

Round Table

Tackling wastage and inefficiency in the health sector

David Parker & William Newbrander

Governments and the public are concerned about waste and inefficiency in the health sector. Although there are likely to be various underlying causes, wastage often results from limited information and from limited accountability for decisions about the use of resources. Corruption and fraud occur where there are conflicting interests in combination with limited accountability. Policy-makers, managers, providers and service users should feel responsible for ensuring that scarce health resources are used efficiently. They should actively combat wastage by identifying the causes, and then make corresponding changes in policy, management and technical procedures.

Spiralling health care costs are causing worldwide concern, and a key component of health sector reform efforts in many countries has to do with making the best use of existing resources (1). Accounts in newspapers, journals and reports have alerted the public and governments about the wasteful use of money (2), health personnel, time and supplies in the production of better health, as shown in the following examples.

- On 8 January 1992 The Guardian reported that a psychiatric hospital in an industrialized country had been cited for paying bounties to the police and others for bringing insured patients to the institution, keeping patients longer than necessary, billing for services that were not provided, and inflating charges.

- In November 1991 the College of Radiologists in another industrialized country reported that 20% of X-rays were unnecessary and that their cost was equivalent to US$ 100 million a year.

- A report from a developing country indicates that, in its hospital services, the government is paying three times the price charged for aspirin in private pharmacies. This arises because of questionable procurement practices, which may include the giving of kickbacks in connection with the awarding of government tenders.

- In another developing country, civil service regulations prevent the transfer of nurses from a hospital medical ward with only 40% occupancy to a paediatric ward with an occupancy rate of 120%; as a result, medical patients receive too much care while paediatric patients receive too little.
What can be done to correct such situations? What are the costs of wastage, and on whom do they fall? Can common causes be identified in different situations and are the solutions similar?

**What is wastage?**

Efficient health systems provide a maximum of quality health care at a minimum cost. Few countries, if any, reach this standard of economic efficiency (3). Very frequently either expenditure is higher than it should be or the amount and quality of health care are lower than they could be for the costs incurred.

*Inefficiency* occurs when the resources used to produce a given result are greater than necessary. *Wastage* is the careless use or squandering of resources, often in connection with excessive or particularly conspicuous inefficiency.

 Allocative inefficiency is said to occur when decisions on what to do with limited resources fail to yield the greatest possible health gains at the lowest possible cost. It is seen where the health care system does not provide enough for priority diseases or when health facilities are located beyond the reach of the people who need them. This occurs, for example, when funds are allocated to urban areas instead of the underserved rural populations, or to tertiary care despite greater needs in primary care.

### Are we wasting our health resources?

Wastage by under- or overutilization of facilities, people, and health inputs is an inadequately studied issue. The small number of careful assessments of the value of "wasted" resources, however, puts them as very large in the health systems of rich and poor countries alike. A study in one African country suggested that 44% of non-salary recurrent budget expenditure of the principal hospital in that country could be saved by a series of simple management improvements. The study of another African country's financing options suggested potential savings by better management of pharmaceuticals of up to 40% of existing expenditures. In one industrialized country, estimates of inappropriate use of hospital resources are 6-40% of admission, and 20% of bed-days. Much bigger potential cash savings are argued to be available from the elimination of "useless medical practices". Overall savings of some US$ 20,000 million are thought possible. For the countries of the Americas as a whole, an estimated 25% of total health expenditure is wasted. Though fragmentary, the evidence is of huge potential economies by better resource use within the existing system. Such information is not secret, of course, and is one of the contributory reasons why the governmental health sector is such a weak party in the negotiation of financial support. Its own house is not in order.


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Health workers are often assigned tasks that do not correspond to health priorities.

*Technical inefficiency* is found where the costs of providing specific services or goods are higher than necessary. This happens when inappropriate resources (technology, drugs, senior health workers, etc.) are used instead of a cheaper alternative of similar quality. For example, if a health centre has been designed and staffed to handle 20,000 visits a year but in fact is only handling 10,000, the cost of each visit is clearly higher than necessary.
Facilities, equipment and personnel are frequently used inefficiently and indeed are often idle because drugs and other complementary resources are unavailable.

The common element in these two types of wastage is that resources are not utilized to their greatest possible effect for improving the health status of populations.

**Sources of wastage**

Broadly speaking, inefficiency and wastage arise at the levels of:
- policy-makers and health service funders;
- health service managers;
- providers;
- households and communities.

Examples of the type of decisions that may result in wastage are given in the table. The *policy level* refers to decision-making by officials in health and related ministries and private agencies, by senior managers of health services, and by funders such as insurance companies, social security agencies and employers. In developing countries, multilateral, bilateral and international nongovernmental organizations are important members of this group through their influence on the type and structure of assistance.

Decisions on resource allocation made at the policy level affect the whole health system and are often responsible for the largest amount of wastage. Major problems can be caused by decisions to provide support to facilities and levels of care that do not meet the criteria for primary health care (i.e., they do not meet the needs of the majority of people). Funds may not be available to operate services for which facilities and health workers are in place. This often arises when external funding to pay salaries is stopped, or when exorbitant prices are paid for pharmaceuticals because of lack of appropriate procurement procedures. Problems sometimes arise because donors insist on support for inappropriate facilities and services and for multiple vertical programmes, resulting in considerable duplication.

At the *managerial level*, it is unfortunately true that health workers are often assigned

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tasks that do not correspond to health priorities. They may be concentrating on medical care, leaving little time for prevention and outreach activities. As a result, staff may be idle during much of the time when facilities are open to the public. Drugs and other supplies may not be available in sufficient quantity for health care. Supplies may sometimes exceed requirements, leading to the expiry of safe time limits and subsequent dumping. Losses due to pilfering and poor storage conditions are also frequent. Physicians in private practice also make many decisions of the kind made by health service managers.

Decisions about the means of transport are frequently made at the policy level, whereas those on the use of vehicles are made locally. Provision of four-wheel vehicles instead of motorcycles or bicycles for covering short distances, and the use of official vehicles for personal purposes, are common causes of wastage. Vehicles may be out of service for excessively long periods because of poor maintenance or lack of spare parts.

Decisions that result in the wasteful use of resources are not always entirely under the control of the immediate decision-makers: managers at peripheral levels, for example, may have to implement mistaken policy decisions.

