

Retraining of Home Parenteral Nutrition (HPN) users in Australasia – a consumer audit study

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Introduction

Home parenteral nutrition (HPN) is required when there is ongoing insufficient nutrient intake through the digestive system – intestinal failure. HPN can be required long term, even life-long, and while life-saving, it requires ongoing patient/carer competency in central venous access and care to avoid possible serious complications.

Published guidelines^{1, 2} recommend patients and carers are trained and meet competency in certain criteria of connecting and disconnecting procedures before going home with HPN. Retraining, except in the case of recurrent central line-associated blood-stream infection (CLABSI), is not addressed in these guidelines.

Despite the long term central venous access device (CVAD) use by many HPN users and the inherent risks of such, PNDU suspected little or no retraining or updating of HPN users takes place except if there is recurring CLABSI.

1. Gillanders et al. *Nutrition* 2008; **24**: 998-1012.
2. Pirono et al. *Clinical Nutrition* 2016; **35**: 247-307.

Aim

The aim of this survey was to identify and understand the individual HPN user experiences of formal retraining in connecting and disconnecting to parenteral nutrition in the home environment.

Secondly, it further sought to collect data on one aspect of the connection process – drawing back into the syringe from the CVAD before connecting to PN – to see if this step was performed in accordance with current evidence-based protocol or expert opinion, and whether there was any correlation between years of HPN use, retraining or lack thereof, and the use (or not) of latest recommended protocols for this one aspect.

Methods

All Australasian members of PNDU currently on HPN (or their carers) were invited to participate in an anonymous online questionnaire consisting of 19 questions over two weeks in November 2018.

Limitations

Our study sample was small so the results cannot be generalised to all HPN users. Further, the survey relied on patient recall and although we attempted to define the term 'retraining', interpretation may have varied amongst the responders.

Limitations in the survey questions, specifically year ranges offered, impacted on our ability to investigate any correlation between length of HPN use, retraining or lack thereof, and use (or not) of latest recommended protocols, when looking at one small part of the PN connecting-up process – withdrawing back into a syringe. This component of the survey investigation was also impacted by the absence of evidence-based protocols for withdrawing back into the syringe.

Conclusions

Medically trained and experienced clinicians accredited to care for CVADs are provided in-service training whenever a change in policy and/or evidence-based practice occurs, and possibly also semi-regular reaccreditation in CVAD care. Similarly, as many patients remain on HPN long-term, it is reasonable to expect that further training or repeat demonstration of competency by the HPN user would reinforce good practice, and that the HPN user would benefit from being updated in the latest evidence-based procedures as part of that retraining. This would assist in complication prevention, consequentially maintaining quality of life and reducing healthcare costs.

Regular retraining in CVAD use and care does not currently appear in HPN guidelines and few HPN users in our study receive regular retraining as part of HPN management. We recommend discussion and further research into regular retraining in CVAD use and care by HPN users.

Additionally, more research is needed to determine evidence-based best practice for withdrawal of blood, and, if required, how much drawback is sufficient and safe, especially considering the long term and possibly indefinite nature of HPN for HPN users.



