

Hello, We are Physiclean

August 2024



**COORDINATED
CARE -
OPPORTUNITIES IN
POLAND**

ISRAEL | ECONOMIC AND TRADE
MISSION TO POLAND

HP | **PFSZ**
Polska Federacja Szpitali

Coordinated care - opportunities on the Polish market

Date & Time Aug 19, 2024 12:00 in Jerusalem



Why are we doing this?

2019	2050	
10 Trillion \$	100 Trillion \$	HAI Economic Damage
1,270,000	10,000,000	HAI Death
35,000,000	350,000,000	HAI Infected

70% of all the HAI can be Prevented.

Only 4% of the countries and 15% hospitals standing in the minimum standard of the IPC of the World Health Organization.



Our team



Zion Gabay

Business development
manager



Nir Nahum

CTO



Evyatar Gabay

CEO



Oded Salomon

Marketing & Customer
relations Manager



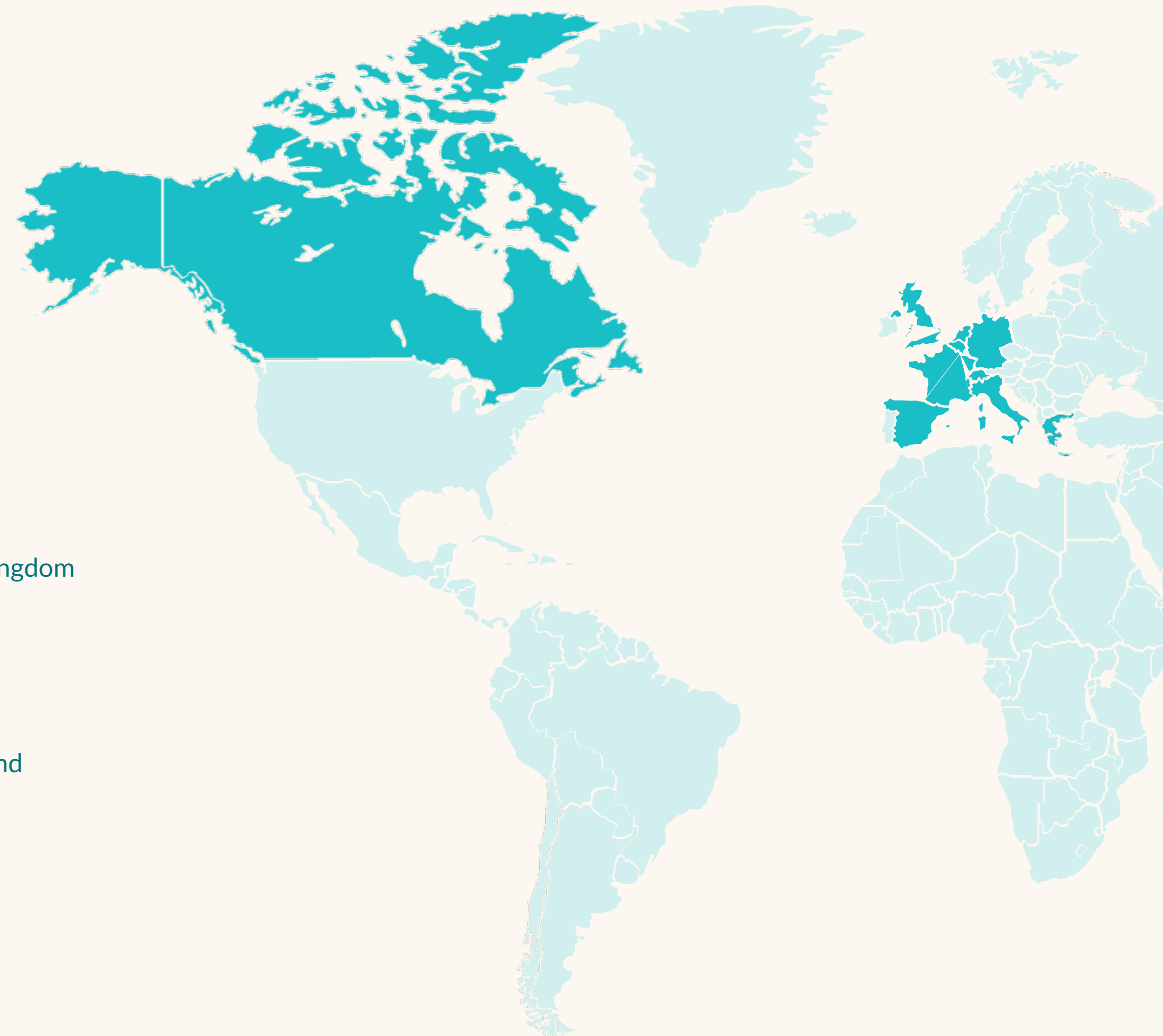
Oleg Goldin

Global project manager

Healthcare-associated infections is serious

Out of every 100 patients in acute-care hospitals, **7 patients** in high-income countries and **15 patients** in low- and middle-income countries

