



Evaluation Study

The Effect on the Nosocomial Infection Rate by using Germ Pro's Persistent Action Plan

Rome Memorial Hospital

Rome Memorial Hospital is a not-for-profit community hospital that provides traditional hospital services including emergency, general medical/surgical, pediatric, obstetric, and intensive care. Because of our commitment to serve the unique needs of seniors, we also have two specialty units, acute-physical medicine & rehabilitation, senior behavioral health care, and an 80-bed Residential Health Care Facility. There are a total of 226 beds and about 800 employees.

At Rome Memorial Hospital, our first priority is our patients. We are committed to providing high-quality compassionate care. Our philosophy is reflected in the dedication of our highly trained staff and the investment we make in advanced technology.

Project Summary

Rome Memorial Hospital has completed a twelve-month evaluation of Germ Pro. The infection rates during the twelve months were compared to previous twelve months to determine if Germ Pro's Persistent Action Plan helps prevent nosocomial infections.

Phase 1 (8/2007-11/2007): During the first four months, Germ Pro's Surface Disinfectant was used in the Emergency Department, Medical/Surgical ICU, and Contact isolation rooms. It was applied after the normal cleaning, and then reapplied monthly. Patient rooms were treated upon becoming an isolation room and after a terminal clean. Patient rooms other than ICU and isolation rooms were not treated. Germ Pro's hand sanitizing lotion was not used.

Phase 2 (12/2007-3/2008): Germ Pro's Hand Sanitizing Lotion was used in the Emergency Department and Medical/Surgical ICU, in addition to the Phase 1 surface disinfectant protocol. Health Care Workers (HCWs) were instructed to apply the lotion after washing their hands at the beginning of their shift, and then reapply every 4 hours. This is done in addition to the HICPAC/SHEA hand hygiene guidelines.

Transition Month (4/2008): Phase 3 implementation was started mid-month, so it was not counted as phase 2 or phase 3.

Phase 3 (5/2008-7/2008): Germ Pro's Hand Sanitizing Lotion and Surface Sanitizing Lotion were both used throughout the entire hospital. Protocol of use was the same as prior phases.

Evaluation objective

The objective of the study is to determine if Germ Pro effectively reduces nosocomial infection rates, improves HCWs dry hands, and increases compliance to CDC hand Hygiene guidelines. Positive results should justify (by lower costs and saved lives) the continued use of these products and procedures in the entire hospital.

Statement of the Problem

Nosocomial infections have been estimated to kill at least 90,000 patients per year in the USA and cost the health care system over \$5 billion per year. The Center for Disease Control (CDC) has stated that most infections are spread by contaminated hands. In their Hand Hygiene Guidelines, the CDC requires frequent hand hygiene by HCWs. CDC also recognizes that compliance by HCWs to the guidelines is very poor.

Alcohol based hand sanitizer kills germs instantly, but is not persistent to continue killing bacteria between uses. Handwashing cleans the hands but does not destroy all of the bacteria present.

Some bacteria such as MRSA, VRE and C. Difficile are resistant to antibiotics and are difficult to treat. Therefore, it is important to stop the spread of these bacteria, as well as the more easily treated bacteria.

C. difficile spores can remain viable for 6 months and are not killed by most cleaning products.

Occupational Hand Disease (OHD) is a serious problem with HCWs due to frequent hand washing. Dried and cracked hands contribute to the poor compliance to the CDC hand Hygiene guidelines. OHD also increases absenteeism, which deteriorates the quality and cost of health care.

Germ Pro Product Claims

The Persistent Action Plan uses the combination of Germ Pro Hand Sanitizing Lotion and their Surface Disinfectant, both with persistence (long term killing power) to help prevent Hospital Acquired Infections (HAIs) by killing pathogens, such as MRSA, VRE, Clostridium difficile and Acinetobacter, persistently, before they can become infections.

The alcohol-free, antimicrobial, Hand Sanitizing Lotion forms a polymeric layer on the skin that is not water soluble, helping provide continued protection against the harsh effects of alcohol. It has a broad spectrum kill (99.9%) and only needs reapplying every 3-4 hours or after a hard scrub.

Hand hygiene is more effective when hospital surfaces are free of germs. Germ Pro’s persistent Surface Disinfectant was developed to be used in conjunction with Germ Pro’s Hand Sanitizing Lotion. Independent laboratory tests indicate that the surface disinfectant persistently kills pathogens up to 28 days. Kansas State University test results indicate that Germ Pro’s Surface Disinfectant kills Clostridium difficile and inactivates its Spores. It is EPA registered and is FDA 510(k) cleared as a medical device to disinfect non-critical medical devices.

Evaluation Results

The attached “Infection Data” sheet details the Nosocomial Infection Marker (NIM) per 1000 patient days for the months prior to the evaluation and then for each of the phases. This was monitored by MedMined software.

