single handed practices	9%‡	0%
Average No of primary care physicians per office	3.5‡	20-40
Percentage of primary care physicians with laboratory, imaging, or pharmacy on site	25%-pharmacy (few with other services)	>95%
Percentage of primary care physicians connected to clinical IT system	100% by 2002	>95% today
<b>Use</b>		
Average acute length of stay (days)	5.0§	3.9
Acute bed days per 1000 per year	1000	270

Sources: NHS plan,<sup>1</sup> OECD,<sup>6</sup> HEDIS,<sup>8</sup> unpublished Kaiser data, Department of Health,<sup>23</sup> Office of Health Economics.<sup>25</sup>

\*1999 includes registrars as well as consultants for England.

†1998 Consultants for England.

‡1998 data.

§1996 latest OECD data.

¶1997 latest OECD data.

In Kaiser, primary care physicians include doctors accredited in family medicine, internal medicine, paediatrics, and obstetrics and gynaecology. As a result physicians in the primary care setting are able to perform more complicated procedures, freeing up referral specialists to focus on more complex cases. These primary care doctors work in multi-specialty centres that employ between five and 40 doctors and are supported by physician assistants and nurse practitioners, who have their own lists of patients and are able to conduct clinical examinations, make diagnoses, and prescribe some medications. These "physician extenders" increase the number of available clinical staff by almost two thirds. Laboratory, radiology, and pharmacy services are usually available on site. Some centres also have physiotherapy and mental health services, while others include various specialist services

in the same building. In addition, these facilities are open in the evenings and weekends for urgent visits (table 3).

Specialists are categorised somewhat differently across the two systems. For example, the United Kingdom has many hospital based "general medicine" specialists. These are most similar to "hospitalists" within the Kaiser system, though some primary care physicians also follow their patients in the hospital setting. It is clear from table 3, however, that Kaiser has considerably more specialists per 100 000 population than the NHS, even when registrars are included in the NHS specialist numbers. For example, Kaiser has twice the concentration of obstetricians-gynaecologists and three times the concentration of cardiologists than in the NHS. This results in much shorter waiting times for specialist referrals and surgical procedures.

There were nearly four times the number of acute bed days per 1000 population per year in the NHS than in Kaiser (table 3), reflecting large differences in the management of admissions and lengths of stay. The Kaiser average of 270 acute bed days per 1000 population is made up of 193 days for those aged under 65 years and 1031 days for those aged over 65 years (Kaiser, unpublished data). The figure for the NHS of 1000 per 1000 population is for all age groups.<sup>6</sup> If Kaiser had the age distribution of the United Kingdom its acute bed days would be 327, still only one third of the NHS figure. Kaiser acute bed days are low by US standards but not unique.<sup>26</sup>

#### Access and responsiveness

The NHS Plan (2000) states: "The public's top concern about the NHS is waiting for treatment. Waiting to see a GP, waiting to be seen in a casualty department, waiting to get into hospital and, sometimes, waiting to get out of hospital."<sup>1</sup> On 28 February 2001, 45 500 people in England alone had been waiting for more than one year for admission to hospital.<sup>27</sup>

Table 4 shows various comparisons of responsiveness to patients. Access to primary care is similar in both systems, though primary care physicians in Kaiser spend longer with each patient. More time spent with

**Table 4** Comparing responsiveness of NHS and Kaiser to consumers, 2001

Measure	NHS	Kaiser, California
<b>Primary care</b>		
Time to see a primary care doctor	2001: average 3 days; <48 hour by 2004	Urgent <24 hours; routine: 80% <7 days
Telephone helpline and associated services	NHS Direct helpline available. By 2004, NHS Direct will provide one stop gateway to advice, appointments, and out of hours care	24 hour hotline available for advice and appointments. Appointments can also be made on line
Repeat prescription available without calling or visiting a doctor	Available nationwide by 2004	Available today
Time spent with primary care doctor	8.8 minutes*	Medical: 20 minutes; obstetrics/gynaecology: 15 minutes; paediatrics: 10 minutes
<b>Specialist referral</b>		
Waiting time to see specialist	2001: 36% <4 weeks, 20% >13 weeks, 4% >6 months; by 2005, average 5 weeks and maximum 3 months	2001: 80% <2 weeks
Waiting time for inpatient treatment or surgery	2001: 41% <13 weeks, 33% >5 months, 7% >12 months; by 2005: average 7 weeks and maximum 6 months	2001: 90% <13 weeks
<b>Patient convenience</b>		
Patients' ability to book appointments and admissions to suit own schedule	2001: minimal; by 2005: universal	To a high degree
Availability of transition services	By 2003: available by telephone	Available on site and by telephone