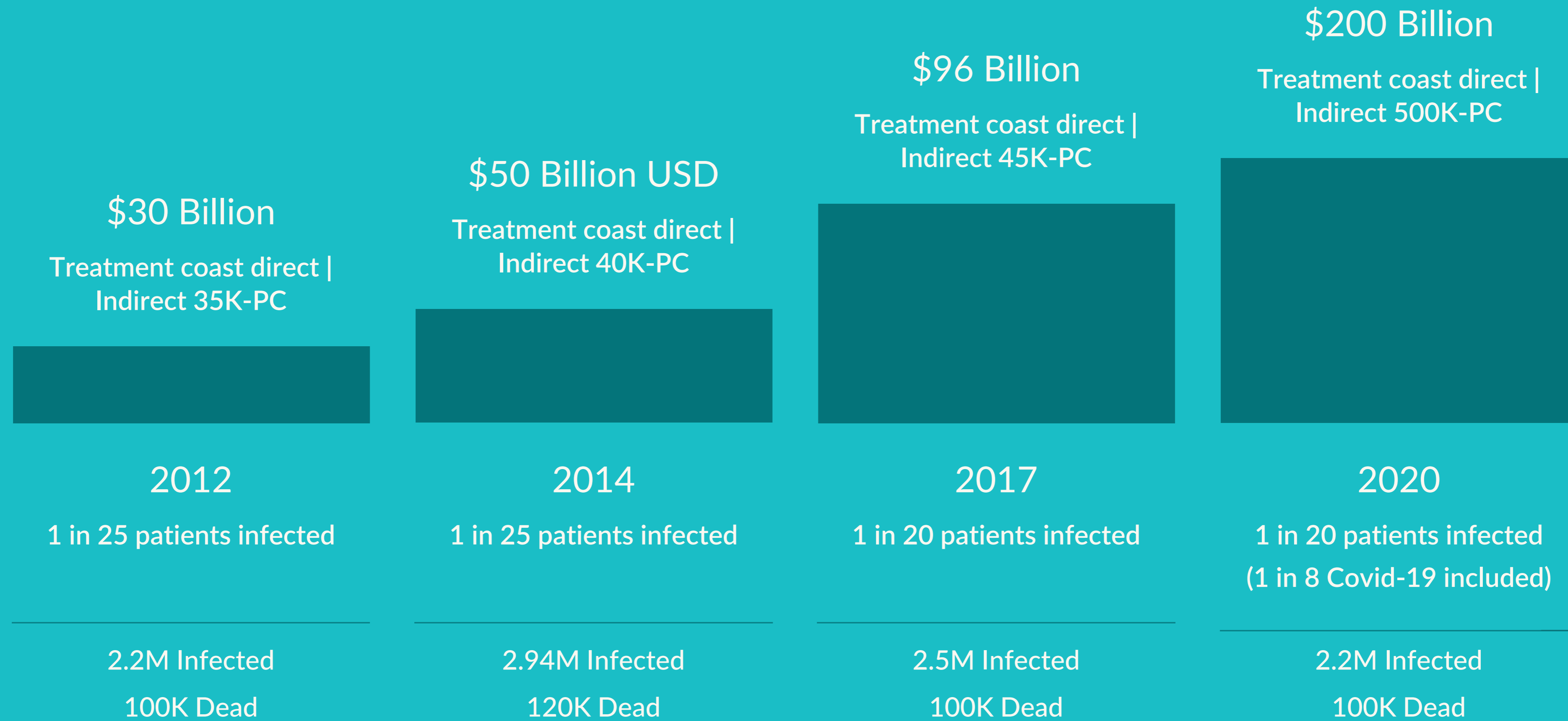
World health organization HAI fact sheet, 2022



Canada 11.6% 220K 8K	USA 4.5% 2.8M 100K	Norway 5.1% 50K	Finland 9.1% 100K 4K	Germany 3.6% 500K 15K	United Kingdom 9% 653K 22.8K
Belgium 6.9% 125K 3.4K	France 4.4% 750K 9K	Italy 6.7% 641K 29.3K	Spain 8.1% 376K 4.5K	Greece 7.9% 121K 3K	Switzerland 8.8% 70K 2K

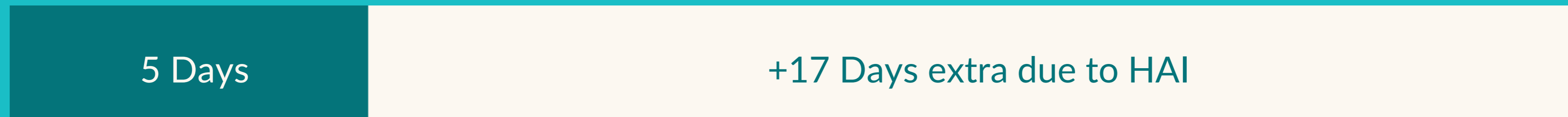
Infection | Death

USA market stats

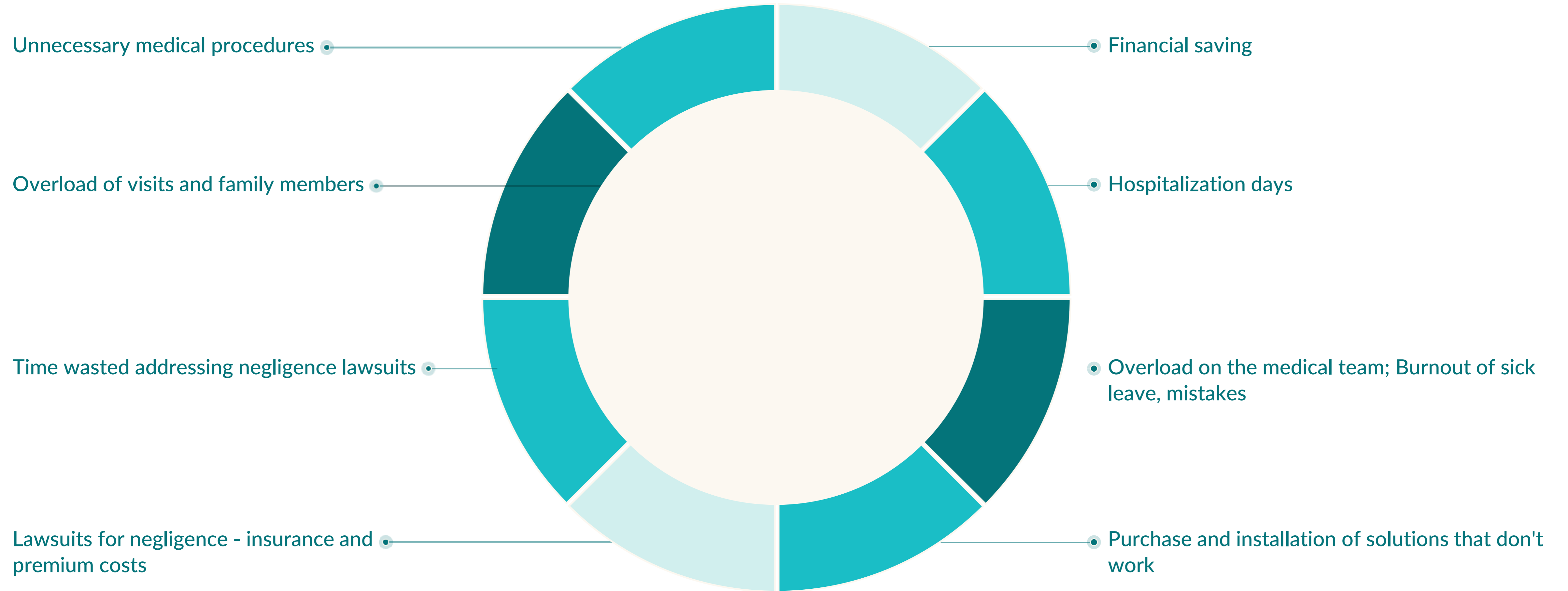


If you are admitted to a hospital, you have a 7%-15% chance of infected with HAI

ICU patient with HAI have less than 50% survival .



