Reducing *C.difficile* Infections

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Assignment Due Date

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The selected topic for this project is “ The effectiveness of standardized antimicrobial stewardship programs(ASP) in reducing hospital-acquired *C. difficile* infections (CDI) among inpatient populations”. The main objective of ASP is to reduce antibiotic resistance of bacteria such as C. difficile by limiting the use of commonly prescribed antibiotics (Dyar et al., 2017).

**Problem Statement**

*C. difficile* causes diarrhea in patients.A patient with CDI secretes infectious spores that can adhere to most hospital surfaces like inpatient beds and hospital sinks and thrive for about 3 to 6 months (Moore, 2018) In most healthcare institutions in the USA and worldwide*, C. difficile* is the topmost cause of hospital-acquired infections, particularly among inpatients. For example, approximately 450,000 cases of CDI were reported in 2011 in the USA and about 172,000 cases in Europe (Balsells et al 2016). CDI also causes a huge economic burden to countries. For instance,in the US, the annual cost of managing CDI is about $3.2 billion (Moore, 2018). Controlling CDIs in inpatient facilities is problematic due to the absence of vaccines that can offer primary protection on *C.difficile* and the deficiency of ASPs (Balsells et al 2016).

**Need Statement**

 Due to the high resistance of C.difficile ribotypes to many commonly prescribed antibiotics, there is a need to design standard antimicrobial stewardship programs that can be implemented in all inpatient facilities in the US. Lawes et al. (2017) and Patton et al. (2018) indicate that the use of a standard ASP in hospitals a significantly reduces the number of CDIs.

**Thesis Statement**

The objective of this project is to evaluate the efficacy of a standardized ASP in reducing the CDI rates among inpatient populations.

References

Balsells, E., Filipescu, T., Kyaw, M. H., Wiuff, C., Campbell, H., & Nair, H. (2016). Infection prevention and control of Clostridium difficile: a global review of guidelines, strategies, and recommendations. *Journal of global health*, *6*(2).

Dyar, O. J., Huttner, B., Schouten, J., & Pulcini, C. (2017). What is antimicrobial stewardship?. *Clinical Microbiology and Infection*, *23*(11), 793-798.

Lawes, T., Lopez-Lozano, J. M., Nebot, C. A., Macartney, G., Subbarao-Sharma, R., Wares, K. D., ... & Gould, I. M. (2017). Effect of a national 4C antibiotic stewardship intervention on the clinical and molecular epidemiology of Clostridium difficile infections in a region of Scotland: a non-linear time-series analysis. *The Lancet Infectious Diseases*, *17*(2), 194-206.

Moore, S. C. (2018). Clostridium difficile: more challenging than ever. *Critical Care Nursing Clinics*, *30*(1), 41-53.

Patton, A., Davey, P., Harbarth, S., Nathwani, D., Sneddon, J., & Marwick, C. A. (2018). Impact of antimicrobial stewardship interventions on Clostridium difficile infection and clinical outcomes: segmented regression analyses. *Journal of Antimicrobial Chemotherapy*, *73*(2), 517-526.