Sources: NHS Plan,<sup>1</sup> Office of Health Economics,<sup>23</sup> Department of Health,<sup>28</sup> and unpublished Kaiser data.

\*1992/93 survey.

Table 5 Comparison of quality in the NHS and Kaiser, 1999

Measure	NHS	Kaiser, California
<b>Vaccination</b>		
Children who received various immunisations by age 2 years	DTP=95%; MMR=88%; Hib=94%	DTP=91%*; polio=93%*; MMR=94%*; Hib=91%*; hepatitis B=86%*; chicken pox 83%*
<b>Cancer screening</b>		
Breast	69% of women aged 50-64 years had mammogram in past 3 years†	78% of women aged 52-69 years had ≥ 1 mammograms in past 2 years*
Cervical	84% women aged 25-64 years screened at least once in past 5 years‡	80% of women aged 21-64 years screened at least once in past 3 years*
<b>Diabetic care</b>		
People with diabetes who received annual retinal examination	60%	70% for <65 years; 80% for ≥65 years
<b>Cardiovascular care</b>		
Patients with acute myocardial infarction who received β blockers	42%‡	93%
Coronary revascularisation procedures per 100 000:		
Angioplasty	38§	116
Bypass graft	47§	127
Transplantation per 100 000		
Heart	0.5	0.5
Kidney	2.7	4.8

Sources: OECD,<sup>4</sup> HEDIS,<sup>5</sup> Department of Health,<sup>22</sup> Barakat,<sup>23</sup> NHS,<sup>24</sup> CCHRI,<sup>25</sup> Ayanian and Quinn,<sup>26</sup> and unpublished Kaiser data.

\*Data from Kaiser US (not California).

†2000, England.

‡1997, England.

§1998, England.

patients is associated with improved patient satisfaction and diagnostic accuracy.<sup>29</sup> Table 4 also shows how the Kaiser system provides much more rapid access to specialists and hospitals than the NHS. For example, in the NHS 80% of patients referred to a consultant are seen within 13 weeks whereas in Kaiser 80% are seen within two weeks. One third of NHS patients wait more than five months for hospital admission whereas in Kaiser 90% are admitted within three months.

### Quality

Comparisons of Kaiser with other healthcare providers in California and the United States have found Kaiser's quality and outcomes to be average or better.<sup>30, 31</sup> Clinical outcomes for certain diagnoses in the United States are better than in the United Kingdom. For example, the five year survival for men with lung cancer in the United States is twice that in the United Kingdom, and the five year survival for woman with breast cancer is 24% higher.<sup>32</sup>

Table 5 shows that rates of childhood immunisation and screening for cancer in women are similar, as are rates of heart transplantation, though Kaiser undertakes 78% more kidney transplants. Kaiser patients are far more likely to receive appropriate treatment and intervention for diabetes and heart disease.

It is difficult to compare population health outcomes within the two systems. California's population health outcomes, however, are the same as those in the United Kingdom: life expectancy in men is 75 years and in women is 80 years, and the infant mortality is six per 1000 live births.<sup>6, 37</sup> Kaiser members have similar population health statistics to the California population (Kaiser, unpublished data) and therefore to the UK population.

### Discussion

In this comparative study of the NHS and Kaiser we have shown that though per capita costs of the two systems are similar there are large differences in some measures of performance, particularly in access to

specialists, waiting times, and other aspects of responsiveness to patients. The validity of our findings could be criticised in four main ways.