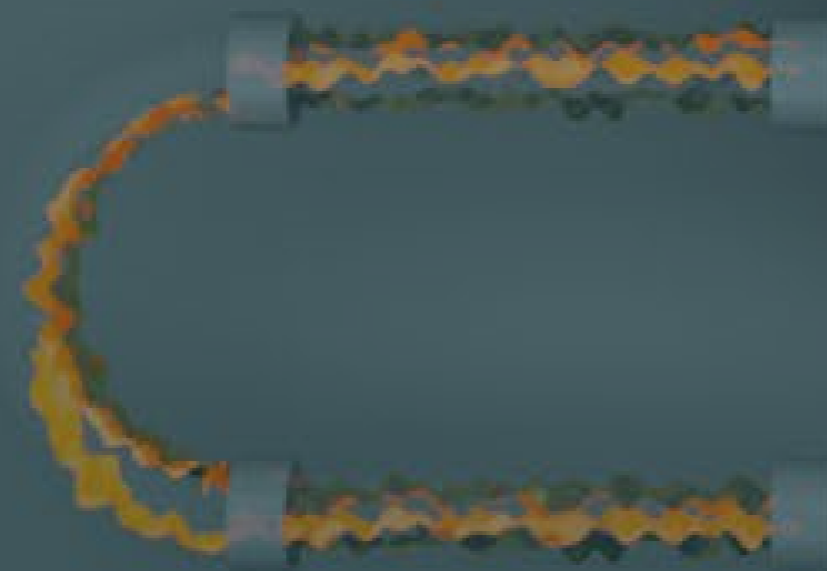
Financial damage



You just think it stops here

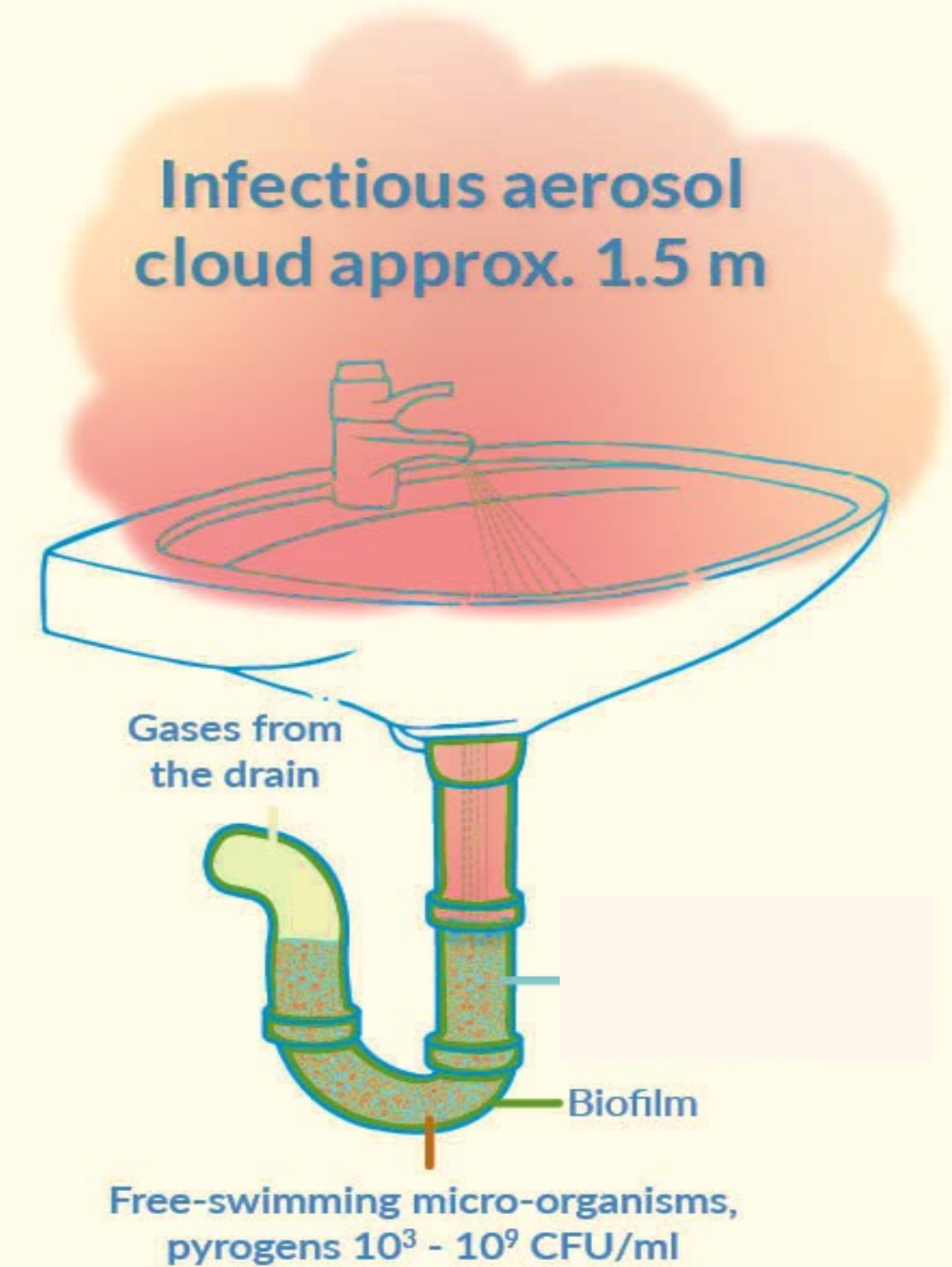
Biofilm - antibiotic resistant bacteria

- Enterococcus
- Enterobacter
- Staphylococcus
- Acinetobacter baumannii
- Klebsiella pneumonia
- Pseudomonas aeruginosa

