

Evaluation of Discharge Cleaning Turnaround Times

USE OF CURRENT CHEMICALS (VIREX II 256 & CLOROX BLEACH GERMICIDAL) AS COMPARED TO R-WATER DISINFECTANT (TK60 ONE-STEP DISINFECTANT)

OVERVIEW

The purpose of this evaluation was to compare the difference in patient room turn times when current products used for disinfection (Virex 256 and Bleach Germicidal) and mopping (Stride) are replaced with TK60 One-Step Disinfectant (See Figure 1). To assess the differences in patient room turn times following patient discharge, three members of the Environmental Services team were selected to be timed while performing Regular Discharge and *C. diff* Discharge procedures.

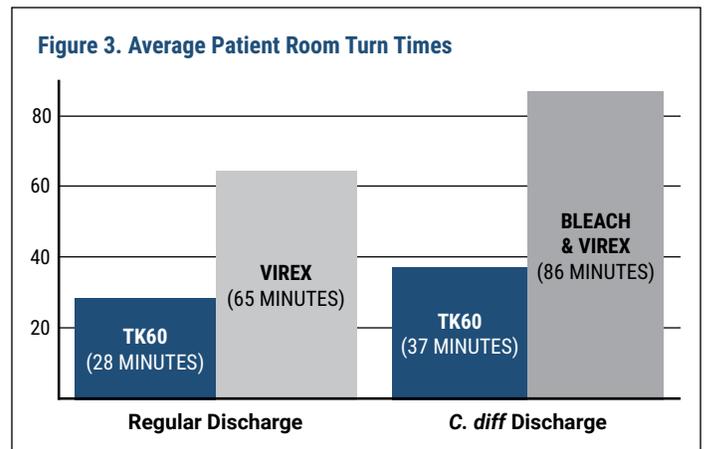
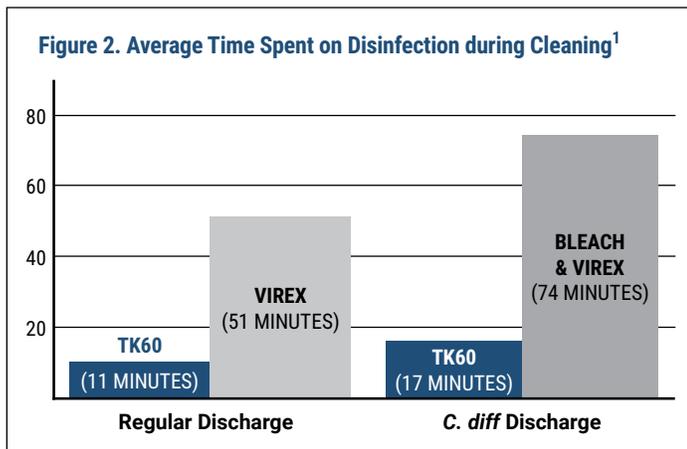
Preliminary data gathered from the reporting software (Epic Systems), used by ██████████ Health System, indicated that Environmental Services team members spend approximately 30 minutes to turn a patient room following discharge. This is for both Regular and *C. diff* discharges. However, after reviewing the data collected, it is clear that the approximately 30 minute average time currently spent cleaning rooms using Virex or Bleach and Virex following discharge is insufficient to ensure proper disinfection. When complying with the 10 minute contact time, the minimum time spent on applying Virex to surfaces was 50 minutes (See Figure 4.) Due to Virex drying after approximately three to five minutes, multiple applications were needed to ensure proper disinfection.

Figure 1. Comparison of Disinfecting Products

	TK60	Virex	Bleach
Healthcare-grade disinfectant	1 min.	10 mins.	1 min.
<i>C. diff</i> Kill	1 min.	No Claim	3 mins.
TB Kill	1 min.	No Claim	No Claim
Approved Application Methods	Spray-use	Use-Dilution	Spray-use
Safe for Food Contact Surfaces	Yes	No	No

RESULTS

- Using TK60 during Regular Discharge Cleaning resulted in an average 40 minute decrease in the amount of time spent disinfecting surfaces and an average 37 minute decrease in total patient room turn time
- Using TK60 during *C. diff* Discharge Cleaning resulted in an average 57 minute decrease in the amount of time spent disinfecting surfaces and an average 49 minute decrease in total patient room turn time



¹ *C. diff* Discharge procedures include the disinfection of walls in the patient room, while Regular Discharge cleaning procedures do not include disinfection of walls.