*Does Kaiser provide as comprehensive a service as the NHS?*—Eight million Kaiser members receive all their health care in the Kaiser system, and the services offered by the two systems are surprisingly similar. Where there are differences, for example in long term psychiatric care and dental care, we have adjusted the NHS per capita costs.

*Does Kaiser cover a healthier or richer population than the NHS?*—Few Kaiser members are rich or very poor. We have discussed the likely affects of this, which we believe to be neutral. To avoid any socioeconomic bias, however, we adjusted costs by an amount that would be equivalent to the NHS not covering the poorest half of the UK population aged under 65 years. We believe that this is an over-adjustment. We did not adjust for those aged over 65 years as elderly people have universal health coverage through Medicare and are appropriately represented in the Kaiser membership.

*Are Californians healthier than UK citizens?*—There is no basis for this belief. The life expectancies in California and the United Kingdom are identical. Both populations live in temperate climates, share similar risk factors, and have many occupational and cultural similarities. If there are differences in the rates of specific diseases these can be partly attributed to the relative effectiveness of the healthcare systems.

*Can Kaiser exclude or terminate membership of sick people?*—About 93% of Kaiser members join through groups or government programmes such as Medicare, where all participants and family members are accepted regardless of health and history. Furthermore, according to California state law, health plans or insurers cannot terminate membership because of illness.<sup>36</sup>

A major potential influence on costs for which we have not adjusted is patient and medical culture. Compared with the United Kingdom there is ample evidence that US patients are more demanding and that US doctors are more interventionist. Adjustment

for these differences would lower Kaiser costs relative to the United Kingdom and make our comparison more robust.

#### Findings to promote further research

The comparison of bed days is the most striking difference between Kaiser and the NHS. This difference explains, to a large extent, how Kaiser can provide more and better paid specialists and perform more medical interventions with much shorter waiting times than the NHS for roughly the same per capita cost. Hospital bed days are the most expensive component of any health system. Inefficient use of beds leads to long waiting times. Limiting the number of beds permits large sums of capital to be freed up to fund improved information technology, comprehensive and convenient primary care facilities, ambulatory surgery centres, and other facilities. Also, scarce clinical resources (such as physicians and nurses) can be used more effectively for prevention, chronic disease management, home care services, and support services to keep people healthy and functioning independently.

If the NHS had Kaiser's acute bed day average (adjusted for the higher proportion of the population aged over 65 years) it could save up to 40 million hospital days or £10bn per year (assuming a cost of £250 per bed day). These savings represent more than 17% of the NHS budget and could be spent on more and better paid staff, better equipment and facilities, and improved information technology. Kaiser, like most US health plans, focuses much attention and many resources on monitoring admissions, reducing lengths of stay, creating disease management programmes for chronic conditions, and opening doctors offices in the evenings and weekends to reduce the use of emergency rooms for non-emergency care.

A second striking difference is in the availability of specialists. Kaiser has fewer specialists per 100 000 population than the US, it provides two to three times the concentration of oncologists, paediatricians, obstetricians, and cardiologists than the NHS. Given the age distribution of the United Kingdom and the higher disease burden of elderly people the NHS would have even lower concentrations of specialists per thousand population on an age adjusted basis than Kaiser.

Some of the differences in numbers of specialists reflect variations in medical practice between the two countries, which, some would argue, do not adversely affect quality of care. For example, in the United States every patient with cancer is managed by an oncologist, and in the Kaiser system obstetricians, rather than midwives or family practitioners, deliver babies. In other cases, however, the shortage of specialists increases waiting times for patients in the NHS and adversely affects quality of care.

As a direct result of the two factors above, large differences in access to care are experienced between NHS and Kaiser patients. Waiting times to see a specialist are over six times as long in the NHS, and even by 2005 the NHS will not come close to Kaiser's access standards. Waiting times for non-emergency admissions are over twice as long and again will not meet Kaiser's average by 2005.