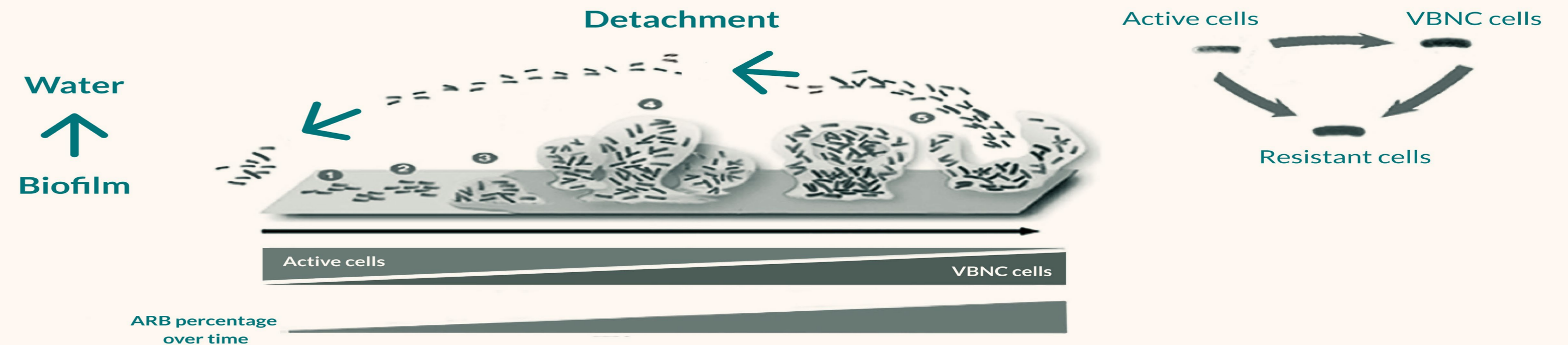
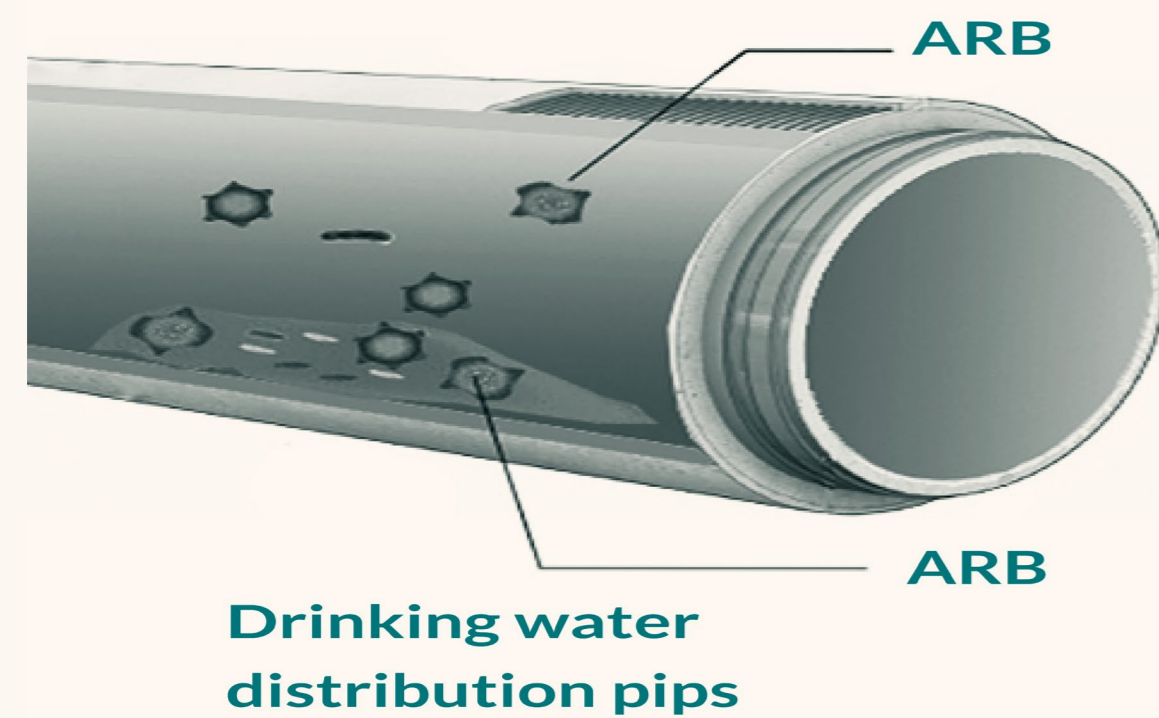
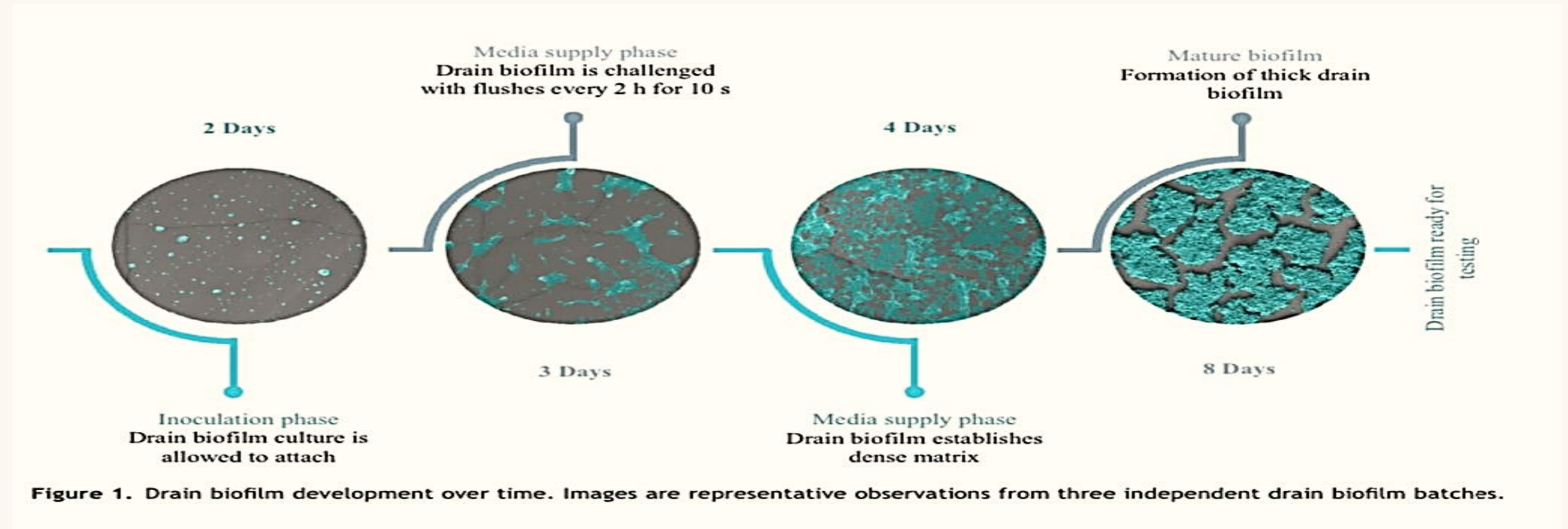


