

# Nursing interventions to prevent infections in Peritoneal Dialysis Patients – literature review

Maria Arminda Silva Tavares – Specialist Nurse, MSc, Head Nurse Diaverum – Figueira da Foz, Portugal

EDTNA/ERCA Peritoneal Dialysis Consultant

[Mariaarminda.Tavares@diaverum.com](mailto:Mariaarminda.Tavares@diaverum.com)

## Introduction

Peritoneal Dialysis (DP) is a renal replacement therapy (RRT) suitable for patients with renal failure. It is a home therapy performed by the patient, after receiving education and training by nephrology nurses. Patients learn how to perform PD treatment, manage exit-site care, managing therapeutics regimens, diets and monitoring complications. During this process they face several changes, it is a daily challenge. Although they have been trained to prevent infections, they still have a high risk of infection that can lead to PD dropout. Evidence based practice can help nephrology nurses to use the best evidence available in making decisions about patient care and improve quality nurse care.

## Objectives

To identify nursing interventions to prevent infection in peritoneal dialysis patients

## Methodology

A literature review has been performed using ESBCOhost (CINAHL complete/MedLine complete/Medic Latina/CoChrane Database of systematic reviews) with the search of the terms **peritoneal dialysis**, **preventing infections** and **nurses interventions**. Papers published between January 1<sup>st</sup> 2014 and December 31<sup>st</sup> 2018 were selected using PICO Strategy. P= Population – Peritoneal Dialysis patients; I=Interest – Preventing Infections; Co=Context – Nursing Interventions, with the inclusion criteria (adults in PD, full text articles, references to nursing interventions and infections in PD, English language). The focused clinical question was, what are the nurses interventions that prevent infection in Peritoneal Dialysis patients?

## Results

From the 176 articles obtained, ten met the inclusion criteria. The next flow chart shows the selection process. After a deep analysis (full text reading), two revealed evidence on educational interventions from nurses, three focused on nurses role to prevent peritonitis and exit-site infections, two dedicated on prevent PD infection in health care services, one describes nurses interventions to prevent general infection in PD, one identify nursing interventions to people undergoing in PD and one focused on the guidelines to prevent infection in PD.

