

## Letter from North America

---

### DIALYSIS DILEMMAS

The increasing incidence of diabetes and an ageing population are contributing to an epidemic of end-stage renal disease (ESRD) both in the USA and India. Most of these patients with ESRD require dialysis—haemodialysis (HD) and peritoneal dialysis (PD)—for survival. The rapidly rising number and costs of dialyses are creating a dilemma regarding the modality of dialysis, its method of delivery and reimbursement policies both in the USA and India.

Since 1970, the number of patients on chronic dialysis in the USA has increased 100-fold. In 2005, in the USA, more than 500 000 patients received treatment for ESRD, an average annual increase of 4%–6%. The greatest rate of growth occurred among patients >75 years of age and those with co-morbid conditions such as diabetes mellitus and hypertension. Experts predict an epidemic of ESRD in the next 25 years due to the continued growth in the number of new patients with ESRD (projected 2 million by 2030), as well as lower mortality rates of patients with ESRD (a 10% reduction in mortality in the past decade).

The rapid rise in patients requiring dialysis in the USA resulted in growth of the dialysis centre industry, which is composed of approved independent and hospital-based or affiliated facilities. All dialysis centres are regulated and subsidized by the Federal Government, which grants exclusive licences to providers to supply long term dialysis within a designated territory. These facilities are reimbursed through the Health Care Financing Administration (HCFA) with Medicare funds. The ESRD programme consumes 6.4% of the Medicare budget. Scarcity of funds caused the Federal Government to cut back on its reimbursement rates in the mid-1990s. However, that cost-cutting proved deadly. A National Kidney Foundation report published in 1995 found that American patients on dialysis had a much higher mortality rate (24%) than patients on dialysis in other countries (10% in Japan, 10% in Germany and 11% in France). The report claimed that cost-cutting in the form of poorly trained staff and inefficient use of dialysis machines seemed to be a factor in 45 000 US deaths. A campaign was launched in 1995 by the National Kidney Foundation to improve patient care at dialysis centres and decrease deaths.

Dialysis centres and companies providing the required machines and expertise are a big industry in the USA. The largest companies in this industry are Fresenius Medical Care (FMC), Baxter and DaVita Inc. FMC reported a 33% increase in net revenue for the first quarter of 2007 to US\$ 2321 million (38% growth in dialysis services). The average revenue per dialysis treatment increased by 6% to US\$ 329. As of 31 March 2007, FMC treated 169 216 patients worldwide (in 2914 clinics), which represents a 27% increase in patients compared to the past year. The international segment served 50 484 patients (in 620 clinics), an increase of 17% over the past year. FMC delivered approximately 6.41 million dialysis treatments worldwide, which represents an increase of 28% over a year. Competition is provided by Baxter and DaVita Inc., both of which had similar growth patterns.

A similar trend of a rise in patients with ESRD requiring dialysis is expected in the near future in India. It is estimated that

about 100 000 people suffer from ESRD each year in India, of which only about 20 000 get treated. Over three-fourths of the people suffering from ESRD do not get treated, largely due to a lack of awareness of the disease and treatment options, inadequate access to care and affordability. A high prevalence of diabetes and heart disease is possibly the reason for the rapid rise in renal disease in India. The mean age of patients with ESRD in India is between 32 and 42 years, compared with 60 and 63 years in developed countries. Although the alternative option of renal transplantation for the treatment of ESRD is well developed in India, it is severely hampered due to a lack of donors and the absence of a strong deceased donor programme. Therefore, even patients who can afford transplantation have to opt for dialysis as the only possible treatment.