For the mopping portion of the cleaning processes, TK60 was used in lieu of Stride. The average time required to complete the mopping of the room and restroom was approximately four minutes when using Stride, and six minutes when using TK60. While there is an average time increase of two minutes when using TK60 instead of Stride, additional considerations can and should be made for the following:

- Even with the two minute increase in time spent mopping when using TK60, there is an average 43 minute decrease in overall time spent on cleaning processes
- The use of TK60 for mopping provides disinfection of floors, whereas Stride is not a disinfectant

Figure 4. Chart of Timing Results for EVS Members Two and Three

	EVS Member Two				EVS Member Three			
	Regular Discharge		C. diff Discharge		Regular Discharge		C. diff Discharge	
	TK60	Virex	TK60	Bleach & Virex	TK60	Virex	TK60	Bleach & Virex
OVERALL CLEANING ²	28	67	32	95	27	63	41	77
Disinfection	8	50	16	80	13	52	17	67
Mopping	5	5	5	5	6	3	6	3

² Other tasks are performed during discharge procedure which contribute to the "Overall Cleaning" time, but are not affected by the changes to products used for cleaning and disinfection. These tasks include, removing trash and linens, replenishing paper products, adding sani-strips to commodes, replacing linens and making the bed, and replenishing supplies from the cleaning cart as needed.

PROCESS NOTES

It should be noted that the three EVS team members each had a different method for the application of Virex and Bleach products. After reviewing the approved application methods for Virex and Bleach it became apparent that the bleach product was being applied incorrectly by two of the EVS team members in all parts of the cleaning procedure, and one EVS team member applied the product incorrectly when disinfecting walls.

Figure 5. Overview of Disinfectant Application by EVS Team Member

	Approved Application Method	EVS Member One	EVS Member Two	EVS Member Three
Virex	Use-dilution Product can be applied via cloth, or spray, pull-top or flip-top bottle.	Applied Product Correctly Wipes surfaces with wrung out microfiber cloth.	Applied Product Correctly Wrings out soaked microfiber cloth onto surfaces.	Applied Product Correctly Wipes surfaces with wrung out microfiber cloth.
Bleach	Spray-use Product must be applied directly to surface by spray, pull-top, or flip-top bottle.	Product Not Applied Correctly Wets microfiber cloth with pull-top bottle containing product. Wets microfiber mop head with pull-top bottle containing product to disinfect walls.	Product Not Applied Correctly Wets microfiber cloth with pull-top bottle containing product. Wets microfiber mop head with pull-top bottle containing product to disinfect walls.	Product Not Applied Correctly Pours product from pull-top bottle onto surfaces. Wets microfiber mop head with pull-top bottle containing product to disinfect walls.

During the process of conducting these timing tests, EVS team members were instructed to use the cleaning and disinfecting procedure they normally would for each discharge type. After "EVS Member One" performed the usual cleaning procedures, it became apparent that current procedures did not take into account the need to rewet surfaces as Virex dries before the 10 minute contact time can be achieved. When performing the procedure to ensure surfaces are wet for the entire 10 minute contact time, surfaces needed to be rewet two to three times.

This finding is clearly related to the discrepancy between the average time reported in the data from Epic (estimated 30 minutes spent on each discharge) and the time results of performing the cleaning procedures in compliance with Virex's 10 minute contact time and rewetting requirement.

When discussing normal procedure with the other two EVS team members, both members acknowledged they were unaware of the 10 minute contact time for Virex and did not rewet surfaces to ensure proper disinfection during cleaning procedures. To accurately evaluate the patient room turn times when using Virex and Bleach in this evaluation, EVS Members Two and Three were instructed to continue to rewet surfaces as they dried, working continuously around the room to ensure all surfaces remained wet for the full contact time.

Figure 6. Timing for EVS Member One to Complete Regular Discharge Cleaning Procedure as Normal

	Using TK60	Using Virex ³
OVERALL CLEANING	21	21
Disinfection	9	9
Mopping	4	5

³ Virex did not remain wet on surfaces for the 10 minute contact time and was not reapplied in this procedure.

CONCLUSION

If the EVS staff is re-trained to use Virex and Bleach products properly – complying with contact times – patient room turn times will increase accordingly and patient flow will be negatively impacted.

When using Virex or, in the case of *C. diff* discharges, Bleach and Virex:

- The fastest turn time recorded in this evaluation was 63 minutes to perform a “Regular Discharge Cleaning” (See Figure 4)
- The average patient room turn time for a Regular Discharge was 65 minutes (See Figure 3)
- The average patient room turn time for a *C. diff* Discharge was 86 minutes (See Figure 3)

With a goal of keeping room discharge cleaning procedures within the average 30 minute turn time for patient rooms following discharge, the following considerations should be made:

- It is imperative that EVS team members use a product with a shortened contact time. The 10 minute contact time of Virex 256 does not allow team members to properly disinfect surfaces within the current patient room turn time of approximately 30 minutes
 - By using such a product, administrators would be assured that EVS team members are able to disinfect surfaces properly
- EVS procedures would be simplified and patient room turn times further reduced by using one product to disinfect against multiple pathogens instead of using two or more products for the same surfaces
 - Using one such product would standardize protocols for EVS team members, and reduce confusion during and after training