

# Regents Park Combines Technology, Best Practices to Improve Infection Control

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## ABSTRACT

Regents Park of Boca Raton (RPBR) implemented the Novaerus technology on July of 2013. This plasma technology mitigates airborne infections by denaturing viruses, bacteria, mold, and allergens as well as harmful contaminants including MRSA, C-Diff, Norovirus and influenza. This study compares nosocomial (facility acquired) reinfection rates at RPBR before and after the implementation of Novaerus technology. Reinfection rates were reviewed over a 90-day period.

## INTRODUCTION

Healthcare-acquired infections (HAIs) represent a significant and growing threat. HAIs account for 4.5 infections for every 100 hospital admissions, and 1.8 million people per year acquire an infection during their hospital stays. Hospital patients with a positive clinical culture for methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant enterococci or *Clostridium difficile* are 40 percent likelier to be readmitted within a year than other patients, according to a study in the June 2012 issue of *Infection Control and Hospital Epidemiology*. About 20 percent of Medicare patients are readmitted within a month, costing \$17.4 billion annually, according to an April 2, 2009, study in *The New England Journal of Medicine*.

The Centers for Disease Control and Prevention (CDC) March 2009 report on the direct medical costs of HAIs estimates that \$35.7 to \$45 billion in 2007 dollars is added to the nation's annual healthcare costs to treat these infections. These estimates demonstrate the necessity of an effective HAI prevention program.

The challenge to maintaining that effectiveness is antimicrobial resistance (AMR), which refers to the resistance of a microorganism to an antimicrobial medicine to which it was previously sensitive. Resistant organisms (e.g., bacteria, viruses and some parasites) are able to withstand attack by antimicrobial medicines, such as antibiotics, antivirals, and antimalarials, so that standard treatments become ineffective and infections persist and may spread to others. More than 70 percent of bacteria that cause HAIs are resistant to at least one of the drugs most commonly used to treat them.

## METHODOLOGY

Regents Park of Boca Raton Florida (RPBR) is a 180-bed facility that provides short and long-term rehabilitation and skilled nursing services which implemented the Novaerus technology in July of 2013.

A twenty-four month review was performed on RPBR to evaluate the results that the CEO stated his facility had benefitted from. A Nurse Risk Manager Consultant visited the facility for two days to extract the facility information and to review the following data:

- **Admission, transfer, and discharge data for all residents,**
- **Monthly infection control records, reports, and surveillance,**
- **Individual resident infection control examination results (x-rays, cultures, etc.), and**
- **A map of the facility, which displays selected rooms where the Novaerus system was implemented.**

Within the twenty-four months, the period selected for review was six months of data subsequent to the implementation of Novaerus technology (August and September, 2013; November and December, 2013; January and February, 2014 [October omitted due to missing data]). This data was then compared to the same period of the corresponding/preceding years, prior to implementation of Novaerus technology. Comparison of like periods reduces the risk of skewed data related to seasonal variances that might occur with infection rates.

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The facility map exhibits that the Novaerus technology was implemented in all resident rooms for wings designated as "A," "B," "C," and "D." Additionally, the map indicates that the Novaerus technology was installed in the Physical and Occupational Therapy Rooms, Dining Rooms, Ice Cream Parlor, Beauty Parlor, MDS Office, TV Lounge, Activity Room, Soiled Utility Rooms, Medical Records as well as Administrators' offices. This study compares the number of residents in the aforementioned periods that developed recurring nosocomial infections over a 90-day period.

## RESULTS AND CONCLUSION

In the aforementioned six-month period prior to implementation of the Novaerus technology, the facility documented 62 occurrences of repeat nosocomial infections over a 90-day period. In contrast, the six-month period subsequent to implementation of the Novaerus technology documented 29 occurrences of repeat nosocomial infections over a 90-day period.

This indicates that the rate of repeat nosocomial infections over a 90-day period declined by 52.23%. Implementation of the Novaerus technology has significantly impacted the infection control and quality improvement efforts at RPBR. The attached graph illustrates the above conclusion.

Regents Park Boca Raton, C-Wing

**Key:**

- NV200, Portable Isolation
- NV800, Common Area
- NV400, Soiled Utility



## REGENTS PARK OF BOCA RATON REPEAT NOSOCOMIAL INFECTION RATES OVER A 90-DAY PERIOD

	Aug.'2012/2013	Sep.'2012/2013	Nov.'2012/2013	Dec.'2012/2013	Jan.'2013/2014	Feb.'2013/2014	Total
Without Novaerus	11	18	8	11	6	8	62
With Novaerus	4	6	9	2	3	5	29