The problem: The sink use as a source of nosocomial infections

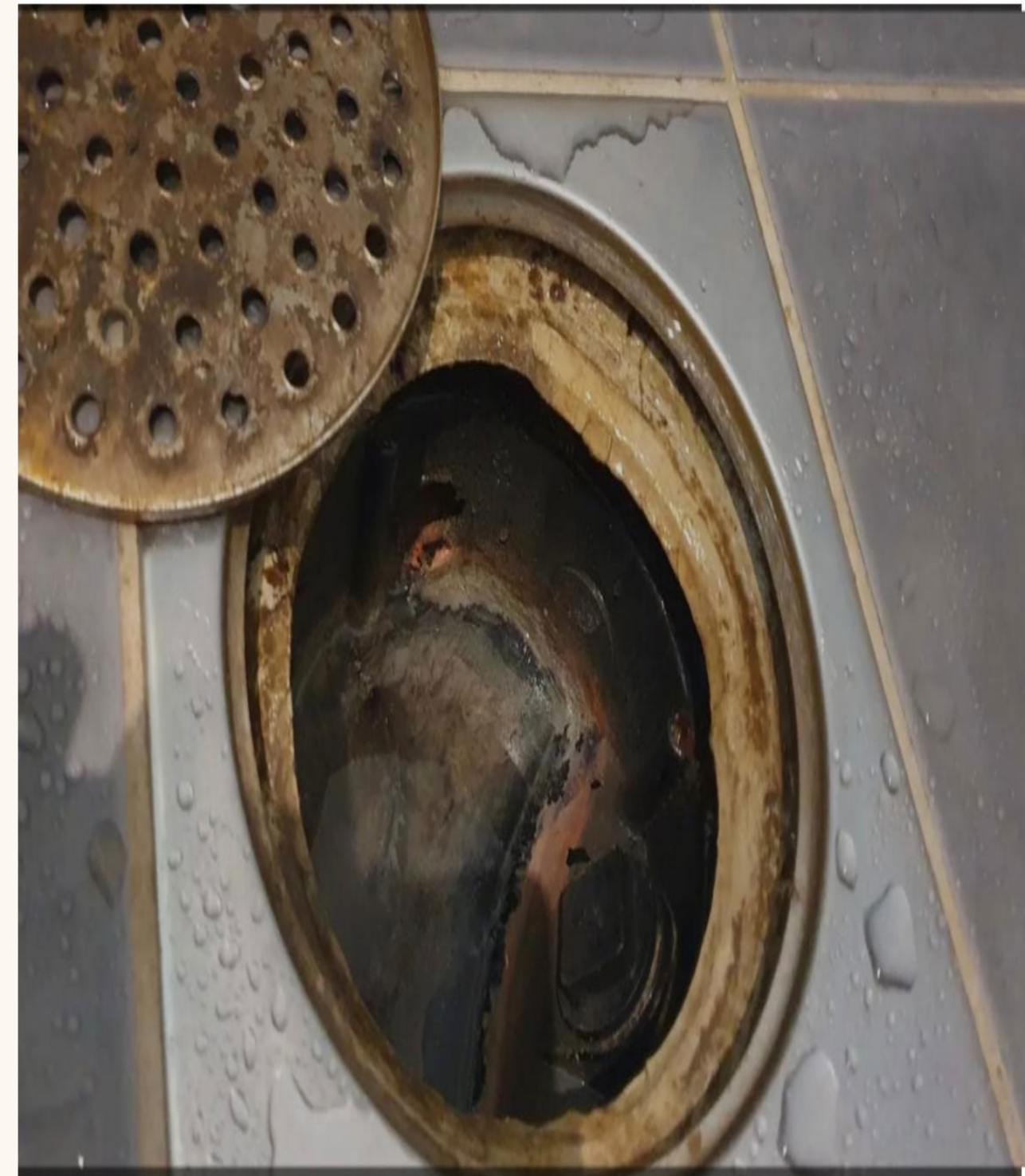
Left sinks uncleaned for two months at the medical center



Relationship Between Biofilm formation and Antimicrobial resistance (AMR)



The biofilm is a big problem !



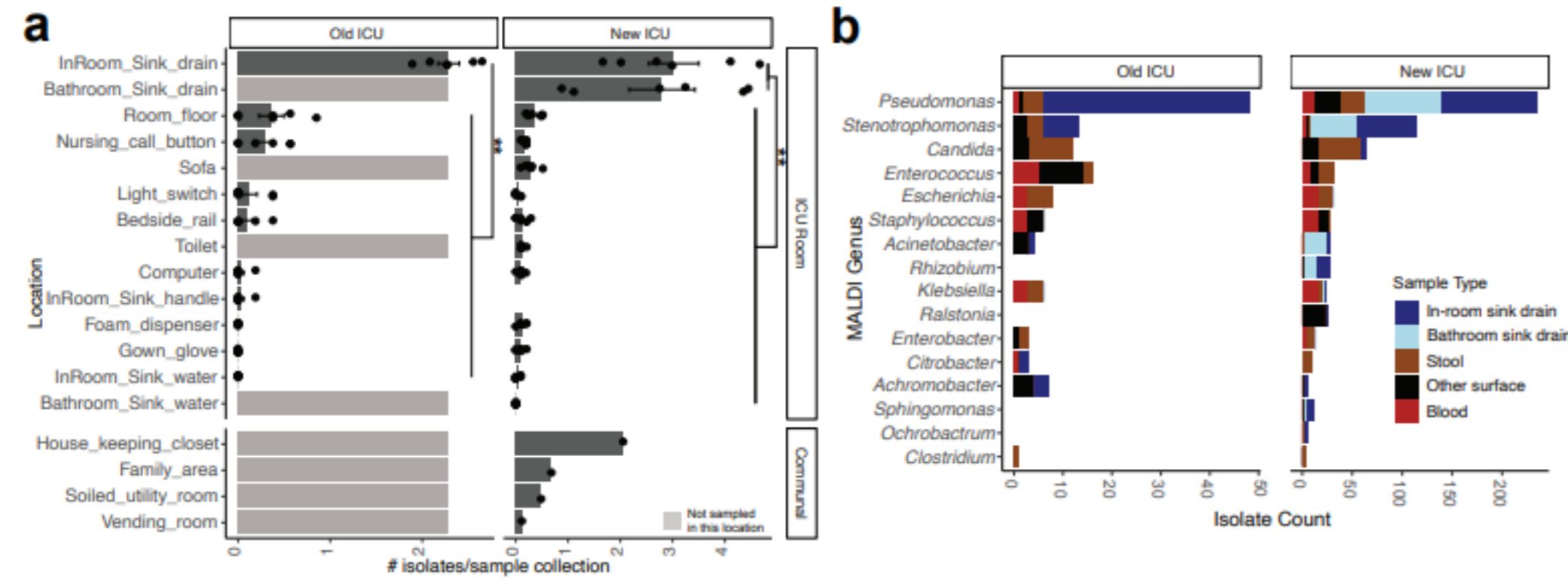
Our devices fights the Biofilm Growth.



