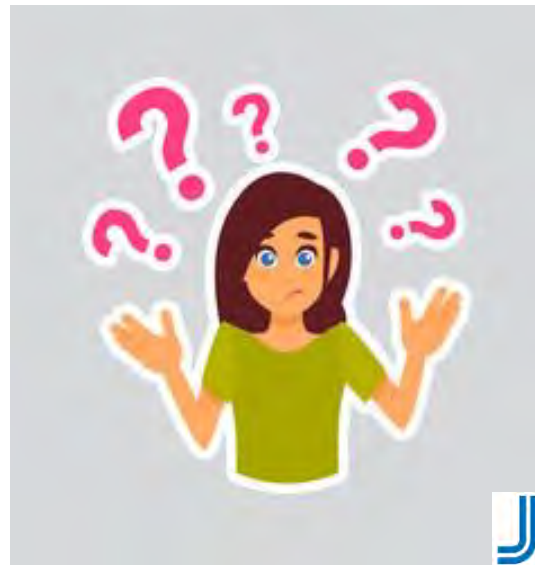


# Catheter Related Blood Stream Infections at ASIH Stockholm Södra, incidence and variation between the different Home Care Teams

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Do we have a lot of  
infections in Central  
Venous Lines?



## Background

- In the Stockholm region, advanced medical home care teams (ASIH) offers hospital like care at home.
- Many patients enrolled in ASIH are encouraged to have a central venous line (CVL) in order to gain a safe, accessible route to obtain medical treatments.
- Catheter-related blood stream infections (CRBSI) constitute a major complication associated with the use of CVL.



# CRBSI

- Incidence:
  - A study from UK showed that 23% of 588 patients receiving home parenteral nutrition (HPN) suffered from CRBSI at least once (Dibb et al 2014)
  - In two studies from the US the incidence of CRBSI was 10% or 5 % respectively in a national registry of patients receiving HPN ( Ross et al 2016, Vashi et al 2017)

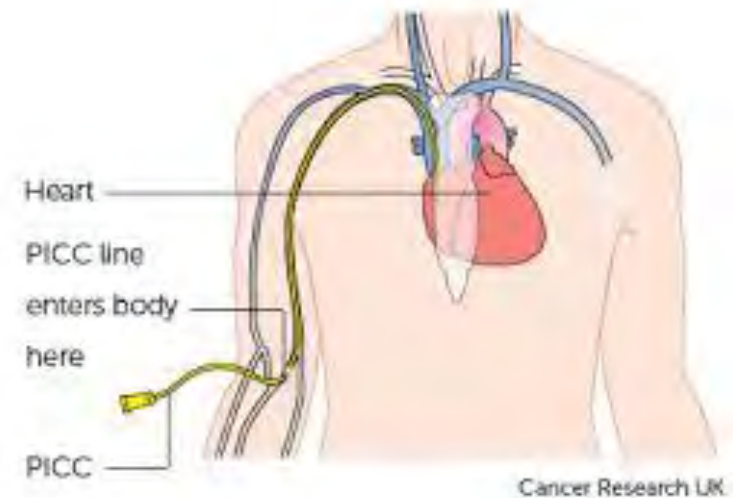
# CRBSI

- Risk factors for CRBSI are the patient's underlying disease status, nutritional status and the length of time the catheter remains in place.
  - Fat emulsions? Nr of infusions?  
Kind of CVL?
- Caused by coagulase-negative staphylococci, Staph aureus, enterococci, gramnegative bacilli, candida.



## Different Central Venous Lines

- Peripherally inserted central catheter (PICC)
- Subcutaneous venous access port (VAP)
- Central venous catheter (CVC), non-tunneled or tunneled.



# Aim

- To investigate the incidence and risk factors of CRSBI in patients with CVL receiving HPN at ASIH Stockholm Södra.
- In addition, a comparison between the different Home Care Teams at the unit was studied.

