“Let’s keep close”: Increasing peritoneal dialysis service effectiveness through bridging the gap between patient and provider

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Submitted: 25 December 2014, Accepted: 8 May 2015

Abstract

This paper examines the challenges of peritoneal dialysis (PD) service delivery in Thailand where PD is expected to be the possible solution in overall health care budget control. In our developing country, the extent of the service quality under the constraint of resources is an issue that clinicians need to consider when providing health care for PD patients. Since the patients are required to self-manage PD treatment at home, adverse outcomes may be difficult to control. There is a gap between patients and providers, with poor patient understanding, low treatment adherence, and fragmented care delivery. These are common barriers to promote the quality of the service. To overcome these obstacles, strategies derived from the evidence are proposed to bridge the gap, including early patient identification and home visits, effective PD patient training, and continuing home visits and support. In addition, health resource standardisations are described.

Keywords
Peritoneal dialysis, service quality, standardised resources.

Introduction

Peritoneal dialysis (PD) is a life-supporting therapy which is cost-effective for patients with kidney failure worldwide. In Thailand, its utilisation is now increasing dramatically. Based on national data reported by the National Health Security Organization, PD incidence has risen from 7,814 in the year 2008 to 24,211 in the year 2013 (Kanjanabuch, 2013), resulting from the launch of the PD First policy, even though essential resources such as PD staff, continuing care service, and information systems seem unprepared. When there is over-demand, shortening supply has serious negative impacts for quality of care and patient safety. This results in PD centre personnel having to work with conflicts between the tasks of providing service and the level of their commitment. Based on the above, we urgently need to solve the equation pertaining to how more patients can get optimal dialysis care with the same or even fewer resources. The way to achieve this is for providers to get closer to patients and understand their needs and difficulties. This article discusses the challenges of PD service delivery and proposes practical solutions to promote its effectiveness for countries that primitively use PD as a major health provision for patients with kidney failure.

Many adverse events of PD utilisation are substantial, as shown in a previous study of a large PD cohort in the US,
conducted by Mujais and Story (2006), which sampled more than 40,000 patients to indicate trends in patient outcomes, and assess technique success in PD modality utilisation. The results showed a declining rate of patient survival and a higher rate of technique failure during the first six months of therapy. Moreover, the phenomenon of early transfer to haemodialysis (HD) was pronounced in PD patients, resulting from infection. Similarly, Sirivongs et al. (2006) found an early presenting rate of PD-related peritonitis for Thai patients with PD. An outcome study by Kanjanabuch et al. (2012) reported a number of key performance indicators (KPIs) among 8,201 PD incidences observed in 2011. Compared to the referenced Thailand KPIs, it showed that 72.5% of one-year patient survival, 25.5 patient-months/episodes of peritonitis rate, 27.5% of annual drop-out rate, and 15.9% of mortality rate were unmet. These untoward events affect patients’ lives. When patients are at risk of such complications acquired from self-performed PD at home, this necessitates interventions to maximise patient safety.

**What are the challenges for PD service delivery?**

Generally, the level of patient safety reflects the effectiveness of PD service. If PD procedures are performed by patients or caregivers correctly, patients will have no serious complications, indicating success. There are a number of challenges for delivering PD service as it can expose the patients to hazards, leading to inefficient resource use. As far as we can see, PD centres may suffer from disadvantages and increased care cost.

**Poor management of patient preparation when starting PD**

Timely preparation for the patients is recommended to provide an opportunity to plan for successful PD or conservative kidney management (Warwick, 2014). However, progressive decline of kidney function is difficult to detect unless it is actively investigated. According to the population-based Thai Screening and Early Evaluation of Kidney Disease (SEEK) study, only 1.9% of the subjects were aware that they had chronic kidney disease (CKD) (Ingsathit et al., 2009). In Thailand, the data from a previous study indicated that the prevalence of late referral to a nephrologist is 52.1%. Most were referred one to six months before commencing treatment. Factors predicting late referral are marital status, poor perception of dialysis, fear of dialysis, and the distance barrier (Changpetch, 2009). Late referral may be associated with increased morbidity, mortality and decreased quality of life due to lack of predialysis education and support. There are a number of very strong pieces of evidence proving that complicated health problems are associated with serious PD-related infection (Beddhu et al., 2002; Chow, 2005). Moreover, the effectiveness may be impeded by some characteristics of end-stage renal disease (ESRD) patients, including living in areas far from PD centres, having low incomes and lower levels of education, being of advanced age, and those with co-morbid conditions (Beddhu et al., 2002; Seanhom, 2008; Ward, 2008). These attributes increase the risk of patients in developing adverse outcomes.