Sink drains produced more ARO(Antibiotic resistant organism)than any other surface and the most frequently isolated genus was *Pseudomonas* spp.

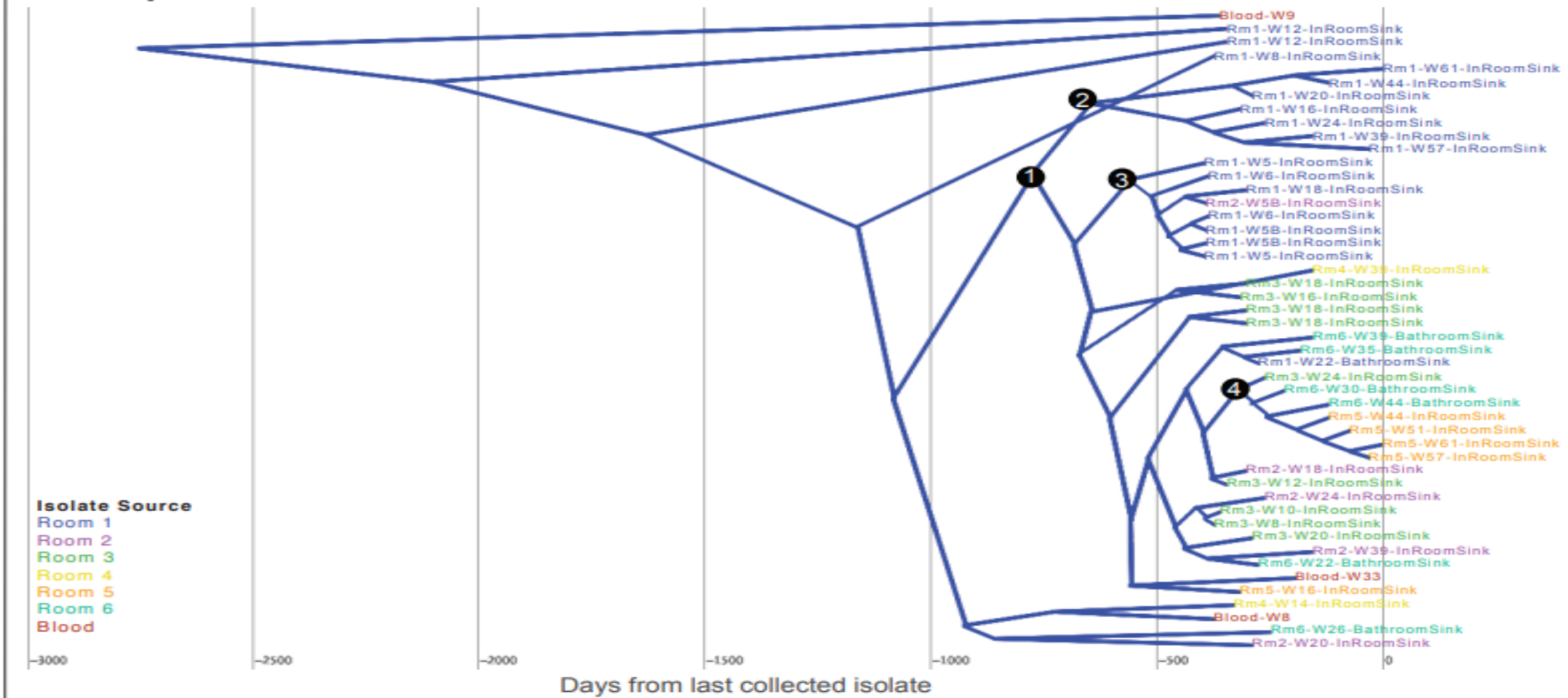
RESULTS

Sink drains produced more AROs than any other surface and the most frequently isolated genus was *Pseudomonas* spp.



RESULTS

Time-measured phylogenetic analysis indicates a time since most recent common ancestor of 778 days for 40 isolates from Group 1.