# A retrospective audit

- All patients enrolled in ASIH Stockholm Södra in 2017
- Their medical records were reviewed and the patients that received parenteral nutrition (PN) at any time during enrollment were identified.
- Gender, age, diagnosis, frequency of PN and team belonging.
- Incidence of CRBSI

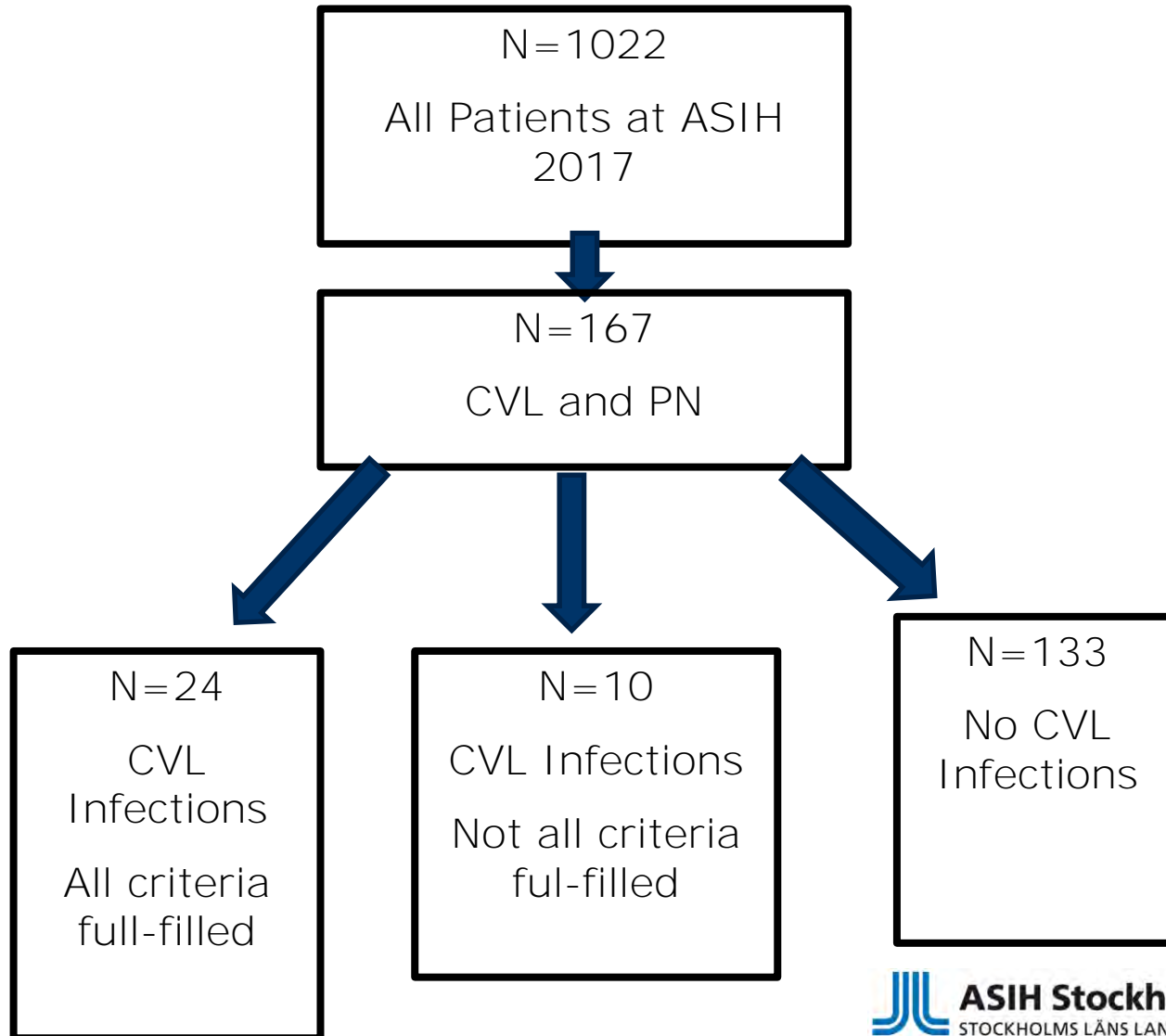


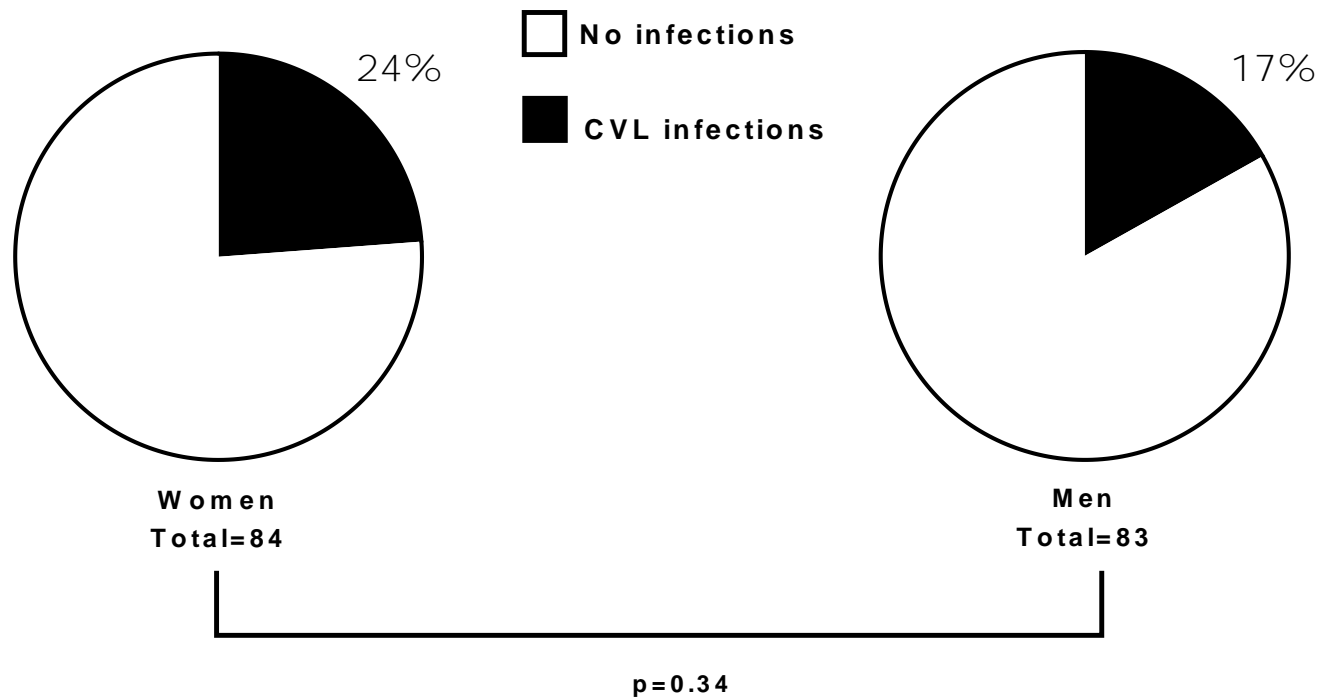
# Criteria for CRBSI

- Clinical signs of infection
- Detection of the same microorganism in a blood culture from a CVL and from a peripheral vein, where the blood culture from the CVL is positive at least two hours ahead of the blood culture from the peripheral vein
- Detection of the same microorganism in a blood culture from a peripheral vein and in a culture from the CVL insertion site or tip.
- No other obvious source of infection

## Description of the study population

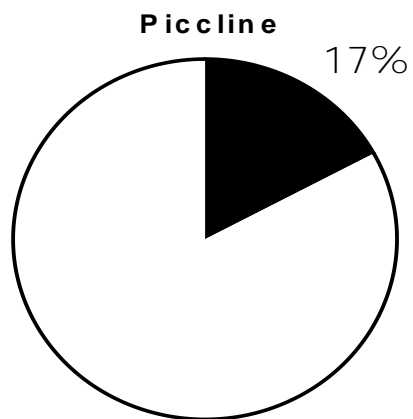
- 167 patients out of 1022 patients (16%) received parenteral nutrition at least once in 2017.
- 84 women, 83 men. Their mean age was 63 years.
- 87% has a cancer diagnosis.
- VAP 50%, PICC 45%, CVC 5%.
  - 50% received PN occasionally
  - 36% received PN 6-7 times/week > 4 weeks in a row
  - 13% 1-3 times/w > 4 weeks
  - 11% 4-5 times/w > 4 weeks