Health care workers are responsible for many important decisions about the use of resources. Efforts to achieve health care reforms may encounter differences of opinion about the definition of wastage. There is general agreement, however, that much wastage can be reduced at all levels of care without adversely affecting the quality and amount of care provided. Health workers in developing countries often prefer to concentrate on curative rather than preventive care, and physicians may prefer to concentrate on complicated cases and the “rare case” rather than on priority health problems. There is also a widespread tendency to prescribe too many, and sometimes unnecessary, drugs and proprietary drugs rather than the much cheaper generics.

The users of health services are also responsible for wastage. In many cultures people expect — and demand — a prescription and often an injection, irrespective of actual need. Sometimes the prescribed drugs are not used and are subsequently thrown away, or are not used according to instructions. Patients may seek treatment unnecessarily, especially when services are free or very cheap, and easily accessible. Services may also be underutilized owing to information deficiencies or other factors, resulting in serious health problems.

Wastage may occur because the decision-maker did not have sufficient information about cost-efficiency and cost-effectiveness. It may also result from deliberate misuse of resources, as happens in cases of corruption or fraud. Corruption occurs where there are conflicts between personal and service interests, resulting in the payment of higher prices than necessary for drugs, equipment, and even buildings, which benefit the decision-makers at the expense of the users of the health care system.

**Cost estimates of wastage**

It is not easy to measure wastage in health care, both because there may be problems of definition and because adequate data are not available. According to one estimate,
US $10,000 million are wasted annually in health care in the Latin American and Caribbean region (4). In one industrialized country alone it is believed that fraud and abuse could account for US$100,000 million of health spending each year.

These estimates involving large sums of money indicate the magnitude of the problem of wastage. Any corrective action, however, has to be based on data obtained from efficiency studies of single elements or subsystems of the health sector. Thus an investigation in one African country revealed that 40% of nonpersonnel recurrent costs in a large teaching hospital represented wastage that could be eliminated by simple changes in management, such as improved monitoring of expenditure (5). The wastage due to excessive costs for specific items such as drugs and equipment used throughout the health system can be estimated by multiplying the price differential between the actual price paid and the minimum price by the quantity employed. In order to arrive at the savings attainable through various actions it is necessary to make judgements based on experience and knowledge of the health care system. The cumulative effect of different actions aimed at reducing wastage can then be determined by combining individual estimates.

This methodology has been applied in order to estimate the potential savings of rational drug use in sub-Saharan Africa (6). Ten rationalization measures were identified in the areas of drug selection, ordering based on the quantification of needs, procurement, storage and distribution, prescription, and the compliance of patients. Each action represented potential savings of between 5% and 60% in the cost of drugs. If all the measures were implemented it would be possible to save over 85% of the current cost of pharmaceuticals. If only half of them could be put into effect there would still be a reduction of almost 50% in drug costs. Using a similar approach, it was found that additional financing would not be necessary to provide basic health services in one African country, if an essential drugs policy and improved drug procurement procedures were adopted (7).

In order to quantify the amount of wastage it is necessary to obtain reliable data on costs, on alternative prices, and on alternative technologies that might be less expensive but as effective as those in use. Cost-effectiveness analysis, supplemented by other operational research techniques, can be used to determine the magnitude of specific wastage problems. This would increase the awareness of policymakers, managers, health providers and communities about the potential for cost reduction, and how it could be achieved.
Strategies to correct waste

Efforts to reduce wastage should be concentrated in areas where the greatest savings will result. However, the cost of making the necessary changes must also be considered. Wastage can be reduced through changes in the following areas:

- policy decisions (e.g., easing restrictions on the use of staff);
- management (e.g., bringing about increased use of automated laboratory equipment, where appropriate);
- training (e.g., improving the diagnostic skills of providers);
- education and communications (e.g., leading to more appropriate use of services by the population).

Some types of wastage occur throughout the health system and can easily be corrected through administrative and technical mechanisms. These include improvement of the provision of information on costs to all levels, improvement and clarification of accountability, improved supervision and training, and decentralization. The total savings may be substantial: the improvement of diagnostic and prescribing practices by physicians and medical assistants in respect of a few important diseases may produce large savings by reducing unnecessary use of antibiotics or other drugs. Other changes affecting the whole system, such as modifications in civil service regulations or drug procurement procedures, are brought about by policy actions. Strong political backing is required in such cases.

Much wastage can be corrected by local action. Supervision and control of districts with high expenditures and exceptionally poor performance may be strengthened. This can be decided and implemented by local health managers. By and large it is easier to control wastage at this level than at the policy level.

Reducing intentional wastage, that is to say corruption, can prove costly. But control measures are important because of the impact on the long-term functioning of the health system. The confidence of the population in the health care system may depend on this. Corruption and fraud can be combated by creating controls or regulatory mechanisms, or by enforcing those already in existence. Policy changes might be necessary – for instance, empowering regulatory agencies to discipline professionals. Managerial changes such as the introduction of controls on purchases and cash transactions will diminish the possibility of kickbacks and theft.

Training and education are necessary in conjunction with any administrative changes, and suitable incentives have to be devised for both managers and health care providers (8).

Accountability is a key element in the battle against wastage. Clear lines of responsibility between policy-makers, managers and health workers must be established, as well as pro-
Accountability to the population served is also important. This can be achieved through involvement of the population in decision-making on health care through local health committees and the boards of health centres and hospitals. Education and information are also important for the users of services, to ensure that the services are used most appropriately to meet health needs.

Decision-makers should be aware of the costs and impacts of different health actions. This would require an assessment of available resources and a general understanding of how they are used, rather than a detailed economic analysis. Good information is especially important in the health sector because market and price mechanisms do not provide the guidance that managers need to decide what to do. Nor do they help consumers to decide what they need and what to pay for it. It may be necessary to review accounting systems and establish new procedures for identifying areas of wastage. More simple approaches may be adequate at the level of the district or the health facility: the highlighting of key areas of costs that should be monitored, and the training of personnel and members of communities in basic accounting procedures. In each area the monitoring of output and impact is also needed. In particular, data on consultations and cases have to be related to the size of the population served in order to identify and correct problems in the allocation and distribution of resources.