Estimates suggest that there are about 14 500 patients surviving on HD and about 3000 patients surviving on PD in India. The remaining 2500–3000 patients are those surviving a renal transplant. There are an estimated 400 dialysis units in India with about 1000 dialysis centres. Among the patients who need dialysis, only 5% can afford it. Some social activists propose that the Indian Government should subsidize the costs of dialysis, as the American Government does. Each dialysis treatment costs up to Rs 2000 (about US\$ 50). All dialysis machines are imported and the government has waived customs duties on them. Each machine costs Rs 6–10 lakh (US\$ 15 000–US\$ 25 000). Maintenance is also expensive. Machines and consumables such as the dialysers and tubing used for HD are generally imported. Because of the high costs and restricted availability of HD, some suggest that PD is a viable option for the Indian healthcare system. Unlike HD, consumables for PD are manufactured locally and are easily available in India. Across Asia, PD is preferred in several countries because of its low infrastructure requirements, low cost and applicability to a wide range of patients. The governments of Hong Kong and Singapore have even announced a 'PD first' policy to encourage providers to consider PD as the first-line of therapy for renal failure. Some public health experts argue that PD is even more relevant in India, given the geographical expanse. The lack of utilities such as electricity, water treatment, sewage management, poor personal hygiene, as well as a lack of healthcare infrastructure such as trained nephrologists, dialysis nurses and technicians all support this argument.

In this emerging epidemic of ESRD, experts argue that more stress on preventive measures may reduce the overall burden of the disease and its treatment, both in the USA and India. Primary prevention of diabetes, community-based screening to facilitate early detection of people with diabetes, improving glycaemic and blood pressure control of people with diabetes in the primary care setting, and the establishment of dedicated renal clinics are some of the measures proposed.

MICHAEL P. HEZEL  
*Pittsburgh*

SCOTT TUORTO  
*New York*

PRASAD S. ADUSUMILLI  
*Pittsburgh*

## Letter from Glasgow

### DON'T FORGET PUBLIC HEALTH!

'Public health', declared my colleague, 'is the original medical specialty. Long, long before cardiology, neonatology, transplant surgery and the other medical specialties, sub-specialties and sub-sub-specialties, public health had a structure and knowledge base.' I didn't know at the time what brought about the rant. Subsequently I got to know that, once again, at a medical meeting the importance of public health was being pooh-pooed by some in the medical hierarchy and my colleague was not impressed.

Public health is crucially important in all countries, not just in 'developing' countries. Of course, the priorities will vary in different countries so that saving 1.8 million children who die each year from diarrhoea<sup>1</sup> is a priority for 'developing' countries. Indeed, Clasen *et al.*'s<sup>2</sup> conclusions that interventions to improve the microbiological quality of drinking water are effective in reducing diarrhoea in children under 5 years and adults, and that household interventions are more effective than water source interventions will be of particular interest to public health workers in 'developing' countries.

For Scotland and the UK the challenge is not of diarrhoea but of chronic diseases such as diabetes and hypertension, alcohol misuse, tobacco-induced disease, other diseases related to diet and lifestyle, and the ability to deal with old age problems such as hip and knee replacement. Yes, I am aware that these issues are now also affecting countries such as India—what can be called the 'double-whammy' of illness due to poverty and increasing wealth occurring simultaneously. But my point is that public health is important no matter which country you live in.

As a public health physician I always have to explain what it is I do (even to my children), and I have a sense of always having to justify how public health 'adds value' to the healthcare system within which we operate. Of course, the parameters of public health vary in different countries, with public health being closely linked to primary care in some countries, while in others it is linked to the state-funded health services. In Scotland public health is an integral part of the National Health Service (NHS Scotland) and public health contributes in three main areas:

1. *Health improvement*: Improving the health of the population through, for example, prevention of cervical cancer and thereby adding years to life, and by increasing the health of the population by adding life to years;
2. *Health protection*: Protecting the population from communicable diseases and environmental hazards such as chemical spills;
3. *Healthcare*: Helping to provide quality health services to meet the needs of patients and the population.

I don't need to spell out that public health is a 'Cinderella' specialty when compared with the more high-profile specialties such as interventional cardiology or transplant surgery. Personally, I am not precious about public health and I don't think we need to be defensive about it. However, I do think public health doesn't always get the recognition it should from our medical colleagues. Therefore, I do think that it's useful to bang our drum a little louder about public health so that rather than the spin of professional journalists, here is some drum banging about public health!

The UK Public Health Association (UKPHA [http://](http://www.ukpha.org.uk)

[www.ukpha.org.uk](http://www.ukpha.org.uk)) met recently in Edinburgh and that helped me to appreciate the breadth and depth of the public health work currently going on within the UK. This was UKPHA's 15th Annual Public Health Forum and it is UK's largest multidisciplinary conference on public health. The title of the conference was 'Generation to generation: Sustainable directions for public health'. The UKPHA itself is the largest independent UK-wide voluntary public health organization that brings together individuals and organizations committed to promoting public health policy across all levels of government and sectors. The Chair of UKPHA is David Hunter (<http://www.dur.ac.uk/school.health/staff/?username=dhs0djh>), a well respected public health researcher and analyst who is Professor of Health Policy and Management at the University of Durham in Northeast England.