#### Conclusions

Managed care, of which the Kaiser system is one manifestation, is now the norm in the United States,

covering 92% of all those with health insurance sponsored by an employer.<sup>39</sup> Despite this, managed care has recently been criticised by the public, healthcare professionals, and politicians. Indeed, managed care companies rate above airlines, drug companies, and oil companies and alongside the tobacco industry in the degree of public disapproval.<sup>4</sup> Most members of health maintenance organisations, however, report satisfaction with their own health plans.<sup>40</sup>

Our overall conclusion is that healthcare costs per capita in Kaiser and the NHS are similar to within 10% and that Kaiser's performance is considerably better in certain respects, particularly access to specialist diagnosis and treatment and hospital waiting times. We think that there may be several explanations for why this is so.

*Achieving real integration*—Kaiser has achieved real integration through partnerships between physicians and administration and can exercise control and accountability across all components of the healthcare system. This allows it to manage patients in the most appropriate setting, implement disease management programmes for chronic conditions, and make trade-offs in expenditures based on appropriateness and cost effectiveness rather than artificial budget categories.

*Treating patients at the most cost effective level of care*—Kaiser members spend one third of the time in hospital compared with NHS patients. There is ample evidence that reduced length of hospital stay does no harm<sup>41</sup> and, in view of the risks of staying in hospital, may be beneficial.<sup>42</sup> As a direct result of its integration Kaiser is effective in controlling admission rates and lengths of stay and therefore has fewer acute bed days per unit of population.

*Benefits of competition and choice*—Bulk purchasers of health care in the United States, such as federal and state government, large employers, and consortia of small employers, can and do bargain hard on price and quality. Individual members in the United States (whether enrolled through their employer, Medicaid, or Medicare) are offered a choice of health plans and can move each year without penalty. Satisfaction and loyalty of members therefore matter. Kaiser members are a representative subset of the US population and particularly the Californian population. This population has high expectations and will not settle for less.

*Information technology*—The more advanced parts of the Kaiser system have sophisticated and efficient information technology systems that reduce administrative time, particularly clinician's time spent taking medical histories, dictating letters, and locating patient records. Kaiser plans to invest a further \$2b over the next five years (2% of total budget) to extend this virtually paperless patient care system to 423 outpatient centres and over 11 000 clinicians.<sup>43</sup> The NHS plans to spend about 0.5% of its budget over the next few years on development of information technology and hopes to have all general practitioners and specialists connected to NHSNet by 2005.<sup>1</sup>

Of these four overall factors that may explain Kaiser's performance, the NHS is already pursuing reforms in integration and information technology and can continue to do so with no major restructuring. There is also scope within the current structure of the NHS for more efficient use of hospitals, and further

analysis of Kaiser operations and methods may prove beneficial. Competition, however, clearly has more radical implications for the NHS. Creating a truly competitive environment would entail ending or seriously eroding the current monopsony power of the NHS. This would have far reaching consequences requiring greater thought to avoid potential negative effects. Though our findings are not exhaustive they point to the value of comparing healthcare systems. We hope that they will encourage further analysis and policy debate.

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Comparisons of healthcare systems in different countries have to be undertaken with great care but can be instructive

The overall healthcare system in the United States is more expensive than the NHS and population health outcomes are no better

The US healthcare system comprises many discrete and unique subsystems, including the health maintenance organisations

An integrated, non-profit health maintenance organisation in California (Kaiser Permanente), with over six million members, costs about the same as the NHS but performs considerably better

Kaiser's superior performance is mainly in prompt and appropriate diagnosis and treatment

These findings challenge the widely held view that the NHS is efficient and that its inadequacies are mainly due to underinvestment

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#### Correction

*Collaborative meta-analysis of randomised trials of antiplatelet therapy for prevention of death, myocardial infarction, and stroke in high risk patients*

In this paper by the Antithrombotic Trialists' Collaboration (12 January, p 71) a missing two letters make a world of difference to the meaning of the last sentence. The very last word should be "inappropriate" (rather than "appropriate"), so that the sentence reads: "For most healthy individuals, however, for whom the risk of a vascular event is likely to be substantially less than 1% a year, daily aspirin may well be inappropriate." We apologise for this error.

