

Editorial

Providing Dialysis in India: Many pieces in the puzzle

Every year, 225 000–275 000 people die of advanced kidney failure in India.¹ Most of these deaths can be avoided if these patients had access to regular, good quality treatment to replace the lost kidney function.

Ever since the passage of the Medicare Act by the US Congress in 1972, access to dialysis for patients with advanced kidney failure has become the benchmark for societal willingness to pay for medical care.² According to the Ethical Considerations section of the Australian Guidelines: ‘Availability of resources should not be a reason to deny a patient access to dialysis. Decisions to recommend or not to recommend dialysis should not be influenced by either the availability of resources or potential litigation.’³ Mindful of similar principles, governments around the world have been setting up facilities for dialysis for their populations. In 2017, a survey by the International Society of Nephrology found that facilities for dialysis were available in all of the 162 countries from where data could be collected.⁴ This is despite the fact that long-term dialysis is one of the most expensive treatments. WHO uses dialysis as an exemplar of a cost-ineffective treatment,⁵ suggesting it should not be prioritized by health systems that want to maximize the use of limited funds available for healthcare delivery to their populations.

Despite the high cost, governments consider it their duty to improve access to dialysis for their populations, largely because it is a major cause of catastrophic out-of-pocket healthcare expenditure and disproportionately affects the disadvantaged sections of society. The treatment of kidney diseases is associated with an estimated 188 million cases of catastrophic health expenditure (defined as >40% of monthly non-food spending) in low- and middle-income countries, more than that for any other disease condition.⁶ A study from Kerala, one of the more prosperous states in India, showed that families of >90% of patients on dialysis suffered catastrophic healthcare expenditure. About three-fourths were forced into distress-financing (borrowing and selling possessions).⁷ There are heart-rending stories of families pulling children out of school, pushing them into labour market and being reduced to survive on handouts because they do not want to abandon a loved one.⁸ Thus, a case can be made for creating a safety net to protect the most vulnerable from such consequences.

Having decided to offer dialysis, the next question that governments need to tackle is how to provide this treatment in an equitable, cost-effective and socially acceptable manner. The best treatment, much superior to dialysis—both for the patient and the healthcare system—is kidney transplantation.⁹ Hence, the healthcare system needs to invest in maximizing the availability of transplantation to all suitable patients by removing the financial barriers and improving the availability of organs by developing an efficient programme to retrieve organs from deceased donors.

Many patients, however, must remain on dialysis—either because they are not medically suitable for a transplant, or because an organ is not available.⁹ Dialysis has two options: haemodialysis (HD) in which a patient has to visit a dialysis centre two or three times a week, get hooked to a dialysis machine and undergo a 4–5 hour session of cleaning of blood each time. Dialysis centres are concentrated in urban locations (including those proposed in the National Dialysis Programme), which forces patients from rural, remote locations to undertake long and expensive travel, often with a caregiver resulting in loss of productivity and wages.¹⁰

The other modality is peritoneal dialysis (PD). This modality takes advantage of a natural membrane lining the inside of our abdomen—the peritoneal cavity—that has a rich

capillary network through which blood is constantly running. PD involves 3–4 daily dialysis exchanges, each lasting 15–20 minutes. Dialysis fluid stays in the abdomen in between exchanges, allowing movement of the accumulated toxins from the blood flowing in peritoneal capillaries to the dialysis fluid. PD can be done at home; it needs the patient or a caregiver to learn a simple technique and does not require any equipment or skilled personnel.

Setting up a facility for HD requires capital investment, purchase of dialysis machines and water purification plant, and employing trained workforce.¹¹ None of this is needed for PD. It is generally accepted that for a majority of patients, both forms of dialysis are equally good in terms of outcome. PD costs much less to the healthcare system and provides a better quality of life to most patients.

It makes sense, therefore, for countries intending to set up mass-based dialysis programmes to focus on PD. When Thailand introduced universal coverage for dialysis in 2008, it did so through a ‘PD First’ policy.¹² All patients eligible for dialysis under the Thai Social Security scheme are required to receive PD unless there is a compelling medical reason to not do so. This policy was adopted after a rigorous health technology assessment, which favoured PD.¹³ Similar programmes exist in Hong Kong and parts of Mexico and South Africa.¹⁴ China has a less strict policy but still favours the use of PD. Other countries that have state-funded health programmes (Australia, New Zealand, the UK and Canada) have taken steps to increase the use of PD to reduce the cost of care while maintaining the quality of care.^{15–18} The use of home dialysis, including PD, has increased substantially in Australia after a systematic effort.¹⁹ Importantly, the outcome of patients on PD continues to improve year-on-year in these countries, whereas it seems to have plateaued for those on HD. Even in the USA, where HD is preferred, a recent surge has been seen in the uptake of PD following the introduction of a reimbursement strategy to incentivize providers of dialysis to place more patients on PD.¹⁷

