

# Introducing the International Home Dialysis Consortium



Edwina A. Brown<sup>1</sup>, Vivekhand Jha<sup>2,3,4</sup>, and on behalf of the Steering Committee<sup>5</sup>

<sup>1</sup>Imperial College Healthcare NHS Trust, London, UK; <sup>2</sup>George Institute for Global Health India, New Delhi, India; <sup>3</sup>School of Public Health, Imperial College, London, UK; and <sup>4</sup>Prasanna School of Public Health, Manipal Academy of Higher Education, Manipal, India

*Kidney Int Rep* (2023) 8, 1277–1280; <https://doi.org/10.1016/j.ekir.2023.04.019>

© 2023 International Society of Nephrology. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## INTRODUCTION

The use of home dialysis, peritoneal dialysis (PD) and home hemodialysis (HHD), remains low despite the well-known benefits to the person on dialysis in terms of lifestyle and treatment satisfaction, and to the health care system because of lower financial costs and lesser dependence on trained professionals.<sup>1</sup> With projections of doubling of the population of people receiving dialysis from 2010 to 2030,<sup>2</sup> health care systems delivering dialysis therapy have the responsibility to ensure cost-effectiveness. Resources are limited, including qualified staff and finances to cover treatment costs. Remote patient monitoring holds promise of high quality follow up and improved clinical outcomes for home dialysis patients.<sup>3</sup> Furthermore, shared decision making enables patients to choose and therefore benefit from

the dialysis modality most suitable for the individual to improve their quality of life. Furthermore, by avoiding multiple journeys to a dialysis center, home dialysis is less disruptive for the environment and for those living in remote geographic areas, prevents individuals from having to relocate from their communities to urban areas for dialysis treatment. In addition, PD avoids use of large quantities of water for each treatment, which is critically important in regions with water scarcity. During the height of the COVID-19 pandemic, when even “home dialysis sceptics” perceived the advantage of dialysis at home rather than in-center, an International Home Dialysis Roundtable was convened by industry leaders to consider practical steps for increasing access to home dialysis.<sup>4</sup> Around the same time, Kidney Disease Improving Global Outcomes held a controversies conference on home dialysis, looking at multiple facets of improving the adoption and propagation of home dialysis globally.<sup>5</sup> Building on this work, and in the light of the global importance and interests in home dialysis, the leadership of the International Society of

Nephrology and the International Society for Peritoneal Dialysis have joined forces to form the International Home Dialysis Consortium. This consortium aims to bring regional stakeholder forces together to drive home dialysis uptake globally, in a scientifically advised, structured, and accountable manner.

## ADVANTAGES OF HOME DIALYSIS

The mission of the International Home Dialysis Consortium is to promote equity and increase access to home dialysis globally in both high-income and lower-income countries. In addition to being cost-effective and more responsive to available resources, home dialysis offers many benefits as discussed at the Kidney Disease Improving Global Outcomes controversies conference.<sup>5</sup> These include increased physical functioning, higher reported quality of life; increased likelihood of employment; decreased need for costly, disruptive, and time-consuming travel (sometimes for accompanying caregivers as well) to and from treatment centers; the requirement of fewer trained personnel; and less natural resource consumption. For PD, this includes lower use of local water supplies but at the expense of single use disposable plastics. More recently, home dialysis imparted another benefit, the ability to perform dialysis therapy despite physical distancing requirements that were particularly salient during the COVID-19 pandemic. In the current era with high fuel costs and increasing frequency of weather extremes, dialysis at home without the need for regular travel to a dialysis center would appear to be increasingly

**Correspondence:** Edwina Brown, Renal Department, Hammersmith Hospital, Du Cane Road, London W12 0HS, UK. E-mail: [e.a.brown@imperial.ac.uk](mailto:e.a.brown@imperial.ac.uk)

<sup>5</sup>Members of the Steering Committee are listed in the [Appendix](#).

