

# Catheter induced bloodstream infections and their prophylaxis from the point of view of the nursing practice

**Harald Titzer, RN, BSc, MSc**

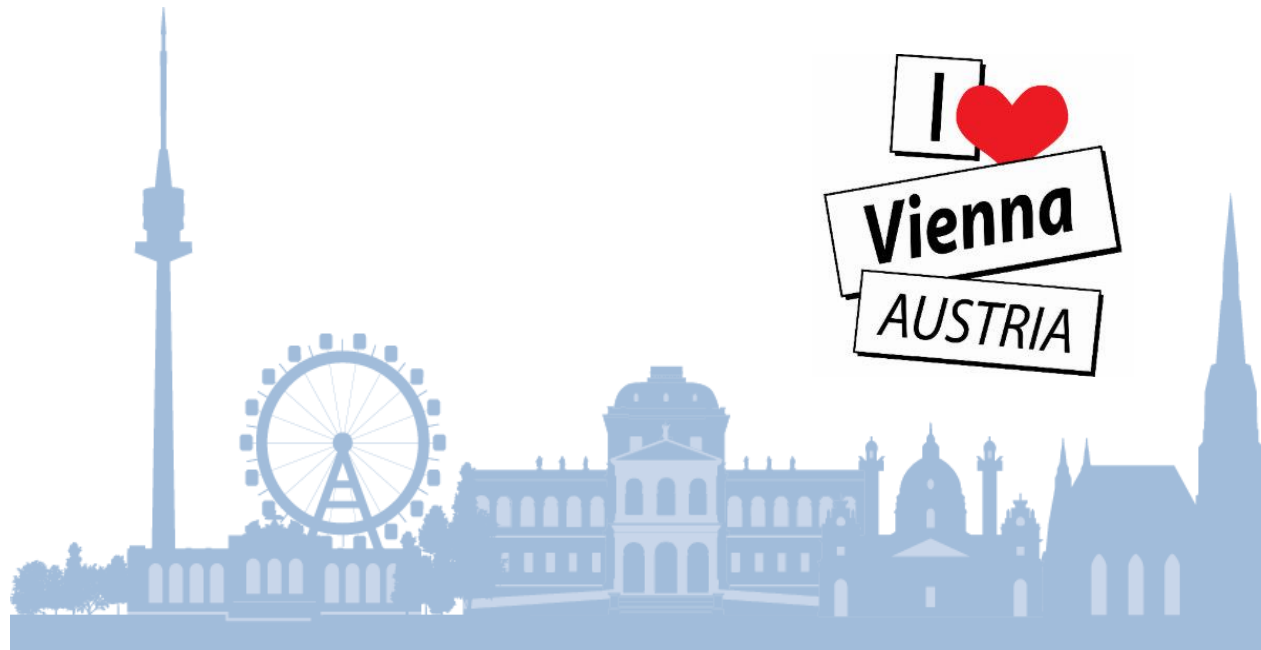
**Nurse Consultant in Oncology and Hematology**

Vienna General Hospital – Medical University, Department of Medicine I, Clinical  
Division of Oncology and Hematology

Contact Details: [harald.titzer@akhwien.at](mailto:harald.titzer@akhwien.at)

# COI – Disclosure Slide

I have nothing to declare.

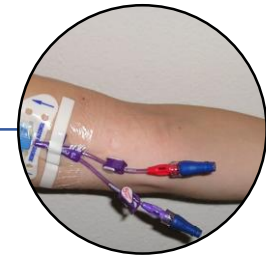


# Most common used in Oncology Care

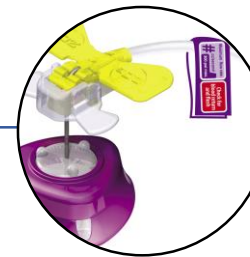
Collection of  
blood samples



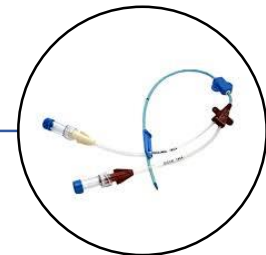
Safe Administraion of  
systemic Cancer  
Therapies