When the National Dialysis Programme (now called the Pradhan Mantri National Dialysis Programme) was announced in India in 2016, it was centred on HD.²⁰ The government envisaged setting up an eight-station dialysis facility in each district.²¹ Given that there are 688 districts in India, the programme would have 5504 dialysis stations. If all stations run three 4-hour shifts a day, a total of 16 512 patients would be treated daily. If each patient was to get two sessions of dialysis every week (the global standard is three sessions a week), the programme would be able to provide dialysis to 49 536 patients at full capacity. Even if we assume that 50%–60% of all new patients with end-stage kidney failure are eligible to receive dialysis under this scheme, this number will have to be increased at least three times just to accommodate the patients who will develop kidney failure in the first year of the scheme. As these patients survive to the next year, an equal number will get added in the second year, doubling the demand. One expects the number of patients surviving to show a year-on-year increase till the prevalence rises to about five times the number in the first year before the number of patients being added is balanced by those either dying or dropping out due to other reasons.¹⁰

Thus, if the promise of the Pradhan Mantri National Dialysis Programme is to be realized, alternatives to HD, especially PD, must be explored. The recent announcement by the Central Government²² recognizes this reality and creates an enabling environment to develop community-based PD programmes. However, much work lies ahead. Community-based teams need to be trained in supporting patients on PD in their homes. The use of remote monitoring technologies holds promise.²³ Simple technologies that allow patients to share important health data and stay in touch with care-providers have the ability to improve the quality of care and enhance the confidence of patients.²⁴ All over the world, PD programmes are developed around non-physician care-providers, with nurses being the focal point. Doctors are needed for specific reasons such as deciding when to start dialysis, inserting the dialysis catheter and writing the prescription. After this, the routine care can be fully supervised by nurses or clinical coordinators using standard protocols, with appropriate referral to the nephrologist for periodic evaluation or in case of any complication. Community health workers can visit patients in their homes and using checklists, determine whether the therapy is progressing as expected.

Reforms are needed in financing and reimbursement. Most of the expenses in PD are related to the cost of dialysis solution bags. Why a bag of salt and sugar solution should be so expensive? According to the manufacturers, most of the cost goes in producing the bags used to package the dialysis solution because they need to meet a certain standard. Why none of the famed Indian entrepreneurs and innovators have found a cheaper way of

manufacturing these plastic bags? Indigenous manufacturing has the potential to considerably bring down the cost.

The other reform required is in the manner nephrologists are reimbursed. At present, nephrologists have an incentive to prefer HD because they are reimbursed for every session of dialysis (2–3 times a week), whereas for PD, they get paid only for a consultation, which may be once a month or even less frequent. It is important that this differential be removed, and nephrologists receive the same reimbursement for taking care of a patient on dialysis whose treatment costs are funded by the state, irrespective of the modality of dialysis. This will remove the existing perverse incentive in favour of HD. In the UK, Australia and Canada, the healthcare facility (and the nephrologist) receives the same reimbursement for a patient irrespective of the modality of dialysis. As noted earlier, the recent growth in the number of patients on PD in the USA was possible only because of reforms in the process of reimbursement.

Irrespective of what modality of dialysis is offered, sustained success is possible only if the treatment meets with expectations of patients and healthcare providers. This can be facilitated through education of public and healthcare providers, monitoring of quality, and proper and transparent reporting of outcomes. Registries perform this function in countries with established dialysis programmes. Tracking of patients, fed into a quality improvement loop, reduced the rates of infectious complications (peritonitis) by half for patients on PD in Australia.¹⁹ Each \$1 of expenditure on the Australia and New Zealand Dialysis and Transplant Registry has yielded \$7 of benefits through improved outcomes and reduced spending on complications.²⁵

Just because dialysis is available does not mean that all patients with advanced kidney failure should be offered this treatment. Many patients, especially the very old, those with multiple coexisting diseases that limit the lifespan or quality of life, do not have much to gain in their length or quality of life by dialysis. Instead, such patients should receive non-dialytic comprehensive conservative care to manage symptoms, so that they are able to spend the last phase of their lives in the comfort of their homes or a hospice.⁹ It is important that these decisions are made in a shared manner after fully understanding the personal preferences and life goals of the patient. In Australia and Canada, where dialysis patients are in their 70s and 80s, every other new eligible patient chooses not to start dialysis. For this to be a viable option, however, supportive care services focussing on symptom management and quality of life should be available and nephrologists should offer them to suitable patients. This requires a change in the mindset of physicians who trained to provide curative services and believe that not offering an available ‘active’ treatment such as dialysis is an admission of defeat. It must be noted that the majority of patients requiring dialysis in India are younger and have fewer comorbid conditions, so they will perhaps benefit more from dialysis than older patients.

Finally, no country, no matter how rich, can afford to indefinitely support the ever-increasing population on dialysis. The viable long-term solutions to stem the growing burden of kidney disease are to identify and intervene early so that the development of kidney disease can be either entirely prevented or at least substantially slowed down. Effective prevention options are available, but we need urgent reforms in our healthcare system to make sure that these options reach the vulnerable and the marginalized, where the need is greatest. Research is also needed to identify unique risk factors so that populations can be targetted appropriately for screening.

Conflicts of interest. None declared

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