**Lower level of treatment adherence of the patients when living with PD**

Since PD is managed by patients at home, this may dispose some patients to poor compliance. Compliance of patients with the prescribed treatment and procedure protocol becomes crucial to prevent complications. Modifications to the PD regimen, including poor hygienic conditions, protocol deviations, incorrect diet, and improper drug use, have been empirically acknowledged as important issues by PD care providers.

Infection complications are among the major causes of drop-out from PD to HD. Russo et al. (2006), indicated that 25% of patients were only partially compliant with their drug therapy, and 23% of patients were non-compliant with the exchange protocol procedures, with a significant association between compliance and the incidence of peritonitis. A further 11% were non-compliant with exit-site protocol procedures, with a clinically significant correlation to peritonitis.

**Fragmented service design when providing a long-term treatment**

Another issue of quality is the inadequate supports for PD self-management and complication prevention offered across episodes of illness and settings. It can be seen that although the PD provision aims to promote home-based self-management in patients, most of the care process is undertaken in hospital settings. Indeed, it is important to consider whether the little attention paid to the later phase of illness will lead to discontinuation of the care model. In other words, the existing service may lack a close monitoring role important to the long-term PD. In a recent survey of Tungsanga (2008), which asked for the reasons given by patients who did not choose PD, the results indicated that 66% fear PD-associated peritonitis, 64% fear creating a future burden to
family members, and 32% had a previous PD complication. The evidence pointed out that patients’ lack of confidence in their ability to maintain proper PD self-care might result from the ineffective support of PD service. While continuing care is imperative to giving such support effectively, resource constraint may lead to fragmentation of care.

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According to the evidence shown, health care providers should provide services that reflect the fundamental change required to address the predictable outcomes with the goals of: decreasing fragmented care; improving patient self-management and quality of life; optimising the use of resources; and decreasing costs. In order to maximise PD service effectiveness, four practical solutions are highlighted here.

Timely patient identification and home visits

There are two significant points related to seeing patients earlier. Firstly, with timely referral to a nephrologist, patients may be initiated into PD treatment earlier in order to delay the progression of kidney function and co-morbid diseases. Usually, CKD patients are identified at around stage 3, giving the nephrologist time to educate the patients about his/her suitability for different modes of RRT (Dinwiddie, 2004). In Thailand, most kidney patients are more likely to be identified at diabetes and hypertension clinics by general practitioners (GPs). However, they have no clear measures to refer the patients to nephrologists. Therefore, continuous cooperation between GPs and nephrologists or the multidisciplinary CKD care team is imperative for optimal patient care. Wavamunno and Harris (2005) suggested a number of approaches that can facilitate an earlier referral to nephrology services. These include medical education, improved communication between GPs and nephrologists, a team approach, providing patients with information, strict adherence to guidelines, and offering financial incentives to facilitate early referrals.

Secondly, early visits to patients’ homes after PD initiation can help providers assess the performance in their real-life situations. A home visit strives to preserve quality of life by maintaining close contact, and helps reduce the patient’s mental stress due to self-performing PD. The main focus should be on early detection of evolving co-morbidities, proper technique adherence, monitoring of nutritional status, and establishment of an orderly follow-up system to ensure patient compliance and rehabilitation (Nayak, Antony & Nayak, 2012). The service is implemented to minimise the possibility of any further complication or episode that would require special intervention or hospitalisation.

Effective PD patient training

Because of the complexity of the PD self-management process, and the systematic training required, both PD nurses and patients should spend enough time to closely participate in these processes. PD nurses should be held responsible for reasonably foreseeable patient errors that could have been prevented by well-structured preparation. Poor patient training will create confusion, non-compliance and a loss of confidence for the learners. To avoid these, outcome evaluation of the training process should include periodic reassessments of patient technique and problem solving, and tracking of such outcomes (Bernardini, 2006). In Thailand, patient training has mostly been provided in hospitals during a period of three to five days. At the time of the home visit, retraining will be carried out accordingly, until the patient is able to perform the PD procedures safely.