Received 12 February 2023; revised 11 April 2023; accepted 24 April 2023

**Table 1.** Challenges and actions to support home dialysis growth

Challenges to home dialysis growth	Actions to support home dialysis growth
<ul style="list-style-type: none"> <li>• Misconceptions and myths about home dialysis; patient and caregiver lack of confidence in their ability to perform home dialysis</li> <li>• Lack of familiarity with, training in, and knowledge of home dialysis management (physicians, nurses)</li> <li>• Shortage of trained home dialysis personnel</li> <li>• High cost of home dialysis supplies, in large part because of the need for shipping across long distances</li> <li>• Reimbursement schema inadequate to support the growth of home dialysis</li> <li>• Inadequate staff support for PD catheter placement and/or vascular access creation</li> <li>• Clinical inertia in challenging the status quo in dialysis</li> <li>• Conditions at homes of lower-income countries where space and hygiene cannot be guaranteed</li> </ul>	<ul style="list-style-type: none"> <li>• Expansion and improvement of patient and caregiver education before and after starting dialysis</li> <li>• Patient and caregiver education in home dialysis therapies to increase acceptance of home dialysis, improve confidence in their ability to perform home modalities, and promote patient empowerment and increased shared decision making</li> <li>• Increase access to assistance for PD and, if feasible, HHD by training family members, homecare workers if readily available, or by funded health care workers or technicians</li> <li>• Increase home dialysis training and education for nephrology professionals (nurses, fellows, practicing physicians)</li> <li>• Reduce the cost of home dialysis supplies by expanding and encouraging local and regional production</li> <li>• Develop technology for robust and less expensive HHD and APD delivery</li> <li>• Facilitate home dialysis education for policy makers, population health care managers, and stakeholders, especially with regard to the value of home dialysis and the reimbursement strategies needed for therapy growth; removal of regulatory and payment-policy barriers to the growth of home dialysis; ongoing global advocacy for proper and sufficient home dialysis therapy reimbursement policies</li> <li>• Increased training in PD catheter placement techniques and the development of PD catheter placement training centers or programs, setup HHD "Train the Trainer" programs through collaboration</li> <li>• Cultural transformation in clinical practice in predialysis and dialysis settings</li> </ul>

APD, automated peritoneal dialysis; HHD, home hemodialysis; PD peritoneal dialysis.

advantageous. PD is less affected during natural disasters such as floods or earthquakes where apart from difficulties of staff or patients to reach dialysis units, PD can be continued even when there is disruption of electricity and water supplies, and destruction or damage to dialysis equipment and medical facilities. In low resource settings, it is easier for preexisting PD patients to continue with their usual PD exchanges in disaster relief centers than to provide hemodialysis (HD).

## CHALLENGES

Despite the advantages of home dialysis, apart from countries with a PD-first policy, its use remains low in most countries.<sup>6</sup> The lower cost of PD compared to in-center HD is most apparent in higher income countries where salaries for the health care personnel required for HD are higher, and there is easy access to cost-effective PD fluid.<sup>1</sup> In low-income countries, salaries are lower; however PD fluid often must be imported (sometimes incurring import duties) and transported over long distances, making PD relatively more expensive.<sup>7</sup> HHD, although less expensive than in-center HD, costs more than PD, particularly when using manual exchanges

with continuous ambulatory PD. Realistically, with current technologies, home dialysis in lower-income countries can only be delivered by PD.

The challenge for expanding home dialysis in high-income countries is therefore different from those in lower-income countries. As already formulated in the publication from the International Home Dialysis Roundtable,<sup>4</sup> the steps required to promote home dialysis are as follows: (i) standardizing education on PD and HHD for clinicians with a focus on reducing dialysis burden for patients and caregivers, (ii) providing education and support for patients and caregivers using technology such as remote patient monitoring where appropriate and feasible to enable involvement in care decisions and choice of treatments, (iii) creating a culture of broad support for home dialysis within medical and kidney care teams, (iv) engaging with institutional and national policy leaders to advocate for provision of resources needed for home dialysis, and (v) developing and implementing locally appropriate methodologies to optimize delivery of home dialysis in different settings.

Some high-income countries such as Hong Kong and certain

lower middle income countries, e.g., Mexico and Thailand have developed PD-first policies at government level enabling contracts with commercial companies or supporting local manufacturing to lower cost of PD fluid, thereby reducing the cost of dialysis overall and enabling more people to receive dialysis. PD-first policies have been successful in promoting home dialysis; however, they may not be possible everywhere because they require complicated and coordinated efforts between governments, health care systems, physicians, and staff. PD-first may not necessarily be ubiquitously desired, because this policy cannot fully honor patient autonomy or the policy of shared decision making. The option of HHD provides greater patient choice and better transition, with the option of continuation of home dialysis when PD is contraindicated or deemed clinically inadequate. Access to a HHD training program can prevent patients from reverting from PD to in-center HD by default. Novel technology and a range of available HHD treatment options (daytime and nocturnal) provide an opportunity to precisely tailor HHD regimen to fit in with patient lifestyle and preferences.

To enable the growth of home dialysis, the barriers to adoption of home dialysis need to be recognized and actions developed to surmount these (Table 1). Education about benefits of and how to practice high quality PD and home HD, and advocacy with politicians and health care providers are required. Research is needed to understand barriers and factors enabling use of home dialysis and to develop methods to optimize resource use, shared decision making and improve outcomes. The views of patients and caregivers should be incorporated throughout the care delivery continuum. The overall feasibility of a PD-favoring policy has been suggested from pediatric dialysis programs. Because of the challenges of a permanent vascular access and long distances to pediatric dialysis centers even in high-income countries, most infants and most young children are on PD.<sup>8</sup> Outcomes have improved; however, optimal management requires well-trained and motivated parents and a multidisciplinary team. PD should be feasible even in infants and children living in families with poor socioeconomic status and in remote areas of low-income countries, provided there is extended remote support.<sup>9</sup>

## FORMATION OF INTERNATIONAL HOME DIALYSIS CONSORTIUM

The International Home Dialysis Consortium is led by the International Society for Peritoneal Dialysis and the International Society of Nephrology in conjunction with the International Pediatric Nephrology Association. It will leverage the existing programs of the 2 societies. The International Society for Peritoneal Dialysis has a worldwide membership of PD professionals and already has an active role in supporting PD education and PD

growth in lower-income countries. The International Society of Nephrology has global recognition of its education program and political advocacy through its Regional Boards and an official relation with the World Health Organization.