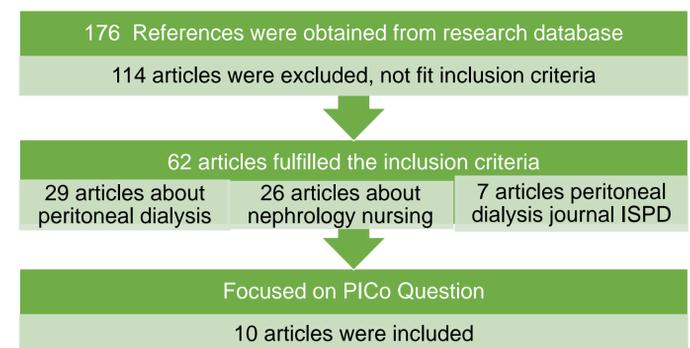


Fig. 1 – Articles selection flow chart

Title, author(s), year	Methodology	Key Results
<b>Nursing diagnoses, patient outcomes, and nursing interventions for patients undergoing peritoneal dialysis</b> - Silva, RA; Bezerra, MX; Mendonça; AE and Salvetti., MG . 2016	Quantative Cross-sectional study in 68 peritoneal dialysis patients. Using identification of nurses diagnoses according to NANDA, nursing interventions using Nursing interventions Classification (NIC)	Nursing diagnose: Risk for infection. Nurses Interventions - Risk identification; Health screening; Health education; Immunization/vaccination management Other nursing diagnoses: fatigue, impaired walking, acute pain and excess fluid volume
<b>The challenges in preventing infection in peritoneal dialysis: a nurse's viewpoint</b> – Figueiredo, Ana Elizabeth . 2014	Author review the role of nurses in published literature about preventing infections in PD focused on major risk factors	Major Risk factors: Catheter Related; patient related, programme management Highlights the nurses interventions on major risk factors
<b>Identification of targets for prevention of peritoneal catheter tunnel and exit-site infections in low incidence settings</b> – Santos <i>et al.</i> 2016	Retrospective observational study in 665 patients incident on PD	Adherence to recommended clinical procedures reduces the incident of tunnel and exit-site infections. Early insertion of the peritoneal catheter can be a effective measure to reduce tunnel and exit-site infection.
<b>Educational interventions in peritoneal dialysis: a narrative review of literature</b> – Schaepe, C and Bergjan, M . 2015	A narrative review of primary research. Review of 18 articles related to people undergoing in PD.	Educational interventions in PD is an understudied area , more research is needed to support the existing recommendations. Qualitative research is need to analyse individuals learning experiences. PD trainers should include in their practice the theory behind educational interventions, such, the concept of self-management.
<b>Peritoneal Dialysis: Understanding, educating and adhering to standars</b> – Schreiber, ML . 2016	Author analysis About PD	Prevent infection focused on Hand hygiene, with emphases to the Hand washing. Importance to adherence to practice guidelines and protocols.
<b>The role of nurses in the prevention of peritonitis: an integrative review</b> – Dias, AC; Prado, JP; Oliveira, HU et al. 2014	Descriptive study of integrative review of 12 article with analysis of national and international evidence of importance of nurses preventing peritonitis	Multidisciplinary team approach with focus on the nurses role to prevent peritonitis. Highlighting on nurses skills to promote health education, effective PD training and continuous support.
<b>A syllabus for teaching peritoneal dialysis to patients and caregivers</b> –Figueiredo <i>et al.</i> 2016	Guidelines from the Nursing Liaison Committee of International Society for Peritoneal Dialysis	Important recommendations to help PD nurses to training their patients and caregivers based on a consensus of training program reviews, applying current theories and principles of adult education.
<b>Decreasing infections in Nephrology patient population: Back to Basics</b> – Kear, T; Ulrich, B. 2015	Authors analysis of incidence of infections in nephrology patient population and explore evidence nephrology nurses can use to prevent infections	Nurses interventions focused on develop a positive patient safety culture. Use of guidelines and published evidence-based resources can help guide the daily practice and decrease infection rates.
<b>Peritoneal dialysis – related infections recommendations: 2016 update. What is new?</b> – Liakopoulos, V <i>et al.</i> 2017	Article review the changes and new guidelines introduced by ISPD regarding PD related infections	New concepts emerged: Importance of continuous quality improvement program with a multidisciplinary team approach.
<b>ISPD Catheter related infection recommendations:2017update</b> – Szeto, C-C <i>et al.</i> 2017	Guidelines update from ISPD Catheter related infection	Evidence based recommendations to prevent catheter-related infection

## Conclusion

Infection can cause significant morbidity and nephrology nurses play an important role in their prevention. Literature review is a useful tool to identify evidence base guidance to practice. Although we identify information, guidelines and recommendations to prevent infection in PD, there is a lack of research regarding nursing interventions to support them. Nurses are the primary care providers to PD patients and it's important to emphases their role on the multidisciplinary team. More research is needed in order to create evidence based information of nurses intervention that drives infection prevention in peritoneal dialysis.

### References

- Silva, RA; Bezerra, MX; Mendonça; AE and Salvetti, MG (2016) -Nursing diagnoses, patient outcomes, and nursing interventions for patients undergoing peritoneal dialysis. *Acta Paul Enferm*; 29(5):486-93.
- Figueiredo, Ana Elizabeth (2014) The challenges in preventing infection in peritoneal dialysis: a nurse's viewpoint . *Renal Society of Australasia Journal*. 10(3), 120-125.
- Santos *et al.* (2016) - Identification of targets for prevention of peritoneal catheter tunnel and exit-site infections in low incidence settings . *Perit Dial Int* 2016 ; 36(1):43-51
- Schaepe, C and Bergjan, M (2015) - Educational interventions in peritoneal dialysis: a narrative review of literature. *International Journal of Nursing studies*. 2015; 52; 882-898
- Schreiber, ML (2016) - Peritoneal Dialysis: Understanding, educating and adhering to standars . *MedSurgNursing*. 2016.Vol. 25; nº 4.271-274.
- Dias, AC; Prado, JP; Oliveira, HU et al. (2014) - The role of nurses in the prevention of peritonitis: an integrative review. - *J Nurs UFPE on line*.,Recife..2014. 8(7):2130-39
- Figueiredo *et al.* (2016) - A syllabus for teaching peritoneal dialysis to patients and caregivers. *Perit Dial Int* 2016; 36(6):592-605
- Kear, T; Ulrich, B (2015) - Decreasing infections in Nephrology patient population: Back to Basics. *Nephrology Nursing Journal*. 2015.45(5), 413-443.
- Liakopoulos, V *et al.* (2017) - Peritoneal dialysis – related infections recommendations: 2016 update. What is new?. *Int Urol Nephrol*. 2017.49:2177-2184.
- Szeto, C-C *et al.* (2017) - ISPD Catheter related infection recommendations:2017update. – *Perit Dial Int*. 2017. 37(2):141-154
- Miller, S. A. (2001) – PICO Worksheet and search strategy. US National Center for Dental Hygiene Research.