Acknowledgements

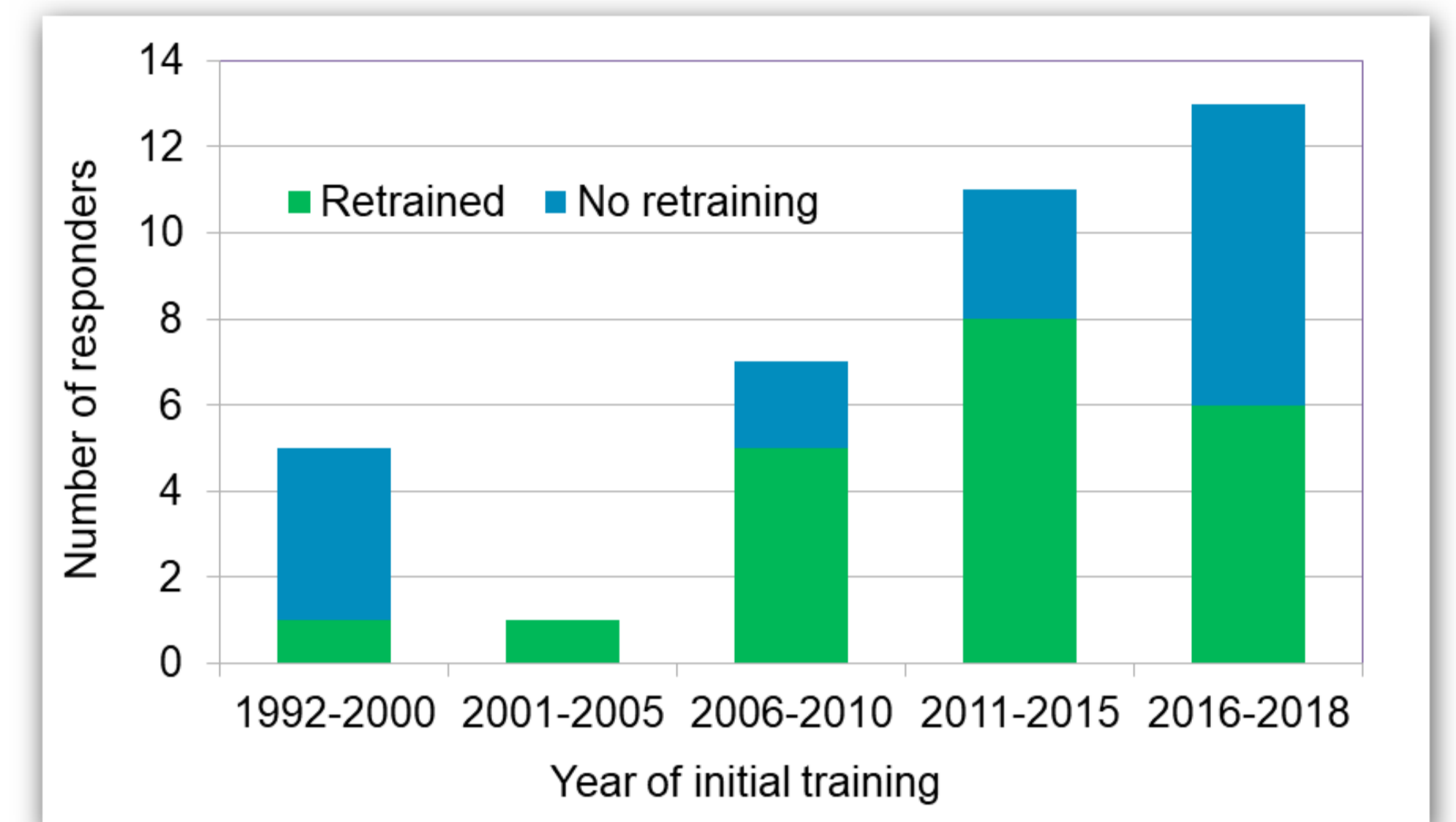
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Results

There were 40 responders representing 30 adult and 10 child HPN users. Thirty-two (80.0%) responders had been on HPN for 2 or more years, receiving initial training before discharge.

Sixteen of 38 clear responses (42.1%), including 12 adults and 4 children, did not receive any retraining. Further, of these 16 responders, 9 (56.3%) had received their initial training during 2015 or earlier including 6 receiving initial training prior to 2011 (Figure 1).

Figure 1:



Of those 22 responders who reported receiving retraining, 16 (72.7%) had received retraining once or twice, 2 (9.1%) regularly every year, 3 (13.6%) regularly every 2 years and 1 responder could not remember how many times retraining had occurred. Most (81.0%) retraining was commonly related to a suspected or confirmed CLABSI (41.2%), or change of medical equipment/item used to perform the procedure (44.4%).

In the absence of evidence-based best protocol, AVATAR (Kleidon & Gavin 2018) provided expert opinion on drawback procedure: draw back only until the first sight of blood in order to check catheter patency and/or removal of a line lock. Overall, 34 (85.0%) responders withdrew back into the syringe before connecting to PN, 25 (73.5%) discarded the aspirate, and 9 pushed the fluid back into the central line (Figure 2). Of the 9 (8 adults, 1 child) responders who withdrew more than 2 mL, 5 (4 adults, 1 child) had received their initial training prior to 2014. Further, of these 9 responders, 7 used the same drawback procedure as taught when first going home on PN.

Figure 2