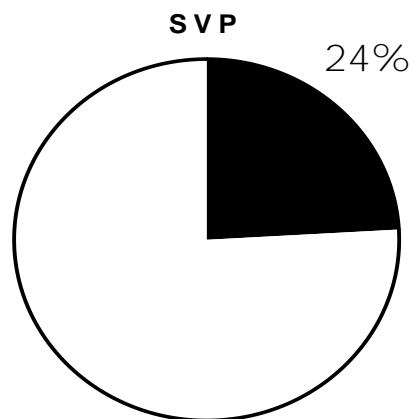


No infections

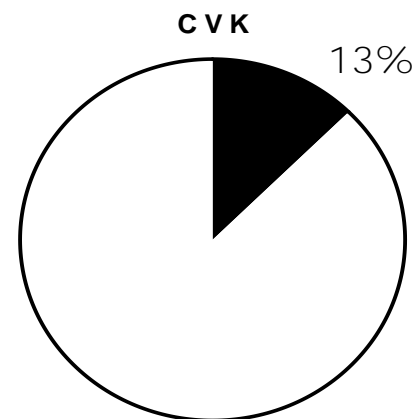
CVL infections



Total=76

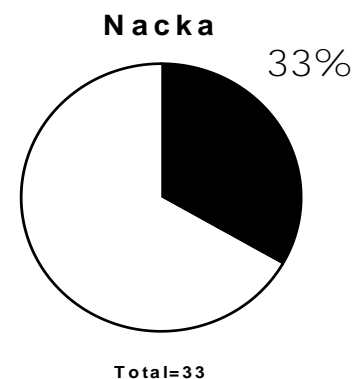
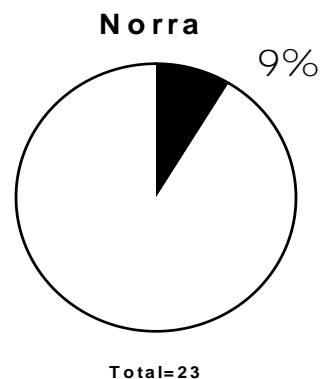
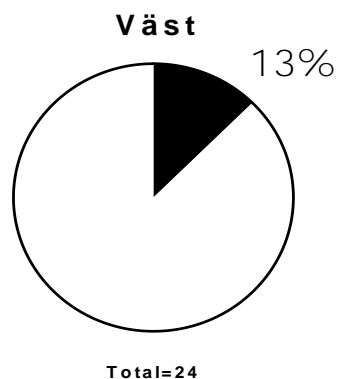
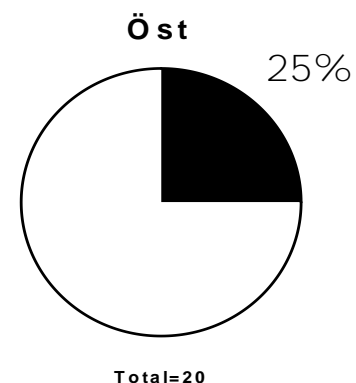
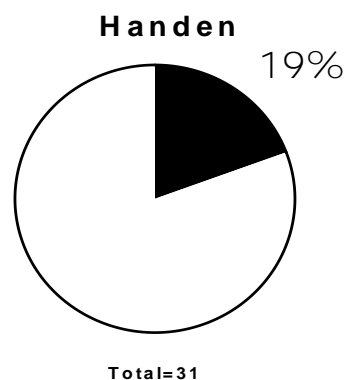
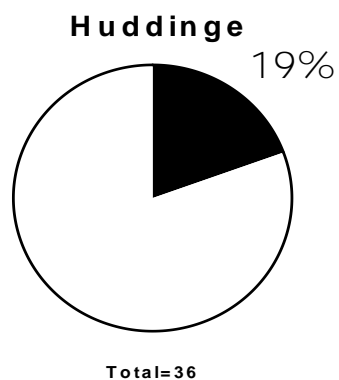