The meeting attracted about 700 delegates and was truly multidisciplinary. It covered the 4 countries of the UK (Scotland, England, Wales and Northern Ireland) with a sprinkling of participants from overseas. I found the job titles of participants fascinating and in addition to the usual suspects regarding job titles, there were the following: 'freelance public health practitioner'; 'family food manager'; 'specialist domestic violence midwife'; 'smoke-free public places project worker'; and 'tackling teenage pregnancy coordinator'. For me this underlines the idea of public health being a broad church with many streams of work and activity needed to improve the health of people.

At the conference I was impressed by two presentations I went to which made me question what we do (are we doing the right thing?) and how we do it (are we doing things right?). The first was a plenary session from Professor Ichiro Kawachi of the Harvard School of Public Health, who spoke on 'Individual or collective responsibility for health' (or why some societies make you sick). His premise was that the linkage between social environment and patterns of illness and disease is relatively neglected in policy and practice. Yet there is evidence that issues such as income distribution, social cohesion and social capital, inequalities in political participation and residential segregation impact on the health outcomes of people (in terms of mortality, morbidity and quality-of-life). There is nothing new in what Professor Kawachi said, but the way he engaged the audience made me feel like dragging him off to speak to some of our senior doctors who are sceptical (to say the least) of public health.

The second session was a debate on drugs entitled 'Drugs—is prohibition still the answer in the 21st century'? In this session Danny Kushlick, Director of the Transform Drug Policy Foundation arguing against complete prohibition of illegal drugs, went head-to-head with Professor Neil McKeganey, Director of the Glasgow University Centre for Drug Misuse Research arguing for the existing prohibition. My instinct was to ask 'What does the evidence say?' but unfortunately the evidence is lacking or suggests contradictory conclusions. I came away thinking that it is important for the question of prohibition to be posed but that the evidence, both in terms of clinical effectiveness and cost-effectiveness, needs to be robust and reliable before going along the 'no prohibition' route. Nonetheless, I was pleased that public health was debating difficult, even unpopular, issues and assessing the evidence for them.

So my message to all health workers is—don't forget public

health. It may not be the most glamorous specialty but it is asking (and answering) important questions which will improve the health of people in all countries. And now, suitably enthused again by the UKPHA Conference, I may even go away and join the UKPHA...

## REFERENCES

- 1 Luby SP. Quality of drinking water. *BMJ* 2007;**334**:755-6.
- 2 Clasen T, Schmidt WP, Rabie T, Roberts I, Cairncross S. Interventions to improve water quality for preventing diarrhoea: Systematic review and meta-analysis. *BMJ* 2007;**334**:782-5.

H. S. KOHLI

*harpreet.kohli@nhshealthquality.org*

## Letter from Chennai

### THE NEPHROTOXICITY OF THE TSUNAMI

The tsunami of 2004 killed around 10 000 people in Tamil Nadu. It also left hundreds and thousands of people without homes or any means of livelihood. Many non-governmental organizations (NGOs) took part in the relief efforts and the government chipped in and did its part. Many of those affected were re-housed in temporary shelters. One such is Tsunami Nagar, in one of Chennai's suburbs called Ernavur; 1740 families are crowded there. Most of its occupants are fishermen. The men cannot go to sea again because the settlement is 2 km from the sea, and the women cannot sell fish on the beach, again because of the distance, and because there is no catch to sell.

Tsunami Nagar is a rich area for the kidney industry of Tamil Nadu. Enterprising kidney brokers descended on the settlement, and offered Rs 100 000 for a kidney. Some were even more generous and promised Rs 150 000. Many women were tempted, some forced by their menfolk, to sell their kidneys. None finally received more than Rs 40 000, some claim they got even less. Newspapers vary in their assessment of the number of women who have sold a kidney, from 30 to 80.