Decentralization facilitates several of the above actions aimed at reducing wastage. A decentralized health system can reduce wastage by:

- providing improved information and feedback for decision-makers;
- increasing the control of managers and providers over factors affecting wastage;
- increasing the accountability and responsiveness of the health system to its stakeholders.

Wastage occurs in the health systems of all countries, and very little is done to change the situation. Rather than steadily seeking more funds, health care systems would do well to take energetic action to reduce wastage.

References
Discussion

Surplus, imbalances and spiralling costs

Alain Autret

A certain amount of inefficiency as defined by Drs Parker & Newbrander is fairly conspicuous in the French health sector. There is a surplus of medical personnel and services, and this leads to an excessive number of medical check-ups and consultations. Some practices are of no benefit to most people: routine check-ups that increase in frequency after a certain age has been reached; regular appointments for the prescribing of long-term medication; routine visits to general practitioners after appointments with specialists or stays in hospital. The cost of such superfluous consultations is augmented by unwarranted procedures that are the implicit and often unconscious justification for them, namely the prescription of unessential medication, the unnecessary monitoring of blood plasma, and the carrying out of laboratory tests in the absence of symptoms.

In France, physicians are the sole judges of the procedures and drugs they prescribe: their decisions are never questioned and rarely encounter restrictions, yet they are under no obligation to update their medical knowledge.

Surplus personnel and facilities are also evident in the wide scope and redundant nature of some diagnostic procedures. Thus, for example, extensive tests are routinely prescribed for minor symptoms when there has been no proper clinical examination. This is particularly marked in connection with non-invasive procedures, which, indeed, may be duplicated when hospitals repeat what has been done by general practitioners, or vice versa. The use of obsolete or inappropriate exploratory techniques further aggravates the situation.

These excesses are possible because, in France, physicians are the sole judges of the procedures and drugs they prescribe: their decisions are never questioned and rarely encounter restrictions, yet they are under no obligation to update their medical knowledge. Doctors control the amount of work they do and hence their incomes.

Therapeutic procedures are, of course, subject to rising prices. Drugs are constantly being replaced and new products are marketed at increasingly high prices, purportedly for the treatment of resistant cases but in fact with the intention of replacing less costly medications. The market becomes saturated and marketing techniques are used to promote the prescribing of the most expensive drugs.

The prescription of so-called pacifying drugs is more directly responsible for wastage, the costs being reimbursed through insurance schemes. Although these products often possess some pharmacological properties they have not been proved beneficial in respect of the stated indications.

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More insidiously, certain surgical procedures are performed without justification. For example, old people are subjected to many reparative and preventive operations without consideration of the risk/benefit ratio. Costly prostheses may be introduced even though their usefulness has not been demonstrated. In this field there is no equivalent of the rigorous regulations that govern the marketing of new drugs. However, a law has just been passed which limits the perquisites offered to doctors in exchange for prescribing the products of particular manufacturers.

The hospital system in France is inadequate for the care demanded. There are, on the one hand, sophisticated treatment centres, often with large numbers of patients who should be in general hospitals or other institutions, and on the other hand there are some understaffed, underequipped and underused district hospitals that remain open for local political reasons. Furthermore, the problem of where to look after old people has not been solved.

Thus the main factors accounting for financial wastage in the French health sector are a surplus of medical staff and services, the rising cost of drugs and investigative procedures, too much surgery, and inadequacies in hospital equipment. However, it should be noted that the quality of care is excellent and that equality of access to treatment for disease has largely been achieved.

Two outstanding questions remain unanswered. How long will the French economy be able to tolerate the costs of wastage in the health sector? And how will health professionals react to the standardization of their practices that is so necessary?

The main causes of wastage in France are inadequate regulation, organization of primary care, and quality control in public hospitals

C. Béraud

As in other countries there is considerable wastage of resources in the French health sector, affecting economic development and the well-being of the people. A report drawn up in 1992 by the health insurance organization covering 80% of French workers indicated that wastage in the country’s health care system amounted to Fr 120 000 million (approx. US$ 20 700 million) annually.

Wastage, which takes on the same forms in France as those mentioned in the main article, can be divided into the following categories:

- **excess**, referring to activities that are scientifically ineffective or unjustified but are not intentional infringements of ethical rules and scientific criteria;
- **abuse**, referring to ineffective or unjustified activities that are intentional infringements of ethical and scientific rules;
- **fraud**, referring to illegal activities that respect neither these rules nor the law.

The Ministry of Health and its decentralized services have neither the human nor the financial resources to administer, regulate and control the health care system, and this leads to exorbitant expenditure. There is a shortage of epidemiological data and a complete absence of information on medical activities. The lack of transparency concerning diagnostic and therapeutic practices means that physicians can do as they wish without fear of being monitored.

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Budgetary regulation supposedly exists for admissions to public hospitals, but financial resources are often increased beyond the levels initially set. The private sector is always ready to provide outpatient treatment, and budgetary control has recently been introduced for private hospital treatment.

It is intended that monitoring and adjustment of medical activities in accordance with need should begin in the private sector in 1994, but as yet there are no such controls in the public sector. Clearly, in the absence of such regulation it is impossible to assess the quality of the health care system.

France has no primary care system: physicians choose where they want to work and have no defined responsibility towards the populations they serve, particularly in regard to prevention. In order to obtain primary care, patients can consult general practitioners or specialists or can attend hospitals. Physicians are paid for each clinical service they render, and consequently they tend to perform a great number of them. This is particularly true of specialists, of whom there are far too many. The absence of a system of referral from general practitioners to specialists militates against the coordination of treatment, follow-up, therapeutic compliance, and the local development of health policy, especially in the sphere of prevention.

Because of the shortcomings in quality control in public hospitals it is exceedingly difficult for their administrators to improve diagnosis, treatment, care, information, training and research, which are often average in medical terms, mediocre in economic terms, and completely inadequate in social terms.

A wide range of measures can be adopted in order to combat wastage:

- training of students and health professionals in public health, economics and social welfare;
- specific training for general practitioners;
- provision of substantially increased government resources for supervision;
- decentralization of management and supervision of medical activities;
- establishment of a system of referral from general practitioners to specialists;
- payment of capitation fees to general practitioners;
- instituting strong hospital administration that gives good management and places the interests of patients above those of physicians;
- coding of diseases and clinical services;
- reduction of the proportion of specialists with private practices;
- raising the proportion of general practitioners and hospital doctors;
- establishment of budgetary regulation;
- development of guidelines.

