

Validation trial: Psychiatric institution 'Münzingen'

Validation Test Procedures

In order to validate the microbiological effect of Chrisal's probiotic PIP Healthcare cleaning products, a test covering seven (7) weeks of cleaning with the Chrisal products was performed in the women's locker room of the Münsingen Psychiatric Institution. In order to determine the microbiological benefits of PIP Healthcare cleaning, samples for cultures were taken in the facilities before the start of the use of Chrisal for cleaning and then seven (7) weeks after the start of the cleaning period. During this time period, cleaning with the PIP Healthcare products was done three (3) times per week.

The following typed of microbiological samples were taken:

1. Total count: to provide a general picture of all the bacteria which are present in the area.
2. Enterobacteriaceae: as an indication of the level of hygiene. The more Enterobacteriaceae that are present in the facilities, the lower the level of hygiene.
3. Staphylococci: as an indication for the level of pathogens (i.e. bad bacteria). Again, the more Staphylococci that are present, the higher the infection risk.

Samples were taken using swabs from (a) the floor to the left of the lockers; (b) the floor to the right of the lockers; (c) the sink and (d) the toilet.

Results

Table-1: Microbiological Test Results Taken Before the Start of PIP Healthcare Cleaning:

Sample	Total Count	Enterobacteriaceae	Staphylococcen
Floor-Left Side:	High	Medium	Absent
Floor-Right Side:	High	Low	Low
Sink Samples:	Medium	Medium	Absent
Toilet Samples:	Low	Absent	Low

Table-2: Microbiological Test Results After 7 Weeks of Using Regular PIP Healthcare Cleaning.

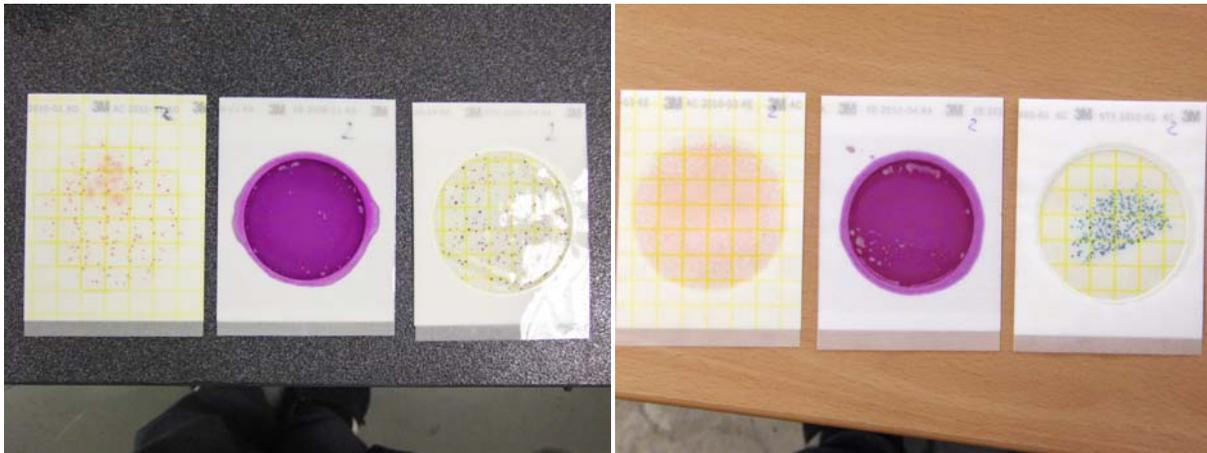
Sample	Total Count	Enterobacteriaceae	Staphylococcen
Floor left	TNTC	Absent	Absent
Floor right	TNTC	Absent	Absent
Sink	TNTC	Absent	Absent
Toilet	TNTC	Absent	Absent

*TNTC: Too numerous to count

Below are two (2) of the photographs that demonstrate the results. The first picture shows some of the samples taken before the start of the Chrisal cleaning when regular products are use. The second picture shows some of the samples taken after 7 weeks of PIP Healthcare cleaning.

On each picture you can see 3 different samples:

1. The left sample represents total count: each red dot represents a bacterium. On the first picture you can still see singles dots; on the right, everything has turned red because of the presence of our probiotic bacteria. This indicates that cleaning has been done very well.
2. The middle sample represents Enterobacteriaceae: each dot represents a bacterium of the Enterobacteriaceae group. Overall, not many Enterobacteriaceae were present during the trials.
3. The right sample is for Staphylococcus (MRSA): each Red Dot is positive for Staphylococcus. Black and green dots are negative. Only on the left picture can Red Dots can be seen.



Conclusion

After regular cleaning with Chrisal PIP Probiotics, we can see a significant improvement of hygiene and overall microbiology.

- a) Before PIP cleaning a variable microbial community is present on the surfaces, with a mixture of beneficial (good) and pathogenic (bad) bacteria.
- b) After Chrisal PIP cleaning we are not able to measure any more pathogenic bacteria, indicating that a stable, healthy microbial community has been established. This will result in a strong improvement of hygiene and a lower risk of infections, as well as reduced odors.

Besides the microbiological aspects addressed in this report, there is also the significant factor of the environment friendly nature of the products, their excellent cleaning and odor removal abilities and that they are safe to work with, which make the Chrisal PIP Healthcare products a profitable and sustainable acquisition to the healthcare institution.