The average NIM rate for each phase was compared to the average NIM rate for the 12 months prior to Germ Pro use. Summarizing this data:

	<u>Base Data</u>	<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 3</u>
Ave. NIM/mo.	44.0	36.3	33.8	29.3
Ave. Pt. Day/mo.	4,677	4,387	4,466	4,299
Ave. NIM/1000 PD	9.40	8.27	7.56	6.82

Improvement compared to Base Data

Ave. NIMs/mo. Reduced	7.7	10.8	14.7
Percent fewer NIMs	17.5%	24.5%	33.4%
NIM/1000 PD improvement	12.1%	19.6%	27.4%

Since patient days were higher during the base data months, it is more accurate to measure performance based on the rate per 1,000 patient days.

Our HCWs were informally surveyed to evaluate if the lotion improved the condition of their hands, allowing better compliance to hand hygiene guidelines. The overall consensus was that the HCW’s were very positive.

Conclusions

A consistent downward trend in the NIMs in each of the phases is excellent. Infection rate improvement of 27.4% is outstanding. Preventing 14.7 infections per month allows 176 patients per year to avoid these serious health care complications. Germ Pro’s prevention of infections provides better health care for our community and saves significant costs for the patient and the hospital.

Germ Pro is well accepted by Health Care Workers. Germ Pro lotion is easy to use and it protects their hands, allowing them to comply better with Hand Hygiene Guidelines. They also have added protection against infections and illness. Healthy hands and fewer illnesses should result in less unplanned absenteeism. Anecdotally, one of Rome Memorial Hospital's PACU nurses who has suffered from eczema on her hands for years has seen a dramatic improvement in this condition since she began using the Germ Pro hand lotion. She has gone from having to wear bandages on her hands to the condition being barely noticeable. The nurse attributes this impressive improvement to the use of Germ Pro.

Recommendation

Germ Pro's Persistent Action Plan should continue to be used in the entire hospital. All hospital employees and visitors should apply the sanitizing lotion. The surface disinfectant should be used in all hospital rooms.

LeAnna Grace, RN, BSN, CIC
Director, Infection Prevention
Rome Memorial Hospital
1500 N. James Street
Rome, NY 13440

Attachments

1. Infection Data report
2. Germ Pro Hand Sanitizer instructions.
3. Germ Pro Surface Disinfectant instructions

**Rome Memorial Hospital
Germ Pro Study
C. difficile infections**

12 Months prior to Germ Pro												
	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07
C. diff	6	2	1	1	0	0	5	4	4	2	2	1
Pt Day	4708	4462	4879	4505	4847	5025	4607	4752	4615	4826	4482	4662
Rate**	1.3	0.4	0.2	0.2	0.0	0.0	1.1	0.8	0.9	0.4	0.4	0.2
0.50 is the infection rate per 1000 patient days for the 12 months prior to Germ Pro												

Germ Pro Study Phases
Phase 1: Germ Pro Surface Disinfectant (no Hand Sanitizer) used in Emergency and ICU only
Phase 2: Germ Pro Hand Sanitizer and Surface Disinfectant used in Emergency and ICU only
Transition: Started implementing Phase 3 in late April
Phase 3: Germ Pro Hand Sanitizer and Surface Disinfectant used in entire hospital

	Phase 1				Phase 2				Transition	Phase 3		
	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	8-Jul
C. diff	1	2	2	4	3	5	1	1	0	2	0	1
Pt Day	4403	4230	4546	4368	4504	4673	4270	4419	4411	4487	4044	4367
Rate**	0.2	0.5	0.4	0.9	0.7	1.1	0.2	0.2	0.0	0.4	0.0	0.2
	Phase 1 (Aug.-Nov) Totals				Phase 2 (Dec.-Mar.) Totals					Phase 3 (May-July) Totals		
	C. difficile 9				C. difficile 10					C. difficile 3		
	Patient Days 17547				Patient Days 17866					Patient Days 12,898		
	Ave. Rate ** 0.51				Ave. Rate** 0.56					Ave. Rate 0.23		
	-2.00%				-12.00%					54.00%		
	C. diff rate increased 2% compared to 12 months prior to Germ Pro ***				C. diff rate increased 12% compared to 12 months prior to Germ Pro					C. diff rate decreased compared to 12 mos. prior to Germ Pro		

* C. diff infections were tracked by MedMined software

** Rate is C. difficile infections per 100 patient days

*** Phase 1 infection rate of 0.51 is 2% higher than the 0.50 rate prior to Germ Pro

Cassie Evans Winter
Assistant Vice President
Communications/Marketing
Rome Memorial Hospital
1617 N. James St. Suite 950
Rome, NY 13440
Phone: 315-337-5309
FAX: 315-339-2917

Press Release

For Immediate Release

Photo attached with caption

Germ Pro helps protect patients from infections at Rome Memorial Hospital

ROME, NY (November, 13, 2008) - To help prevent the spread of germs and protect its patients from infections, Rome Memorial Hospital is using two new products that kill germs on hands and surfaces between cleanings.