It is not easy to change a situation in which large amounts of money are spent on medical activities that are useless in terms of improving people's health. Physicians are often intent on defending their lifestyle rather than the quality and duration of life of the people they serve. Health professionals can obtain a degree of affluence that exceeds their social value and are very capable of defending it. The credulous and ill-informed behave in ways that augment wastage. Health facilities and institutions are not properly geared to the needs of patients and populations, but there is an absence of the political will that would be needed to change matters for the better.
In the developed countries the medical profession, having gained the trust of politicians and the people, has gradually built prohibitively expensive health care systems of decidedly limited social value. Their low productivity makes it ethically imperative to change them so that the resources they waste can be channelled into health development.

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**Fraud: a serious source of wastage**

Edward J. Kuriansky

The authors of the intriguing main article have only cited fraud in passing as a significant source of wastage. Yet, as medical practice, health legislation and financing patterns change, the importance of controlling fraud and abuse in the health care industry should not be underestimated in the economic equation. There have always been, and will be, profiteers seeking to exploit the next great loophole in the health care system.

Estimates of health care fraud in government and private insurance programmes in the United States range from US$ 80 000–100 000 million per year, or about 10% of the country’s total health care expenditure. The Government’s Medicaid health programme, covering 28 million of America’s poorest and oldest citizens, amounted to around US$ 100 000 million in 1992. Of this, a huge amount every year – somewhere between 5% to 20% by most estimates – is lost through fraud and abuse.

The wide range of fraudulent practices found within the Medicaid programme mirrors the myriad abuses that plague the entire US health care system. Among the more egregious Medicaid frauds uncovered across America in recent years have been:

- disreputable providers of incontinence supplies in California who obtained eligibility information from beneficiaries and billed the Medicaid programme millions of dollars for patients who were not incontinent or for supplies that were never ordered or delivered;

- dozens of ambulance firms in Wisconsin that obtained unlawful payments by submitting expenses for inflated mileage or non-existent “second attendants”, charging for trips either not made or not requested by physicians, and paying kickbacks to passengers;

- pharmacists in Virginia who filed claims for costly medications that were neither prescribed by a doctor nor received by a patient;

- a Tennessee physician – living in the United States illegally at the time – who stole US$ 200 000 by billing for CAT scans never performed;

- a Florida psychiatrist who spent an average of less than 5 minutes with each patient, but charged Medicaid for 45–50-minute individual psychotherapy sessions;

- in New York, a vast network of physicians, pharmacists and Medicaid recipients blatantly engaged in the illicit supply of drugs and prescriptions for sale on the black market. (The recipients, often drug addicts, “consult” unscrupulous doctors and obtain unnecessary prescriptions for a long list of

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expensive drugs. These physicians operate from seedy storefront offices and sometimes “examine” — or rather question — their so-called patients by telephone through a window in a partition-wall. In some instances, the doctor’s receptionist or security guard will even tell the patients in a crowded waiting room what symptoms they should report and what drugs the doctor is willing to prescribe on that particular day.

To combat such flagrant abuses, the US Congress in 1977 established and funded the national Medicaid Fraud Control Unit programme. Currently operating in over 40 States, the fraud units are federally funded, state-run law enforcement agencies which investigate and prosecute provider fraud and administrative misconduct in the Medicaid programme. The units also follow up complaints of patient abuse and neglect of the elderly in nursing homes and other Medicaid-funded health care facilities. Each unit is staffed by a professional team of attorneys, investigators and auditors specially trained in the complex litigation procedures of health care fraud.

Since the inception of the Medicaid Fraud Control Unit programme, the units have successfully prosecuted more than 6000 corrupt medical providers, vendors and patient abusers, and have also identified and recovered tens of millions of stolen Medicaid dollars.

Profiters are always ready to exploit loopholes in health care systems.

Perhaps more important than any specific prosecution or monetary recovery, however, has been the units’ strong and demonstrable deterrent effect. Following intensive enforce-
Education, information, decentralization and intersectoral collaboration can all play their parts

N.A. Nath

As is made clear in the main article, the wasteful and inefficient use of resources in the health sector is a matter of concern everywhere. In developing countries the matter is particularly serious because there is a competing demand for resources for subsistence, a problem not encountered in the developed world.

In India, basic training is not always related to job responsibilities, and there is a tendency to produce too many specialists. Time-wasting may be substantial, particularly in rural areas, and professional staff are often not utilized in the most appropriate ways. This can lead to the inefficient use of beds and other resources, and may delay or completely thwart the achievement of objectives.

In general, inefficiency in the use of manpower can be tackled by:

- raising management standards among professionals;
- improving teamwork among primary care staff through training and retraining;
- using professionals only to perform tasks for which they have been trained;
- providing residential accommodation for primary care workers close to the areas where they work;
- improving staff mobility.

Much duplication of investigations occurs, particularly in government institutions, because of the absence of regionalization and a proper referral system; patients tend to move unrestrictedly from one institution to another. Too many unnecessary investigations are requested by private practitioners, a problem that is increasing because of the recent introduction of a consumer protection act.

With regard to drugs, the cost of treatment is inflated by overprescribing, the use of placebos, and, under the influence of firms promoting proprietary brands, the prescribing of expensive products when cheaper ones are just as effective. Medicines are often wasted or unused because patients are given inadequate instructions. Failures in supply procedures, particularly in relation to shelf-lives, lead to wastage and unavailability of medicines and indirectly to the loss of time by both patients and professionals. Bad storage practices can lead to theft, time-wasting by personnel, and loss of drug potency.

The procurement of equipment does not always reflect actual needs, with the result that costly items sometimes lie idle. The same consequence is frequently attributable to faulty maintenance procedures.

Where deficiencies occur in the means of transportation, supervisory functions suffer, professionals spend time on inappropriate activities, and the secondary and tertiary levels of care are underutilized.
It frequently happens that access to services is restricted to people living within a few kilometres of primary care centres and related facilities. The inhabitants of peripheral areas tend to be underserved or unserved and consequently the facilities are underutilized. There may be deficiencies in referral support for primary care because of either poor organization or inadequate transport. This leads to abuses of the secondary and tertiary levels of care, principally by urban populations, while rural dwellers remain underserved.