PICC  
Line



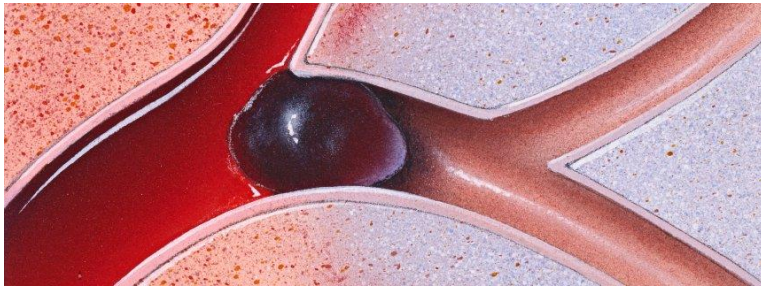
Port  
Catheter



CVC



# Most common complications



Thrombosis



Infections

Occlusions



Walters, B., & Price, C. (2019). *Quality Improvement Initiative Reduces the Occurrence of Complications in Peripherally Inserted Central Catheters*. *Journal of Infusion Nursing*, 42(1), 29–36.

# Background Information

Contamination caused by eg.:



Insertion of the Catheter



Contact with Infusionsystems



Contamination of IV medication



Moistured Dressing



Contamination of Luer Lock

Empfehlungen der Kommission für Krankenhaushygiene und Infektionsprävention (KRINKO) (2017), RKI, <https://edoc.rki.de>.



# Risk Factors

# Risk Factor I

## IDEAL NURSE/PATIENT RATIOS



**Nurse – Patient Ratio**  
related to an increase of  
CABSI

(No findings concerning  
the optimal Nurse –  
Patient ratio





Journal of Vascular Nursing  
Volume 36, Issue 3, September 2018, Pages 145-148



Article

## Oncology nurses' knowledge about central line catheter: Caring, complications, and applications among cancer patients—A cross-sectional study

# Risk Factor II



[this article](#) | [search](#) | [submit a manuscript](#) | [register](#)

[BMC Infect Dis.](#) 2018; 18: 606.

PMCID: PMC6276178

Published online 2018 Dec 3. doi: [10.1186/s12879-018-3514-x](https://doi.org/10.1186/s12879-018-3514-x)

PMID: [30509200](https://pubmed.ncbi.nlm.nih.gov/30509200/)

## The adherence to guidelines for preventing CVC-related infections: a survey among Italian health-care workers

[Pietro Ferrara](#) and [Luciana Albano](#)

# Lack of Knowledge



American Journal of Infection Control  
Volume 45, Issue 9, 1 September 2017, Pages e95-e97



Brief Report

## Oncology nurses' knowledge of guidelines for preventing catheter-related bloodstream infections

[Mohammad Al Qadire RN, PhD](#)

March 2019



# Recommendations I

## Set Education Goals

- Educate the multiprofessional Team
- Put your focus on target group
- Watch out which device is used and how

## Insertion Process

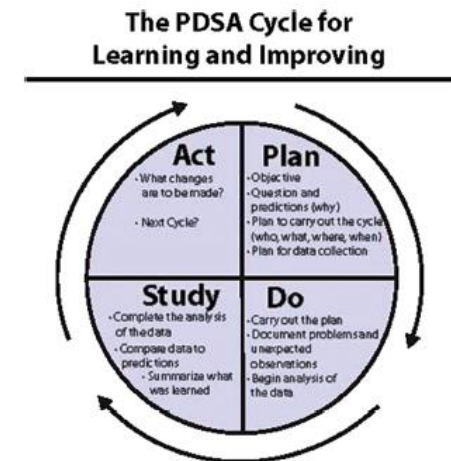
- Check the insertion process and make sure a proper manual is used
- Eg. Using Ultrasound