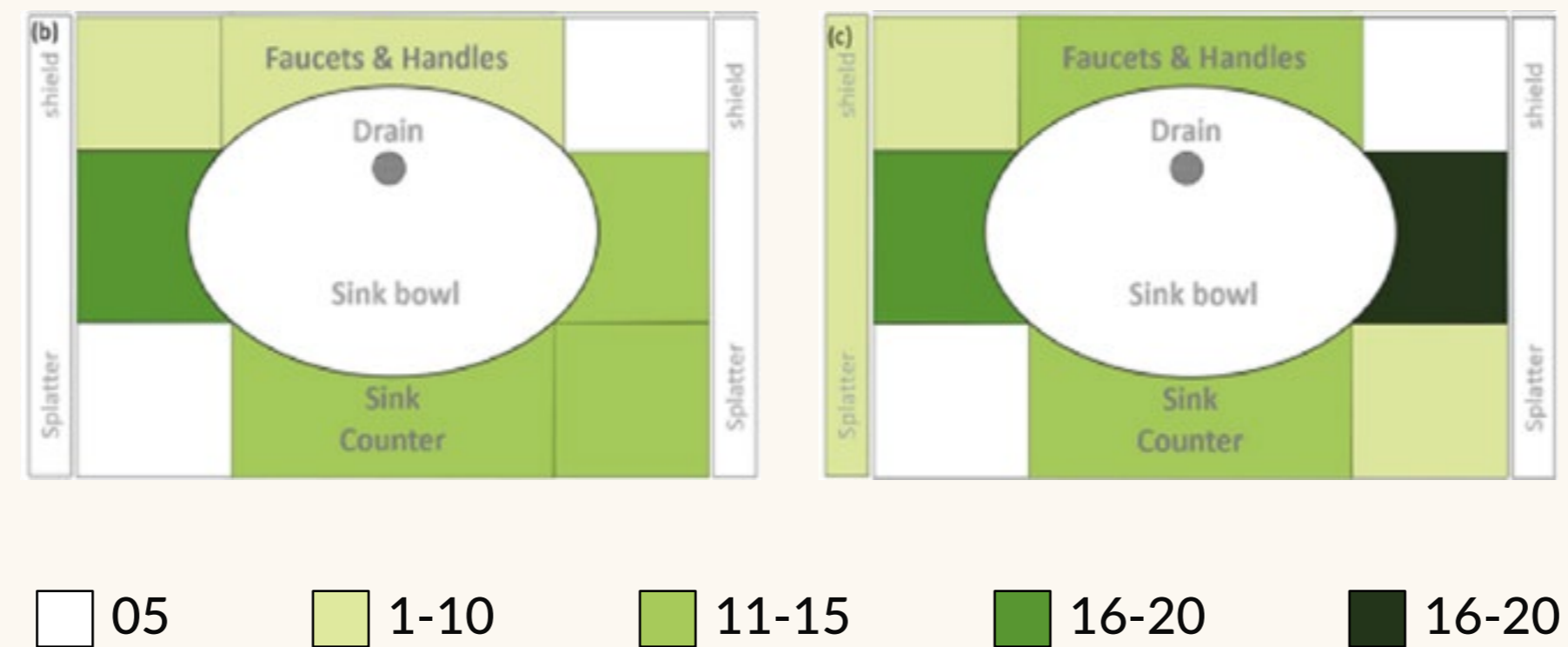
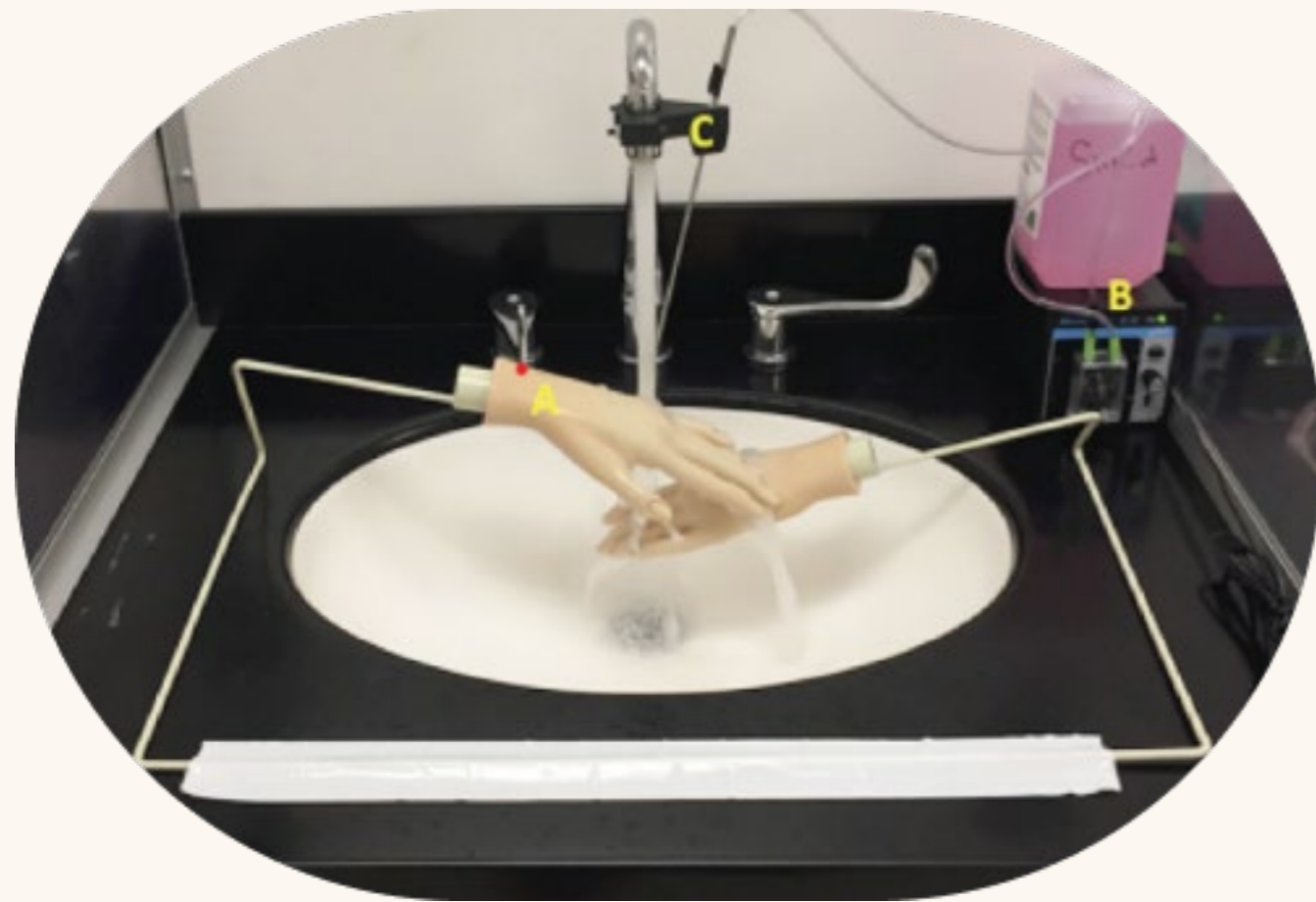
CONCLUSIONS/FUTURE DIRECTIONS

P. aeruginosa, particularly of ST1894, were found with high frequency and longitudinally in hospital sink drains and caused blood stream infections.

This study highlights the need for effective and standardized sink decontamination strategies to prevent outbreaks.