A further factor militating against efficiency and the avoidance of wastage is that excessive attention is given to curative measures while health promotion and the prevention of disease and disability are neglected.

With a view to improving matters, efforts are being made to give both basic and in-service training a more need-based character, to strengthen the managerial competence of personnel at the various levels of the health care system, to foster a comprehensive approach to health care, and to increase the ability of staff to make the best possible use of resources.

Progress is being made towards decentralizing the planning and implementation of health services and gaining a higher degree of community participation in these matters. Primary care centres with reduced catchment populations of 30,000 are being established, with subcentres covering 5,000 people, so as to make services more accessible.

Intersectoral linkages are being forged so as to maximize the benefits obtained from inputs. Thus activities in the field of diarrhoea control are being linked to those connected with rural sanitation, and comparable links are being made between nutrition and employment-generating schemes.

Much attention is being given to activities in information, education and communication, with a view to inducing desirable social changes and encouraging the participation of the people in health care activities.

Nongovernmental organizations are being encouraged to involve themselves in health care delivery in the hope that this will diminish duplication, enhance community participation, and bring about improved utilization of facilities.

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**Much good can flow from decentralization**

*Raj Karim*

The main article is a timely reminder of some of the difficulties of achieving the health-for-all goals. A fresh appraisal is undoubtedly needed of ways in which wastage and inefficiency in the health sector can be tackled.

In the drive to expand coverage and infrastructure it is important not to overlook management in the interest of quality. Health professionals may concern themselves only with technical matters, yet the management of health services is often weak, resulting in wastage and inefficiency. Problems are common

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in the areas of referral and feedback, transport and communication, information, drug and equipment supply, supervision and training, knowledge of basic health matters in the community, and so on. Such shortcomings tend to depress the morale of health providers, especially at the district and community levels, and thus to increase wastage affecting facilities, personnel and financial resources.

Highly centralized health care systems, with little flexibility in the allocation of funds, manpower and other resources, are particularly likely to engender inefficiency. With a view to improving management, efforts have been made to achieve regionalization of health care, to build and strengthen district health systems, to introduce financing and user charge schemes, and to bring about cost containment and resource allocation.

In Malaysia, for example, the allocation of budgetary funds has been decentralized to the district and organizational levels during the last three years. This has provided useful experience in maximizing the utilization of resources in order to obtain a desired output as monitored by defined indicators. Priority is given to tackling urgent problems and factors affecting people’s health by means of an integrated approach that permits the best possible use of manpower, funds and logistical support. Management training is provided for district teams, with the aim of raising efficiency through local initiatives, among them the following:

- strengthening of health education and promotion in collaboration with nongovernmental organizations;
- enabling communities to support and participate in the work of the health services.

Among other moves towards reducing wastage and improving efficiency, attention is being focused on improving the utilization of beds in district hospitals, the integration of services is being pursued, a more effective system of supervision is being developed, and the management of mothers and children at risk is being made more effective.

Much can be done along these lines if there is sound management at all levels, provided that authority and responsibility are suitably delegated and that some attention is given to the morale and attitudes of personnel. Wastage and inefficiency are only likely to be overcome when the barriers to health care are broken down, whether they be administrative, technical, behavioural or geographical, and when basic services are made available to all and appropriate care is given to the people in greatest need.
The behaviour of donors and their interaction with national authorities have a major bearing on wastage

R. Korte

Wastage, as described by Drs Parker & Newbrander, occurs in almost all health systems. In some developing countries it is a matter of life and death. Although wastage is often severe in these countries, they also suffer from absolute deficiencies of resources, leading to inefficiency because staff cannot be paid to work full time and because budgetary allocations are unpredictable and their disbursement is unreliable. Even in the developed world, unpredictable budgetary allocations and abrupt cuts impede efficient management.

The efficient use of resources requires that budgetary allocations be both predictable and transparent. So that their contributions can be as effective as possible, international donors and implementing agencies should be informed of the timing and volume of national budgetary allocations. It may prove extremely difficult to assess, for example, national contributions to a district health service, and virtually impossible to obtain good information on planned budgetary flows. Donors them-

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selves may create problems if they insist on planning in accordance with their own budgetary cycles and if their resource allocation is insufficiently transparent.

The project approach used by most international donors is also a source of inefficiency in national health systems. The plethora of project mechanisms creates an administrative burden that overwhelms many ministries of health. With certain exceptions, special programmes imposed by donors are barriers to effective and efficient management.

Donors should collaborate closely with national administrations, but should not respond to unreasonable requests. For instance, a new district hospital should not be located close to a town where a recently constructed facility is not in use. It is, of course, extremely wasteful if donors compete among themselves and thereby produce this kind of result, and such behaviour encourages national governments to believe that it is easier to obtain funds for new investments than for the continuation of established programmes. Equally undesirable is the fact that donor agencies and their national partners often concentrate their planning on buildings and equipment while neglecting the operational aspects of health care delivery.

Private contractors funded by bilateral and multilateral donors may be another source of wastage. The firms in question have an interest in perpetuating their contracts, and the actions they take to achieve this may range from subtle lobbying to corrupt practices.

Seminars, conferences and workshops are seen by many donors as making an effective contribution to the building of capacity in developing countries. Unfortunately, these events have become something of an epidemic: they absorb many of the working hours of some civil servants and considerable amounts of public money. Too many experts and members of agency staffs are requested to attend meetings for the introduction and follow-up of new programmes and initiatives. Improved methods of communication are

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needed so that the numbers of people involved in such meetings can be diminished.

The competition for personnel between donors, consultancy firms, implementing agencies and nongovernmental organizations is a further source of inefficiency in national institutions. In countries with very limited professional resources, pressure of this kind may deprive health ministries of their best staff.

Many donor agencies insist that items purchased with their support be acquired in their own countries, a stipulation that impedes the training of users and the provision of maintenance and repair services. The procurement of spare parts for equipment obtained from many different sources presents health ministries with immense difficulties. Problems also exist in relation to pharmaceutical products, even though WHO’s essential drugs list has been available for well over ten years.