The matter came to light when one of the donors filed a complaint against the broker. She had been promised Rs 150 000, she said. She was taken to a hospital in Tiruchirapalli where one kidney was removed and transplanted into a recipient. However, all she was paid was Rs 30 000, and she went to the police to file an FIR (first information report) against the broker.

So what is new about this case? I wrote in these columns about the matter 10 years ago.<sup>1</sup> Sadly, nothing has changed since then. I would like you to go back to that letter and read it again, but for those of you who do not have access to it I repeat a part of what I said then:

'The preamble to the Transplantation of Human Organs Act, 1994, says,

'Whereas it is expedient to provide for the regulation of removal, storage and transplantation of human organs for therapeutic purposes *and for the prevention of commercial dealings in human organs*; ...' [emphasis mine].

'Section 9. (1) of the Act says, "Save as otherwise provided in sub-section (3), no human organ removed from the body of a donor before his death shall be transplanted into a recipient unless the donor is a near relative of the recipient."

'This makes it legal to use live donors for transplantation to near relatives, and prohibits transplantation to unrelated individuals.

'A near relative is defined in Section 2. (i) as "near relative" means spouse, son, daughter, father, mother, brother or sister.

'Sub-section (3) reads: "If any donor authorises the removal of any of his human organs before his death under sub-section (1) of section 3 for transplantation into the body of such recipient, not being a near relative, as is specified by the donor by reason of affection or attachment towards the recipient or for any of the other special reasons, such human organ shall not be removed and transplanted without the prior approval of the Authorisation Committee."

'This is the sole exception to the ban on unrelated donor transplants. It provides for the emotionally related donor. Your bosom friend may be afflicted from renal failure and may not have a relation willing or fit to donate a kidney to him. All it needs is for you to convince the Authorization Committee that you have such love for him that you have no hesitation in sacrificing a vital organ, and your surgeons may go ahead. There is no other exception to the prohibition of live unrelated donor transplantation.

'The Act goes on to expressly forbid commercial dealings in human organs. Says section 19. "Whoever—

- (a) makes or receives payment for the supply of, or for an offer to supply, any human organ;
- (b) seeks to find a person willing to supply for payment any human organ;
- (c) offers to supply any human organ for payment;
- (d) initiates or negotiates any arrangement involving the making of any payment for the supply of, or for an offer to supply, any human organ;
- (e) takes part in the management or control of a body of persons, whether a society, firm or company, whose activities consist of or include the initiation or negotiation of any arrangement referred to in clause (d); or
- (f) publishes or distributes or causes to be published or distributed any advertisement, —
  - (a) inviting persons to supply for payment of any human organ;
  - (b) offering to supply any human organ for payment; or
  - (c) indicating that the advertiser is willing to initiate or negotiate any arrangement referred to in clause (d), shall be punishable with imprisonment for a term which shall not be less than two years but which may extend to seven years and shall be liable to fine which shall not be less than ten thousand rupees but may extend to twenty thousand rupees; ..."

'It seems clear to me that the Act expressly prohibits the sale of human organs. One would think that, with such an Act in force, the unrelated live donor transplant programme of Chennai would have died down. No such thing has occurred. The stalwarts of the unrelated live donor programme continue to do as many transplants as they did before the Legislative Assembly of Tamil Nadu adopted the Act. What is more, they do them with the seal of approval from the Authorization Committee, and are therefore a very satisfied lot. The law, which was meant to prohibit commercial dealings in human organs, now provides protection for those very commercial dealings.'

I am sorry to say that in the past 10 years, the transplant factories have flourished. The numbers of unrelated donor transplants in this state have steadily increased, especially as most other states in India have been more strict in the application of the law, and have substantially reduced the numbers of unrelated donor transplants. The place to go for a cheap kidney is therefore Chennai or one of the other major cities in Tamil Nadu where such transplants are done, with the Government of Tamil Nadu not taking any cognizance. The press initially made some noise about these illegal transplants, but news oft-repeated ceases to be news. It may not sell newspapers, and unrelated transplantation only sporadically made an appearance in the media.

