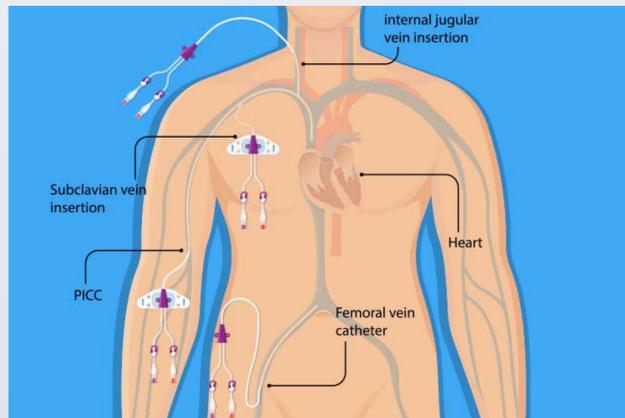


Central Line-Associated Bloodstream Infection Reduction: Using Evidence to Inform Practice

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Introduction

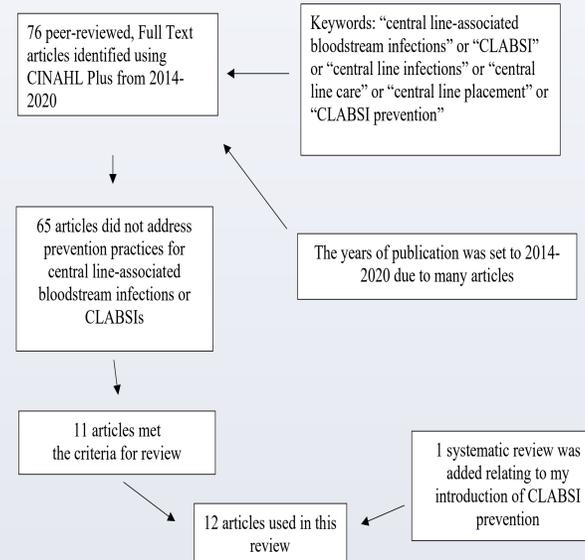
- Many patients that need long term infusions or need infusions that are damaging to peripheral veins are candidates for a central line.
- Central lines allow healthcare professionals to infuse high-risk medications such as pressors, chemotherapy, or other vesicant medications to a centrally located access site.
- It is the responsibility of the bedside nurse to prevent infections from occurring with central lines. Sometimes, these infections can lead to central line-associated bloodstream infections or CLABSIs.
- As a result of central line-associated bloodstream infections being so high-risk, we need to identify and utilize the best practices of prevention and to promote health.



Background

- CLABSIs are the most prominent and deadly nosocomial infection in the United States.
- According to the CDC, there were around 30,000 CLABSIs reported in 2018 with a mortality between 12-25%.
- CLABSIs cost hospitals millions of dollars each year to treat. It is estimated that a single case of CLABSI costs hospitals around \$70,696.
- Research has shown from several hospital systems that they have seen a significant decrease in the rate of infection with utilizing bundles of care for central lines.
- It is ultimately nurse's responsibility caring for the central line to prevent CLABSIs from occurring.
- Bundles of care give nurses a strict standard of care for central lines such as when central line dressings need to be changed, indication for a dressing change, and methods of how to cleanse central lines when doing a dressing change.
- By having bundles of care for central lines, nurses will have a standardized evidence-based protocol in order to prevent CLABSIs from occurring.
- Research has also shown that solely the fact that these protocols exist doesn't necessarily mean that every nurse knows of the protocol or are implementing these changes.
- Nursing education and compliance are crucial strategies in preventing these potentially fatal infections from occurring.
- The implementation of bundles of care for central lines and increased nursing compliance can ultimately lead to reduce infection rates for central lines and CLABSIs from occurring.

Materials and Methods



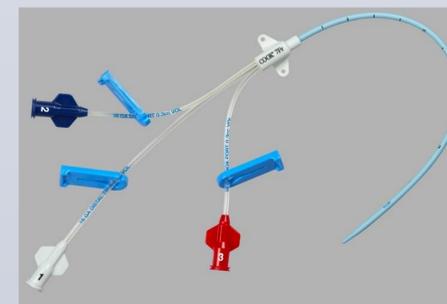
Results/Themes

- The implementation of bundles for central lines are not being consistently applied by those working at the bedside.
 - For hospitals that implemented policies for bundles of care for central lines only saw up to a 69% adherence to the policy.
 - There are a significant decrease in the amount of CLABSIs because of decreased compliance from staff.
 - Smaller hospitals and larger ICUs have greater compliance while ICUs that are in between had decreased compliance.
 - Many staff have reported being overworked or too busy to be able to correctly implement the policies and procedures.
 - Including nursing on the generating the policies regarding central line care has led to increased compliance and decreased number of CLABSIs.
 - There is a significant issue with the policy of a "PRN" dressing change.
 - 84% of the central lines were soiled and past due the changing date when left to change the dressing "PRN"
 - This ordering of a "PRN" dressing change specifically led to increased amount of soiled dressings when acuity is high.
 - Studies have shown that staff adherence to all practices and polices have reported the lowest rates of infection.

- Inconsistency with the implementation of bundles of care for central lines can be attributed to incomplete knowledge of what needs to be done.
 - There are four facilitators to prevention initiatives: education, leadership, data/technology, and consistent clinical processes.
 - A large portion of decreased staff compliance was due to being unsure what to do.
 - Many staff personnel are not using the correct equipment when caring for a central line due to insufficient education.
 - Factors responsible for lack of sustainability include high job turnover, new staff not being educated in the same way, and lack of dedicated unit leadership.
- The presence of written policies do not ensure policy compliance.
 - Written policies of practices in the hospital setting didn't align with greater compliance from staff members.
 - One study has shown that overall compliance with bundles and checklist is 88%.
 - There was only 65% staff compliance for implementing one aspect of the bundle in care for central lines.
 - Only 28% of staff were compliant with all prevention practices with the bundle.
 - Having a conversation with nursing staff in addition to the written polices have shown increased engagement in the polices.
 - Having interdisciplinary discussions regarding the patient need for a central line with nursing staff in addition to the written policy increased policy compliance.

Discussion

- Compliance to policies regarding bundles of care for central lines needs to be increased in order to prevent these deadly infections from occurring.
- Through proper leadership and education, it allows nurses to have the skills necessary to increase compliance and overall prevent CLABSIs from occurring.
- Written polices need to be discussed with bedside nursing staff in order to have a conversation regarding the impact that these policies will have on reducing infections.
- Using interdisciplinary discussions will help staff realize the overall importance of preventing these potentially fatal infections.
- Communication is the best tool to increase nursing compliance and equip nurses with the skills necessary to meet this goal of preventing central line infections from occurring.



Conclusions

- It is ultimately up to nursing staff to be able reduce infection rates.
- Hospitals can use many different strategies such as education and proper leadership to increase nursing compliance to these polices regarding infection prevention.
- Proper communication from leadership to bedside staff is ultimately the best practice in order to increase compliance and prevent these infections from occurring.
- In the future to prevent going back into old way of treating central lines, hospitals need to find new and additional ways of preventing these infections.

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*** Additional references available upon request

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