Donors, although rightly concerned about inefficiency in many health ministries, should carefully examine their own approaches and policies to see if they are likely to make matters worse. Some donors respond to government inefficiency by shifting resources to the private sector and nongovernmental organizations. Yet the uncritical channelling of resources to nongovernmental organizations should be avoided, since there is no guarantee of success.

Does international aid exacerbate or reduce inefficiency?

Birger Carl Forsberg

As is mentioned in the main article, allocative inefficiencies sometimes occur because donors support inappropriate services or programmes. Any analysis of aid should take account of the intentions behind it. On the one hand, aid is meant to support development and reduce poverty, and on the other it is used to win political support in both the donor and recipient countries; additionally it is often linked to economic interests.

There are many instances of donors having supported the construction or renovation of hospitals in central situations in recipient countries so as to satisfy political groups in the donor countries or to provide markets for their own exports. The running of some such hospitals consumes a substantial proportion of health budgets in several countries of sub-Saharan Africa, and gross inefficiency results.

Donors also contribute to inefficient resource use by insisting that aid be used to buy equipment or expertise from the donor countries. This may happen, for example, when alternative products are available on the world market at competitive prices. In these circumstances the purchasing power of financial aid is diminished.

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Poor coordination of assistance from donors sometimes results in the duplication of effort. On occasions, donor governments evidently have a stronger interest in activities that carry

Donors should not merely support efforts to use resources more efficiently in recipient countries but should also explain to their own publics how aid can be made more cost-effective and less wasteful.

their name than in participating with other donors in projects coordinated by ministries of health in recipient countries. At present there is a fashion for health sector reform and cost recovery, and several donors are promoting their own projects in this field without considering that merging forces might be more cost-effective.

Donors are well aware of these problems but still have difficulties in coming to grips with them. They need not merely support efforts to use resources more efficiently in recipient countries but should also explain to their own publics how aid can be made more cost-effective and less wasteful.

Television audiences in the developed world are frequently impressed by presentations of costly and spectacular interventions in developing countries. Rarely is comparable attention given to aid workers who, at low cost, routinely provide life-saving food, immunization and oral rehydration in refugee camps or remote villages.

Of course, donors have taken steps to reduce inefficiency associated with aid projects.

WHO seeks to form partnerships with other agencies and with bilateral donors, and there have recently been attempts to organize a network on health policy issues in order to strengthen the international resource base and avoid duplication of effort in implementation and research. In some countries, among them Uganda and Zambia, donors meet regularly to inform each other about their collaboration with the ministries of health.

The call for increased emphasis on primary care made at Alma-Ata can be seen as a quest for improved *allocative efficiency*. Similarly, the World Bank has suggested that governments should shift some resources from secondary and tertiary care so as to gain more health care for their money. Bilateral donors support these moves.

*Technical inefficiency* has been tackled in management training promoted by bilateral donors and by WHO, UNICEF and other agencies. In several disease control programmes, policies have been devised which indicate how resources can be better employed. For instance, considerable savings can be made if diarrhoea cases are treated with oral rehydration salts, a cheap and powerful remedy, rather than with ineffective and costly drugs. Essential drug programmes have emphasized the need to limit the use of drugs, for which cheaper alternatives of equal potency exist.

With regard to the fight against *wastage* it is worth mentioning immunization programmes in which the use of temperature monitors in the cold chain has been promoted with a view to reducing losses of vaccines.

In the international community there is undoubtedly an awareness of the costs of inefficiency and waste in the health sector. The tools for analysing costs and effects are being rapidly developed, and it is to be hoped, therefore, that resources will be better used in the future for the benefit of the sick and the poor.
Ethical aspects of wastage

Inge Lænning

Notwithstanding the weight given by Drs Parker & Newbrander to economic considerations, it should be borne in mind that cost-effectiveness is no more than an instrument and precondition for achieving the primary goals of human activities; it is not a primary goal itself. The primary goal of a health system can be seen as providing all members of society with the quantity and quality of services required to enable them to meet the challenges of their conditions of life. The promotion of cost-effectiveness, which is a precondition for moving towards this goal, is a moral obligation for health systems and the people working in them at all levels.

Health systems should concentrate on solving problems that they are professionally competent to tackle. They should not accept responsibility for dealing with sociocultural conflicts of the kind that the public and the political authorities might regard as “health” problems, but which cannot be properly dealt with through sound methods of diagnostic medicine: medical treatment cannot compensate for deficiencies in family life and society at large.

Health systems should set their own priorities on the basis of ethical principles and criteria for decision-making in accordance with public debate and consent. The formulation of goals, principles and criteria is not a task for people running health services but is a joint responsibility of all who are served by them.

Health systems exercise substantial power by virtue of the fact that they administer and distribute a substantial part of the economic resources available to communities. Power, by its very nature, is open to individual and collective abuse. The only way to avoid abuse of power is to expose the systems to control and criticism, both internally and externally. Openness and transparency is a fundamental moral requirement for organizations that exercise power and for the individuals authorized to represent them.

In order to fulfil their moral obligations, health systems should resist all tendencies towards fragmentation. The health sector should not be allowed to degenerate into a battlefield of narrow interest groups promoting their cases through the mass media. If it is structured by the “struggle for life” principle, the outcome inevitably will be the survival of the fittest, i.e., those who are most influential or inventive in getting access to public opinion and the political agenda. The immorality of the decibel method of resource allocation is clear: it tends to increase the privileges of the privileged and to make people who are underprivileged even more so.

The best way of judging a health system from a moral standpoint is to consider whether it increases or decreases the gap between the rich and the poor in terms of access to public amenities. This test not only helps to distinguish between legitimate and illegitimate ways of exercising power but can also throw light on the wastage of health care resources. When scarce resources are wasted because of
a lack of cost-effectiveness it is likely that the people to suffer most are those most in need of health services.

Reforms and structural changes tending to obscure the relations of power and responsibility in health systems should be avoided. Those likely to increase openness and accountability, on the other hand, are highly desirable. ■

Towards improved efficiency in Tunisia’s hospitals

S. Ben Nacib, M. Bouslema, N. Glenza, C. Mahjoubi, & B. Sabri

A study was conducted in Tunisia during 1991 in order to assess the performance of the country’s health care system. It was found that the 110 district hospitals, each with 30–80 beds, were accessible to 53% of the population for the first level of hospital care, 73% for secondary care, while the 23 teaching hospitals were accessible to 27% of the population for the first and secondary levels of care and to the whole population for tertiary care. The geographical distribution of hospitals clearly limited accessibility to the first level of hospital care, particularly in the big cities. Patients were being referred from dispensaries and health units to teaching hospitals.