## Hand Hygiene

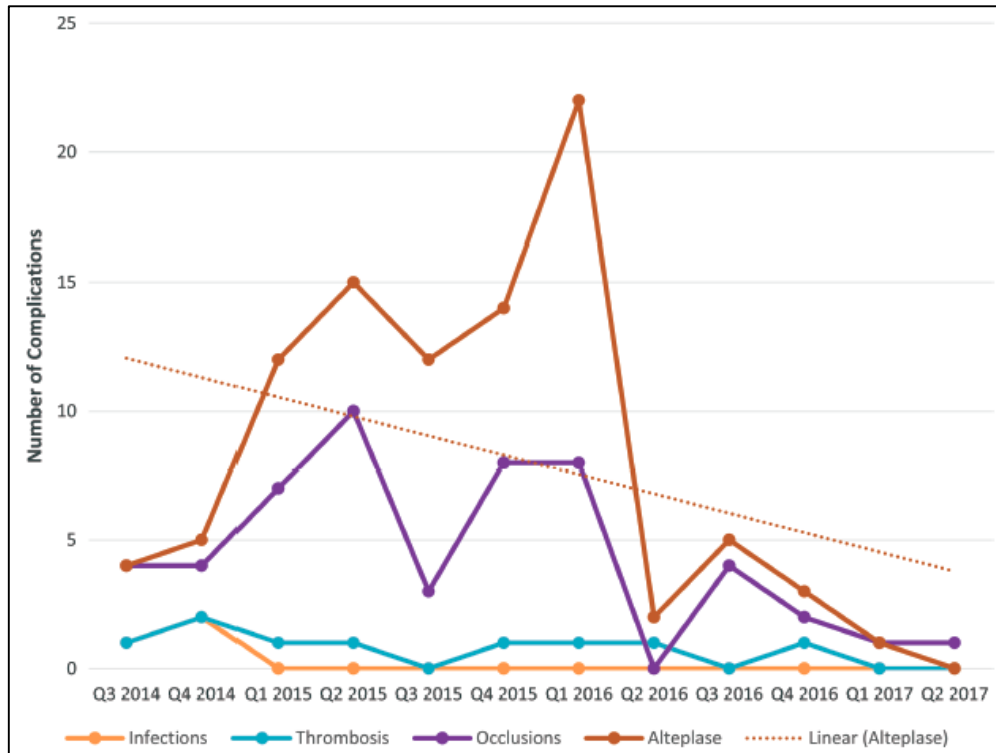
- Make sure that everyone is instructed to proper hand hygiene

# Recommendations II

- Train Nurses in how to use devices
- Make sure that proper wound dressings are used
- Re – educate the multiprofessional team
- Don't stop with asking how it works and what can be done else



# If you do so..



**TABLE 2**

## PICC Complications by Year With Statistical Analysis

Complications	Q3/Q4 2014	2015	2016	2017	P Value
Number of PICCs inserted	194	403	384	295	
Total catheter days	2714	5603	6775	4575	
Confirmed infections	1	0	0	0	
Confirmed thromboses	3	3	3	1	.3388
Total occlusions	8	28	14	7	.0023*
Total doses of alteplase administered	9	53	32	7	.0015*

Abbreviation: PICC, peripherally inserted central catheter.

\*Significant at  $P < .05$ .

Walters, B., & Price, C. (2019). *Quality Improvement Initiative Reduces the Occurrence of Complications in Peripherally Inserted Central Catheters*. *Journal of Infusion Nursing*, 42(1), 29–36.



## The EONS Cancer Nursing Education Framework

Module 3:  
Cancer Treatment and  
Safety



# Thank you for your attention!

harald.titzer@akhwien.at



General Hospital of Vienna, Austria