Total=83





Total=8

Chi<sup>2</sup>-test p=0.47

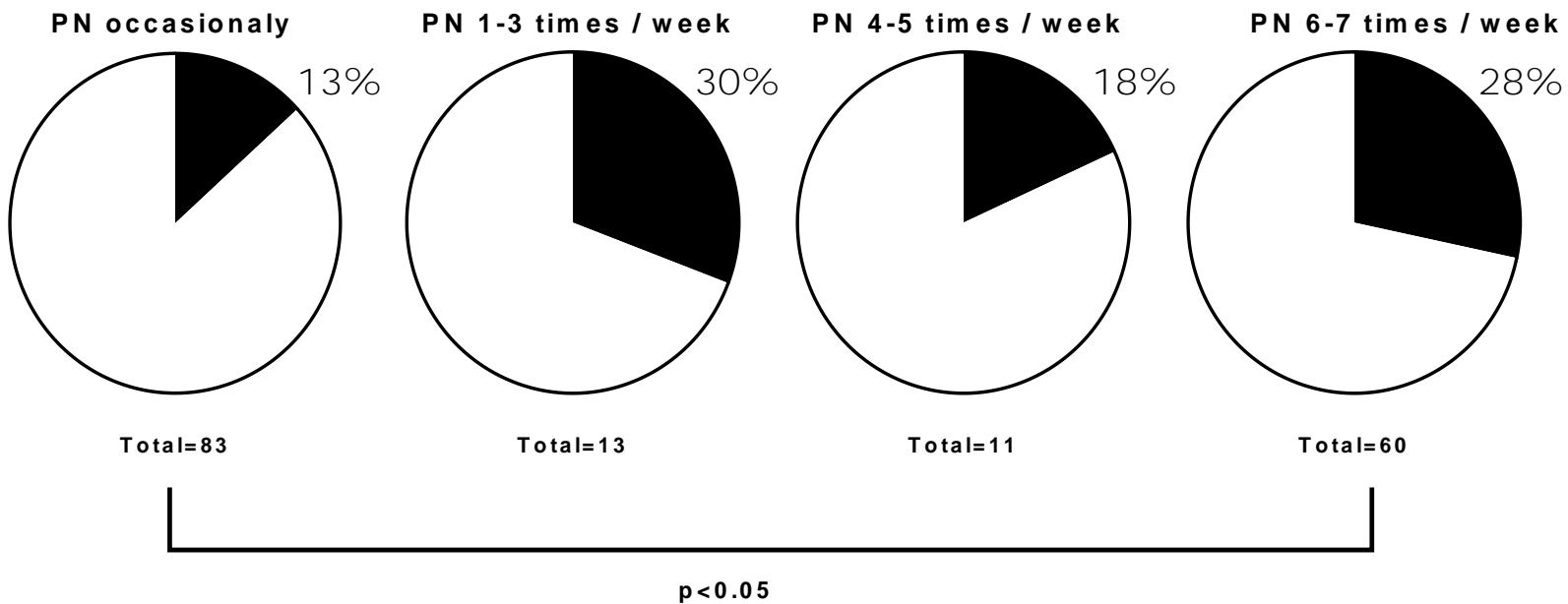


p=0.052

 No infections  
 CVL infections

 No infections

 CVL infections



## Conclusion

- Incidence of CRBSI was 20% in the patients receiving HPN
- Patients with a higher frequency of PN had a higher risk of CRBSI
- There was a difference in incidence of CRBSI between the teams
  - Because of patients handling the drip themselves?



## And now what?

- What is the incidence of CRBSI in patients with a CVL and no PN?
- How to prevent CRBSI?
  - Antibiotic locks in patients with high frequency of PN?
- Allow patients to handle their drip themselves?