The performance of hospital facilities was assessed in terms of normal deliveries and surgical interventions. In the district hospitals and maternity units, expected deliveries represented 48% of the total but only 35% of deliveries were actually performed. In the regional hospitals the difference between expected and actual deliveries was only 2.5%. The teaching hospitals, performing 15% more than the expected number of normal deliveries, were overutilized in this respect. With regard to surgical interventions, teaching hospitals were overutilized by 20% by patients seeking secondary hospital care.

As Drs Parker & Newbrander point out, in order to quantify wastage it is necessary to obtain data on costs and alternative prices and technologies. In the present case, financial losses were estimated on the basis of the costs of bed-days and of alternative costs if services were provided at the appropriate levels. For normal deliveries, wastage was estimated at US$ 1 million annually; however, the recruitment of midwives and the payment of financial incentives would increase the loss by $750,000 per year. For surgical interventions, wastage was estimated to be $140,000 annually. These figures do not take account of social and opportunity costs nor the amortization of overutilized teaching hospitals.

Clearly, there was a need to redeploy some beds, mainly ones used for maternity purposes. The limited performance of district and regional hospitals was attributable to:

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- shortages of trained personnel, namely surgeons and gynaecologists in regional hospitals and midwives in district hospitals;
- shortages of equipment, particularly in some rural district hospitals;
- the absence of a good referral system, and a tendency for patients living near teaching hospitals to bypass district and regional hospitals.

Among the recommendations made with a view to diminishing the identified wastage were the following:

- Maternity beds for normal deliveries should be redeployed from teaching hospitals to district hospitals to be established in big cities.
- District hospitals should be developed to provide support for primary care through the training of personnel and the provision of suitable equipment.
- Special attention should be given to training health personnel and improving the quality of care in regional and district hospitals.
- The national health information system should be improved, particularly as regards the causes of morbidity and mortality in hospitals, geographical and financial accessibility, and the costs of services.
- The managerial process should be strengthened, through cost-effectiveness studies, health system research, and the improvement of strategic planning with the help of health maps.
- Users and communities should be educated in such matters as the quality of care and cost-effectiveness.

**Saving energy and reducing water costs**

**Ken Sneath**

As Drs Parker & Newbrander indicate, much wastage can be reduced without affecting the quantity and quality of care provided. This is undoubtedly true of the wastage of energy and water in the National Health Service in England and Wales, which spends annually over £225 million (US$336 million) on energy and over £50 million ($75 million) on water and effluent charges.

The energy consumption of 450 hospitals in England and Wales was measured by means of a normalized performance indicator developed by the Audit Commission. A wide range of performances was observed for similar types of hospital, suggesting that there was considerable scope for saving energy by most health authorities. Performance indicators are now being developed in connection with energy use in hospitals throughout Europe.

The Audit Commission identified the following solutions to the problems of energy management in the National Health Service:

- commitment to energy conservation and the development of energy efficiency policies;
- improved management of energy;
- further investment in energy efficiency measures;
- introduction of effective energy management systems;
- creation of incentives to save energy.

The Commission has suggested that, on average, energy consumption could be cut by 15% in hospitals in England and Wales if

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these approaches were adopted, giving savings of some £30 million ($45 million) per annum, mainly attributable to a reduction in the consumption of fossil fuels.

On average, energy consumption could be cut by 15% in hospitals in England and Wales.

Excluding that used in laundering, more than half the water consumption in hospitals is accounted for by personal washing and the flushing of toilets. The Commission found that there were considerable variations in consumption between hospitals treating similar numbers of patients. It was estimated that savings of up to 30%, equivalent to £15 million ($22.5 million) annually, could be made through:

- better water management;
- improved use of technology;
- heightened environmental awareness.

Among the causes of water being wasted are the following:

- taps left running;
- dripping taps;
- urinals flushing too frequently;
- use of water-cooling when equipment is not in use;
- humidifiers on air conditioning plant not functioning correctly;
- excessive boiler blow-down;
- excessive regeneration of water-softening plant;
- hydrotherapy pools drained too frequently;
- overflows from storage tanks;
- defrosting of food by means of running water;
- excessive amounts of water used to flush chemicals into drains in laboratories.

Much water could be saved through good housekeeping and low-cost investment. Indeed, most of the feasible steps involve investments with pay-back periods of less than 12 months and could therefore be financed from revenue expenditure.

The Commission has developed yardsticks of performance of water consumption whereby comparisons can be made between similar hospitals. Performance indicators have also been developed for hospital laundries.

Water leaks in many of the 300 hospitals assessed were in the range 15–35% of consumption; some hospitals had leaks amounting to less than 10%, but in others the figure reached 50% of consumption.

Long-term leaks in pipe infrastructures are most readily identifiable by the use of performance indicators and comparisons of consumption between similar hospitals. Monitoring consumption on a regular basis helps to identify new leaks as they occur. In many general hospitals it would be possible to reduce leaks to the extent of saving about £15 000 ($22 500) per annum.

Problems of human nature

Alex Papilaya

Whereas Drs Parker & Newbrander regard wastage and inefficiency in the health sector as managerial problems, I regard them rather as ones of human nature. They cannot be eliminated but can be diminished. In order to combat the human factor in wastage and inefficiency it is necessary to adopt strategies

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Wastage and inefficiency in the health sector

and approaches which meet the needs of particular countries, areas and populations.

Where development is at a low level, wastage and inefficiency are usually limited. As development proceeds and resources increase, whether at national, provincial or district level, the human tendency to be wasteful and inefficient becomes increasingly manifest.

The mass media provide images of an apparently better life than that experienced by most people in developing countries, who often respond by following the path of consumerism and spending more than they earn. Associated with this is ignorance about health and well-being, together with mismanagement and corruption in the health sector and elsewhere.

Because of the pressure of competition in the private sector, wastage and inefficiency are less pronounced there than in the public sector. There is also evidence of relatively low wastage and high efficiency where health care is managed by religious groups, apparently because of their idealistic motivation to ease suffering and improve health.