To achieve its aims of promoting equity and increasing access to home dialysis, the International Home Dialysis Consortium has formed a globally representative steering group of dialysis clinicians (medical and nursing). The consortium aims to engage with national and regional nephrology societies, patient organizations, researchers developing regional innovations, commercial partners with interests in PD and HHD, and those responsible nationally for health care policies and funding to leverage ideas, efforts, and advocacy worldwide, with the ultimate goal of bringing the benefits of home dialysis to more patients in need. Although the consortium is not yet fully formed, a joint International Society of Nephrology-International Society for Peritoneal Dialysis policy forum exploring how to increase access to PD was held at the African Association of Nephrology meeting in February 2023. A full launch is planned for the World Congress of Nephrology 2024 with a focus on regional concerns and involvement of local patient organizations.

## APPENDIX

### List of Steering Committee

Niang Abdou, Nephrology Department, Cheikh A. Diop University, Dakar, Senegal

Sunita Bavanandan, Department of Nephrology, Hospital Kuala Lumpur, Malaysia

Adrian Liew, The Kidney & Transplant Practice, Mount Elizabeth Novena Hospital, Singapore

Magdalena Madero, Department of Nephrology, Instituto Nacional de Cardiologia Ignacio Chavez, Mexico

Sandip Mitra, Manchester Academy of Health Sciences Center, Manchester University Hospitals, Oxford Road, Manchester, UK

Henriette Tyse Nygård, Haukeland University Hospital, Norway

Anjali Saxena, Division of Nephrology, Department of Medicine, Stanford University School of Medicine, Palo Alto, California, USA

Claus Peter Schmitt, Center for Pediatric and Adolescent Medicine, Heidelberg, Germany

Irma Tchokhonelidze, Nephrology Development Clinical Center, Tbilisi State Medical University, Tbilisi, Georgia

## REFERENCES

- van der Tol A, Lameire N, Morton RL, Van Biesen W, Vanholder R. An international analysis of dialysis services reimbursement. *Clin J Am Soc Nephrol*. 2019;14:84–93. <https://doi.org/10.2215/CJN.08150718>
- Liyanage T, Ninomiya T, Jha V, et al. Worldwide access to treatment for end-stage kidney disease: a systematic review. *Lancet*. 2015;385:1975–1982. [https://doi.org/10.1016/S0140-6736\(14\)61601-9](https://doi.org/10.1016/S0140-6736(14)61601-9)
- Nygård HT, Nguyen L, Berg RC. Effect of remote patient monitoring for patients with chronic kidney disease who perform dialysis at home: a systematic review. *BMJ Open*. 2022;12:e061772. <https://doi.org/10.1136/bmjopen-2022-061772>
- Mendu ML, Divino-Filho JC, Vanholder R, et al. Expanding utilization of home dialysis: an action agenda from the first international home dialysis roundtable. *Kidney Med*. 2021;3:635–643. <https://doi.org/10.1016/j.xkme.2021.04.004>
- Perl J, Brown EA, Chan CT, et al. Home dialysis: conclusions from a kidney disease: improving global outcomes (KDIGO) controversies conference. *Kidney Int*. 2023;103:842–858. <https://doi.org/10.1016/j.kint.2023.01.006>
- Yeung E, Bello AK, Levin A, et al. Current status of health systems financing and oversight for end-stage kidney disease care: a cross-sectional global survey. *BMJ Open*. 2021;11:e047245. <https://doi.org/10.1136/bmjopen-2020-047245>

7. Ghani Z, Rydell H, Jarl J. The effect of peritoneal dialysis on labor market outcomes compared with institutional hemodialysis. *Perit Dial Int*. 2019;39:59–65. <https://doi.org/10.3747/pdi.2017.00236>
8. Rees L, Schaefer F, Schmitt CP, Shroff R, Warady BA. Chronic dialysis in children and adolescents: challenges and outcomes. *Lancet Child Adolesc Health*. 2017;1:68–77. [https://doi.org/10.1016/S2352-4642\(17\)30018-4](https://doi.org/10.1016/S2352-4642(17)30018-4)
9. Aoun B, Ulinski T, Sanjad S, et al. Chronic peritoneal dialysis in Lebanese children of families with low socioeconomic status. *Perit Dial Int*. 2015;35:93–96. <https://doi.org/10.3747/pdi.2013.00342>