## Commentary: Funding is not the only factor

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If there ever was a time when there was a political imperative in the United Kingdom to improve public services, this is it. In the case of the NHS, the reason for suboptimal performance has most frequently (and conveniently) been thought of as due to chronic lack of funding. Discussions on how to improve services have therefore usually centred on levels and methods of financing the service. Though funding is obviously important, what other factors are also crucial?

Feachem et al have presented an interesting comparison of the costs and performance of two health systems—Kaiser Permanente and the NHS. Any study of this type stands or falls by the accuracy of the comparisons, in particular in comparing like with like across both systems. The authors go some way in this respect, with adjustment for numerous factors. The two chief adjustments made in the comparison of costs—to ensure that the age, socioeconomic status, and illness levels of the populations served are comparable and to ensure that the benefits offered in both systems are similar—are broadly addressed and discussed by the authors, including their limitations. It is, of course, possible to challenge the details of such adjustments and the assumptions (and data) on which they are based. The main question is, would such debate change the broad findings—similar per capita costs between the two systems yet some clear differences in performance? I suspect not.

Such findings are important for debate, in particular to shift thinking from ever sterile discussion over what is the “right” level of funding or method of financing for the NHS to thinking about improving performance. But to be useful as a starting point for shaping policy for the

NHS, clearly much more work would need to be done to compare the two systems in a more detailed way and to examine further the arguments and data that have been used in the paper. If the broad messages stand as presented, a fundamental question to ask would be why Kaiser can apparently provide care to a higher performance at similar cost? The authors rather modestly suggest four main reasons: better integration of care; treatment of patients at the most cost effective level of care; the benefits of competition and choice; and better information technology. But the truth could be a far bigger set of factors. Specific factors could include the form of organisation, the level and type of financial incentives operating, the extent that power and decision making concentrates at the top of the organisation, and the number and training of staff. Other and possibly more important factors could include the type of leadership, the quality of management, the ethos of service in the organisation, how staff are valued and promoted, and the extent of party political involvement in management. We simply do not know enough, and the science of inquiry into these areas is hardly even in its infancy. Meantime in the NHS, time is short and so politicians tend to fall back on to fad or ideology to shape the service rather than science (such as it is) or even experience. If I were in their shoes, I would pore over Feachem's paper, encourage a few seasoned chief executives in the NHS with a good track record to go to study Kaiser, take time to learn the lessons, and genuinely follow the maxim “what counts is what works.”

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## Commentary: Same price, better care

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A conviction of scarcity abounds in the NHS. To question that claim is perilous, but the paper by Feachem et al runs the risk. Their conclusions, if believed, are blockbusters. They find that the per capita costs in Kaiser and the NHS “are similar to within 10%” and that Kaiser's performance in several important areas, including key preventive practices and the strategically crucial dimension of access to care, is “significantly better.”

Should we believe it? The adjustments needed to allow an “apples to apples” comparison are tough, but the methods in this paper are good enough to sustain the basic point. Most crucially, the paper is believable primarily because of one key difference between the systems that can almost alone explain a great deal of what else the authors find—namely, that the NHS today uses about three times as many days of hospital admission per capita than the best American care systems do, with age adjusted figures of 1000 bed days per 1000 population compared with Kaiser's 327.

This leads to the question of why Kaiser patients get “more for their money” than NHS patients do. The

key answer is that the systems differ in their capacity to configure care according to the needs of the patient throughout an episode of illness or, in the case of chronic illness, the patient's life. Kaiser integrates care much more reliably than the NHS does.

Kaiser achieves both its favourable cost structure and its superior performance largely through its enormous capacity to help to manage a constructive patient journey from the outpatient arena to hospital and specialty services and back. This vision—one integrated patient “journey”—is the right one for the NHS to seek, and yet, strikingly and paradoxically, the healthcare system in the world best positioned to manage care often does not. The results include an unnecessarily log jammed hospital sector, long waits, and a sense of scarcity.