Demands for health care of high quality usually increase as consumers become better educated and economically better off, and this leads to reduced wastage and increased efficiency. The less well educated and poorer consumers are comparatively ignorant about and often distant from health services in various ways, so that they are not usually in a position to complain of shortcomings.

However, in certain countries even the rich and well educated have little influence on the quality of care in the public health sector, where there is considerable wastage and inefficiency. If they can afford to do so, people tend to use private services or seek better care abroad. For consumers in general this is a very unfortunate situation, to which it is increasingly difficult to react the farther they live from capital cities. The best hope for improving services probably lies with professionals in the health and other sectors. The attention of decision-makers can be gained through scientific meetings and other professional gatherings, while pressure can also be brought to bear through international and funding agencies.

Of course, in many countries it is perfectly possible for consumers to express concern about the quality of health care and the related issues of wastage and inefficiency in both the public and private sectors. These matters can be raised in parliament, and nongovernmental organizations can bring considerable pressure to bear on the authorities. The mass media can be used, and protest meetings and other demonstrations by members of the public can play a part.

It should be noted, however, that consumers can have detrimental effects. Demands for high technology tend to shift funding away from basic services. In these circumstances, costly diagnostic and treatment facilities may be installed while health promotion and disease prevention are neglected.

In addition to the conventional managerial methods of tackling wastage and inefficiency, sociologists and behavioural experts should become involved, and there should be strong commitment from decision-makers at the highest levels.
Perhaps most importantly, consumers, whether as individuals or in organized groups, should insist that the taxes they pay be utilized to the greatest possible effect in the provision of health services.

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**Decisions about health services should not be made purely on the basis of achieving efficient allocation and utilization of resources**

Andrew Green

The final sentence of the main article, implying that more emphasis should go into reducing wastage than into the perpetual pursuit of additional funds, may be particularly important. In recent years there has been considerable interest in community-based financing initiatives that perhaps carry implications of negative equity, whereas relatively small shifts in the allocation of resources between tertiary and primary care could have a significant effect. If, for example, a shift of only 5% from hospitals to primary care were made in a country with a resource allocation ratio of 5 to 1 between these levels, there would be a growth of 25% in the primary sector. More attention should undoubtedly be paid to improving the utilization of resources that are already available.

Drs Parker & Newbrander concentrate their analysis on elements of health systems, particularly at the institutional level. However, it is also important to consider a different dimension, namely the health system as a whole. Even if the parts of a system operate very efficiently, in its totality it may be inefficient. Thus each nongovernmental or private organization functioning in a country may be technically efficient in itself yet partly responsible for unnecessary duplication of activities, with the result that resources are wasted.

In many developing countries there is an increasing use of projects that run parallel to the health system, referred to by Drs Parker & Newbrander as multiple vertical programmes. Although donors may feel that this is the best way to ensure accountability and individual service efficiency, the overall efficiency of the system may nevertheless be diminished.

Proposals for reform of the health sector should be assessed not just in terms of effects on the efficiency of individual components but on the system as a whole.

Why have the subsystem inefficiencies mentioned in the main article not been reduced? In many countries there is still a gross misallocation of resources, something that can only be remedied if strong political support is forthcoming.

Cost-effectiveness techniques can clearly help the decision-making process, but undue reliance on them can be counterproductive. They assume efficiency and effectiveness to be the two essential criteria for decision-making, while neglecting social effects, sustainability, equity, effects on minority groups, and other factors that should be taken into consideration if decisions are to be both appropriate and susceptible to implementation. They also carry the danger of apparently reducing what are essentially political decisions to technical manipulations. If the political nature of prioritization is underestimated the necessary changes in allocation cannot be expected to be achieved.

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It is not necessarily true that improvements in technical efficiency lead to reduced expenditure. Indeed, additional expenditure may be needed in order to attain increased efficiency. It should also be noted that low levels of service delivery may in themselves be inefficient, preventing economies of scale, as in the example of the underutilized health centre mentioned by Drs Parker & Newbrander. Many health systems operate at such low levels of resources that they cannot be efficient.

The achievement of increased efficiency requires not only political commitment but also, as is pointed out in the main article, behavioural change in various quarters. However, it has to be borne in mind that there have been numerous instances of changes in managerial systems which have been designed to influence behaviour but which have had the opposite effects to those intended. Ideally, performance should be measured in terms of health gains, but managerial incentives often reflect a wish to raise the ratio of outputs, for instance the throughput of patients, to resources, a state of affairs that can have unwanted consequences.

Although it is clearly desirable to achieve efficient allocation and utilization of resources, decisions cannot be made purely on this basis. There may be occasions when other aims conflict with aspiration for narrow notions of efficiency. For instance, the allocation of resources to densely populated areas may seem an efficient way of securing high coverage but may not be equitable. Furthermore, important aspects of process may be neglected if there is an overriding drive to maximize output to input ratios. The attainment of sustainable health improvements relies heavily on the manner in which services are decided on and delivered.

Acknowledgement
The Editor is very grateful to Dr Eilif Liiisberg for preparing this Round Table.

Editor's note
A number of discussants have mentioned the procurement and maintenance of equipment as possible areas of wastage. Readers may like to refer to an earlier Round Table on this subject: "The right equipment... in working order" by Gerald Bloom, World health forum, 1989, 10: 3–10; discussion: 11–27.

170 000 million health dollars wasted every year?
The World Bank's World Development Report 1993 — subtitled "Investing in health" — states that decisive steps are needed to correct the pervasive inefficiency in health systems in all developing countries, and particularly in government health services.

According to the report, total health expenditure in the world amounted to US$ 1 702 455 million in 1990, with $ 170 115 million in the demographically developing group of countries. As shown in this Round Table, waste is also a problem in the industrial world, sometimes reaching staggering proportions. Assuming that 10% of health expenditure is wasted — a very reasonable assumption — and applying this figure to the global health expenditure, we arrive at $ 170 245 million as wasted in 1990. This is a little more than the total health expenditure in 1990 in the developing world!

Total development assistance for health in 1990 was estimated at $ 3 252 million. The global total wastage was more than 50 times greater!

The Editor would like to hear from readers about practical experiences in reducing wastage and fraud.