According to Infection Prevention Director LeAnna Grace, the hospital conducted a 12-month research study of Germ Pro's new surface disinfectant and hand sanitizing lotion to evaluate how well they work and was excited by the results.

"At Rome Memorial Hospital, we have an excellent record of protecting our patients from getting an infection during their hospital stay because we follow the infection control guidelines developed by the Centers for Disease Control and Prevention (CDC)," Grace said. "But, even one healthcare associated infection is too many. That's why we're always looking for better ways to kill germs."

While testing the new technology of Germ Pro's Persistent Action Plan, Rome Memorial Hospital reduced Healthcare Associated Infections (HAIs) by 27.4%, the study concluded. "Use of Germ Pro in combination with our ongoing infection prevention strategies, reduced two of the more dangerous infections – methicillin-resistant Staphylococcus aureus (MRSA) and Clostridium difficile (C. difficile) by more than 50%," Grace noted.

"We haven't had a central line infection in a year. We haven't had a post-operative pneumonia in more than a year. In the final phase of the study, we implemented GermPro house-wide in May and haven't had a single HAI-MRSA case since," Grace said.

The CDC's hand hygiene guidelines require caregivers to wash their hands or use alcohol-based sanitizers before and after touching any patient. Hospitals also use effective disinfectants to kill germs on surfaces. These products kill germs at the time of use, but don't have any persistent killing power between cleanings. With traditional products, germs can easily be reintroduced to clean surfaces by visitors, patients and staff.

"It's just like at home. You finish cleaning the kitchen and no sooner turn around and there are fingerprints on the refrigerator," Grace said. "The beauty of the Germ Pro products is they keep working between cleanings so it's less likely for germs to multiply and spread."

According to Germ Pro President Wayne Albright, Germ Pro's Hand Sanitizing Lotion and Surface Disinfectant were proven by laboratory testing as required by the Food and Drug Administration and the Environmental Protection Agency.

"We focused our efforts on developing a 'Persistent Action Plan' to give healthcare providers an additional tool to

protect patients from the two million healthcare associated infections that occur annually in the United States,” he said. “If you persistently kill the germs on your hands and the surfaces that your hands touch, you will not easily be able to pick up or transmit infections.”

“MRSA and C. difficile have developed a resistance to some antibiotics, and multi-drug resistant germs are more common and a serious concern at all hospitals,” Albright said. “While HAIs drive up the cost of healthcare by an estimated \$30 billion, the cost to patients and their families is incalculable.”

“RMH was the first hospital to add this new technology to their infection prevention program. Its management was very proactive in their desire to improve patient safety by preventing infections,” Albright said.

He praised Grace and Building Services Assistant Director Fred White for their diligence in implementing Germ Pro and commended the doctors, nurses, and other hospital workers for their support in this effort to improve patient safety.

“Results from this study were outstanding and have convinced other major hospitals to follow RMH’s lead. RMH should be commended for their role in this very significant improvement in hospital care,” he said. “Overall infections reduction of 27.4% is excellent, and more than 50% improvement in MRSA and C. difficile is outstanding. It greatly improves patient safety and significantly reduces healthcare cost.”

How Germ Pro Works

Germ Pro’s Hand Sanitizing Lotion is used in addition to normal hand hygiene guidelines. Healthcare workers apply the alcohol-free lotion at the beginning of the day and again every three to four hours. The lotion kills germs persistently for four to six hours and does not easily wash off. As an added benefit, it protects healthcare workers’ hands from alcohol-based sanitizers that can cause drying and cracking.

Germ Pro’s Surface Disinfectant is applied monthly after normal cleaning and disinfecting and reapplied in patient rooms after each patient is discharged. Based upon laboratory tests, it kills germs persistently for up to 28 days. The disinfectant is only applied to common “touch points” such as doors, handles, countertops, telephone, remotes, bedrails, bathroom surfaces, wheelchairs, gurneys, elevator buttons and computer keyboards.

For more information about Germ Pro, visit www.germproproducts.com or send an e-mail to GermPro@yahoo.com.

GERM PRO KEEPS KILLING GERMS BETWEEN CLEANINGS – Glaisma Valentin, a cleaner at Rome Memorial Hospital, Rome, NY, uses Germ Pro surface disinfectant to protect patients from healthcare acquired infections. During a 12-month study of the surface disinfectant and Germ Pro’s hand-sanitizing lotion, the hospital reduced its overall infection rate and hasn’t had a case of healthcare acquire MRSA since implementing both products house-wide in May.

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