This could change. The NHS could become the integrated care system it should be. Well designed care for populations must always align the concerns of hospitals and specialists with the objective of treating patients at the appropriate level of care. Hospitals must regard an unneeded day of stay in hospital as a defect,

and specialists must understand that their primary job is to include participation in coordinated care, not just to render care. The challenge goes far beyond mere cooperation between primary care clinicians, hospitals, and hospital based specialists. It requires development and implementation of a systemic vision of the configuration and resources needed for a care system at the population level. Rates of hospital use are a litmus test for integration of care.

I suggest that a social experiment would help the NHS. Let one area with one or two million citizens, under the guidance of a strategic health authority and with the support of the primary care trusts and hospital trusts within it, undertake a bold, four year effort to redesign patient flow and resources to aim for the Kaiser system benchmarks. With the same resources as

at present, plus its share of the government's new investment, let that area aim for a 50% reduction in hospital bed day use per capita as a sentinel effect of integrated care, reallocating capital and operating funds as needed to achieve that from hospital care to outpatient specialty care, supportive information technology, care coordination processes, and enhancements of support to the primary care clinicians. Let its performance goals include dramatic reductions in waiting times for necessary hospital beds and specialty services. Let it tolerate no harm at all accruing to patients as it pursues this aim. On the contrary, let it promise its patients a level of continuity and safety in their care never before experienced.

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## Commentary: Competition made them do it

Alain C Enthoven

One can always argue over details in such an analysis, but I believe Feachem et al got it about right: Kaiser Permanente produces more value for the resources used than the NHS does. The reduction of two thirds in hospital use is particularly striking, as is the greatly increased availability and accessibility of specialists. And I think the authors got the basic explanatory factors right. British people ought to think about how and why Kaiser does it.

Kaiser exists in an extremely competitive market. Every member can change health plans once a year, and in California they have good alternatives. The programme attracts the loyalty, commitment, and responsible participation of its physicians. Primary care physicians are partners of the specialists, and they work together in the same facilities. As Feachem et al observe, the system is an integrated whole.

How can the United Kingdom obtain the advantages of a more efficient healthcare system? As secretary of state Alan Milburn has apparently and recently come to realise, consumer choice and competition are absolutely critical.<sup>1,2</sup> One possible way forward would be to create a "wide open market" for hospital services in which private hospitals in Britain and European hospitals can compete to serve NHS patients. (This can be contrasted with the comparatively timid "internal market" that envisioned competition mainly among NHS hospitals.<sup>3,4</sup>) Next, primary care trusts should be helped to develop the information, skills, and methods to purchase services from private sector and European hospitals. The NHS should seek to become a reliable business partner to attract investment to care for NHS patients. The present strong bias in favour of NHS hospitals, with others used only as a last resort, should be removed.

Primary care trusts would still be in monopoly positions with little or no incentive to improve services or allocation of resources. In large metropolitan areas patients should be given the choice of primary care trusts, with the ability to take their risk adjusted capitation payment with them to the trust of their choice. Moreover, trusts could hire their own secondary care

specialists, if they found it economical, letting them grow gradually into multispecialty group practices.

For a truly efficient competitive market to evolve the government must be sure that key foundations are being built.<sup>5</sup> As Margaret Thatcher said, "Money must follow patients" so that hospitals that succeed in attracting more patients don't get more work without the appropriate increase in resources. The corollary is that less money flows to hospitals that do not attract patients. Real competition can be brutal. Through educating the public the government must create political space for the market to work. It must press forward aggressively with its information agenda so that risk adjusted outcomes, waiting times, and data on patient satisfaction are available to patients and referring general practitioners. (Similar information requirements should apply to private sector and European hospitals.)

Hospitals need to do a better job of understanding hospital costs. Primary care trusts must have complete freedom to purchase from the best suppliers (where "best" depends on the preferences and characteristics of each patient). The government should encourage a competitive hospital sector and block, or even reverse, mergers that substantially reduce competition. The government needs to operate a competitive capital market for NHS hospitals in which capital follows patients. Finally, there needs to be a common language and currency for buying and selling the many complex services that go into health care so that comparisons are easy to make and transaction costs kept low.

Competing interests: ACE has been a consultant to Kaiser Permanente for 28 years. He does not believe that his conclusions will affect their financial results.

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