The most striking study of the impact of a PD training program on outcomes involved adult learning theory-based curriculum (Hall et al., 2004). A well-structured program that focused on the learners’ needs rather than the trainers’ needs was implemented. The new curriculum resulted in lower exit-site infection rates, compared to conventional training, and fewer hospital admissions. It seems reasonable to suggest that training must continue at least until the PD trainer determines that the patient can safely perform all required procedures. That means an effective training program for PD patients is essential to ensure the desired outcomes.

Continuing home visits and support

PD patients need to be closely monitored on their performance, especially in the first six months when higher incidences of adverse events are observed. Because the patients have to spend most of their time in self-care at home, it is very necessary that PD centres extend their services to outside settings; locations within the community will be required. In reality, home visits provide an ideal approach for the dialysis team to assess and observe the achievement of PD procedures implementation and to uphold the continuing care between the centre and the home.
The 2006 ISPD Nursing Liaison Committee strongly recommends the use of home visits as part of the overall care of PD patients, as they provide insight into the way patients adapt and function in their own environment (Bernardini, Price, & Figueiredo, 2006). In order for patients to have consistent PD care, an outreach PD facility needs to assume responsibility for creating a partnership with patients’ communities for extending care. In Thailand, community facilities, local primary hospitals and health centres are used as local networks for providing home visit services. Especially in remote areas, there is a model of local volunteers serving as health assistance used in the service. In order to promote outreach, community teams should be accounted for as monthly home visitors. Warmington (1996) stated that successful home visits for PD care from St George’s Hospital, England, could be a prominent service through collaboration with the CAPD sister who was the local health professional or primary care nurse. Similarly, Kliger, Carey and Finkelstein (1999) examined the factors that contribute to the success of a PD program. The result indicated that the elements of a successful PD program include short-term residence in rehabilitation or nursing facilities before returning home, and long-term nursing home management. So, the pathway linking hospital-based and home-based care is a design complementary to reaching the quality of continuing care. Therefore, frequent and continuing visits are needed to promote the effectiveness of the service.

**Standardised resources as a mechanism for bridging the gap**

Apart from health care delivery strategies, standardisation of the determinants of service effectiveness, clinical practice guidelines and human resources should be encouraged.

After the Thai PD initiative had started in 2008, variations in PD clinical practice depended on the availability of health care resources in individual facilities. Properly developed clinical practice guidelines (CPGs) related to PD management may help providers and patients in reaching optimal health care decisions (Mustafa et al., 2014). In line with these, there are a numbers of Thai CPGs developed by working groups who are experts in the nephrology area (Kanjanabuch, 2013). While national guidelines are widely disseminated, problems with guideline application and evaluation need to be addressed to identify areas that can be modified in future guideline development.

Provider education/training needs to be promoted. A nephrology training program for nurses needs a core curriculum focusing on transformative roles for PD care from provider-oriented to patients’ self-managed health care and collaborative roles to link between hospital-based and home-based care. In Thailand, since 2012, the PD specialist program developed by the Thai Nursing Council and Midwifery has been used as a standard for training nurses to be PD nurse practitioners. The advanced skills for these expected roles — including effective communication, educative and innovative ideas, data management, and teaching technique used in patient training — are recommended to be built upon their required experiences in the program. However, the standard program is subject to change with the dynamic of clinical circumstances that may affect the application of the program at a given time. To ensure nurse competencies in nephrology practice, the ISPD recommendations include a six- to eight-week orientation in PD and assignment to a mentor who will observe their performance (Blake et al., 2000). The expertise will be augmented over a period of years in their practice. Moreover, previous experiences in general medical and surgical nursing should be taken in to consideration since the majority of PD patients have numerous co-morbid conditions.

**Conclusion**

In the current critical situation, a number of untoward outcomes may destroy the confidence in PD utilisation of both providers and patients. The ultimate goals of the PD service provision are aimed at saving patient lives, being accessible and being efficient in care delivery, and maximising equity in health for ESRD patients. It seems not so far to reach there if the distance can be shortened. Through the four practical solutions, the challenges identified in the paper can be met, and the satisfied outcomes will be achieved.

**References**