However, the combination of the word tsunami with the kidney racket galvanized everyone into action. News media around the world took up the story of the kidneys of tsunami victims. After all, the whole world had been interested in the tsunami and in what was done for the victims. The BBC broadcast a programme on tsunami kidney sales. Newspapers from the Gulf to the United States gave us more column inches than they spared for any other of our achievements. And at last the Government of Tamil Nadu was roused into action. The government warned that they would take action against all the erring hospitals and doctors; that they would suspend the licences of all these hospitals and initiate criminal proceedings. The police would be called on to investigate every unrelated donor transplant. The medical profession itself was criticised for being so devoid of principles as to perform these heinous acts.

I am entirely in agreement with all that the government says. The law is clear. Unrelated donor transplants may only be done for deep and lasting affection the donor has for the recipient of his kidney. There should be no money involved in the transaction. Kidneys should not be bought and sold. However, in one aspect the government was notably silent. True, every one of these illegal and immoral transplants is done by venal doctors assisted by unscrupulous brokers. The team joins to cheat the unfortunate vendor of the kidney while performing this illegal act. But, we all conveniently forget that every one of these transplants was done with the seal of approval of an Authorization Committee, which has been set up by the government to see that no section of the Act is contravened. The committee interviews every one of these donor-recipient pairs. Is it not obvious to anyone that the only motive for which a slum dweller from Chennai will subject herself to a major operation and donate a vital organ to a millionaire from Kanpur or Kolkata, whom she has met for the first time a week ago, is money? But this is not permitted under the Act. Unrelated donor transplantation may only be done if the donor gives the kidney out of love. The Authorization Committee should reject every one of these instances where acquaintance has been established just a few days ago, where social and economic disparities and geographical distance make it impossible for there

to be any personal friendship between the donor and the recipient.

The members of the Authorization Committee are professors, deans and directors, the very cream of the medical service, who have risen by their outstanding merit and academic attainments to the highest positions in the Tamil Nadu Medical Service, and that too in the field of education. What then motivates them to permit such transplants in large numbers? One member told me in confidence that they received telephone calls from 'higher-ups' asking them to sanction some individual cases. I have no doubt this must sometimes be true, but so many such transplants are done that it seems impossible that each one of them has influence with politicians or administrators. The real reason? Your guess is as good as mine.

The government convened an open consultation among the administration, members of the medical profession and some NGOs to discuss the matter and suggest ways of getting rid of this blot on the fair name of our State. As expected, this was an optical lotion. No one stated the obvious. The law is flouted by all concerned and they are guilty under Section 19 of the Act, and should be appropriately tried and punished. One wishes the doctors would remember that they have a responsibility to the organ donor as well as to the patient, and should not be a party to her exploitation, but it is the responsibility of the Authorization Committee to refuse permission for all illegal transplants.

Some of the greatest protagonists of the unrelated donor transplant, people who have done and continue to do such cases in thousands, appealed to the government to change the Act so that all unrelated donor transplants were banned. Others suggested that the trade should continue, but should be regulated by the government, so that the donor should receive a fair price for the kidney. And how much may that be? The recipient pays Rs 300 000-400 000 in medical bills, and takes Rs 100 000 worth of medicines a year to prevent rejection of the kidney. Should not the cost of the kidney bear some relationship to that? Perhaps it would be possible to fix a fair price, but would the donor actually receive the money? The *Indian Express* on 19 March 2007 carried a report on page 5, headlined: 'Politicos, officials unite to exploit poor'. The State Government initiated a scheme to distribute land to the landless poor, but officials and middlemen demand a commission from them before they will hand over the land. What will happen if the price of a kidney is fixed at Rs 500 000? The unfortunate donor will still receive just a fraction of the sum, and many people in the chain will profit.

What then is the solution? We must ban all unrelated live donor transplantation immediately, and include the so-called emotionally related donor in the ban. We must have a drive for cadaver organ donation, spearheaded by the politicians, film stars and cricketers whom we collectively adore. Our leaders should make a start by setting the example, pledging their organs now while they are well, and getting an assurance from their families and political parties that the pledge will be honoured when their time comes. The medical profession has an equal or greater responsibility to donate its organs. We will have enough kidneys to support the small percentage of our renal failure patients who can afford transplantation. For the rest, the only solution is prevention, and we need to do far more in this regard.

#### REFERENCE

1 Mani MK. Making an ass of the law. *Natl Med J India* 1997;10:242-3.

M. K. MANI