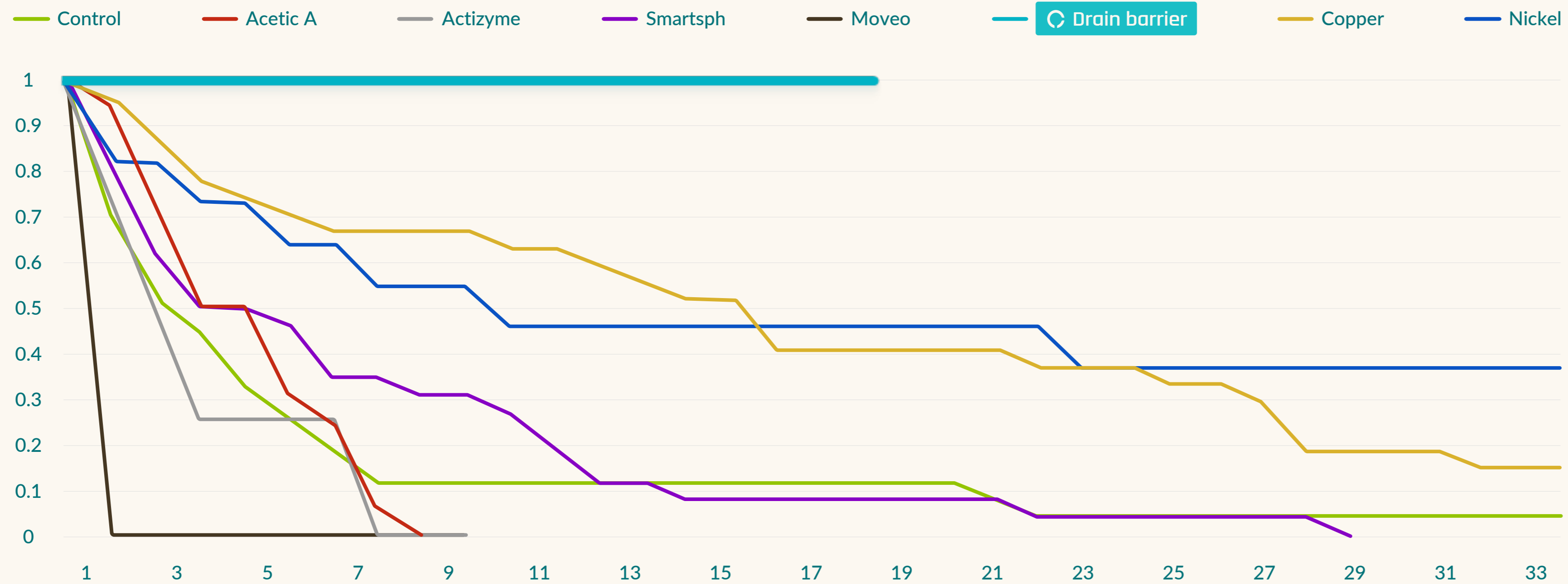
Future analysis of additional wards is necessary to understand the extent of these reservoirs and their impact on patient infections.

The impact of regular hand washing on contamination microbial presence in the sink



Programs preventing bacteria in sewage system a week after sink-trap replacement

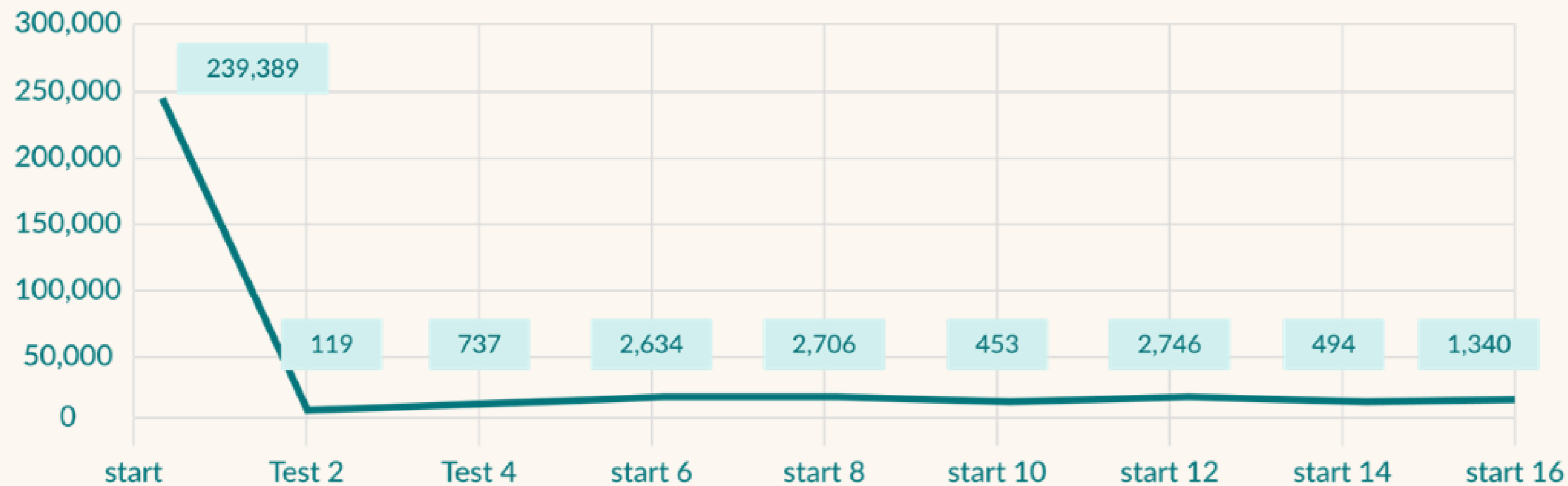
Experiment at GVS Hospital Infectious Diseases



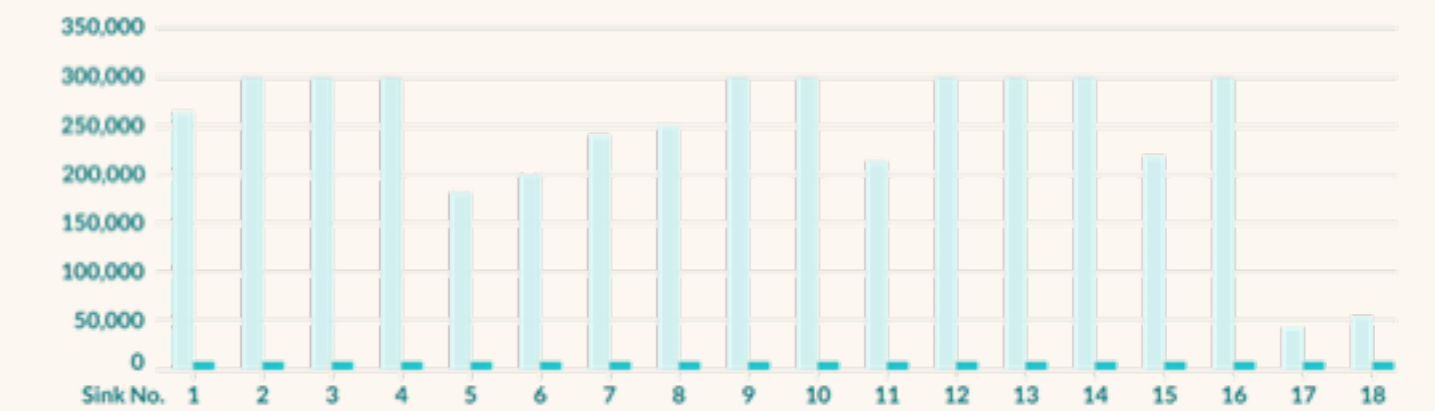
Experiment at Barzilai Hospital Infectious Diseases

Intervention programs for the prevention of bacteria and germs in the sewage system.

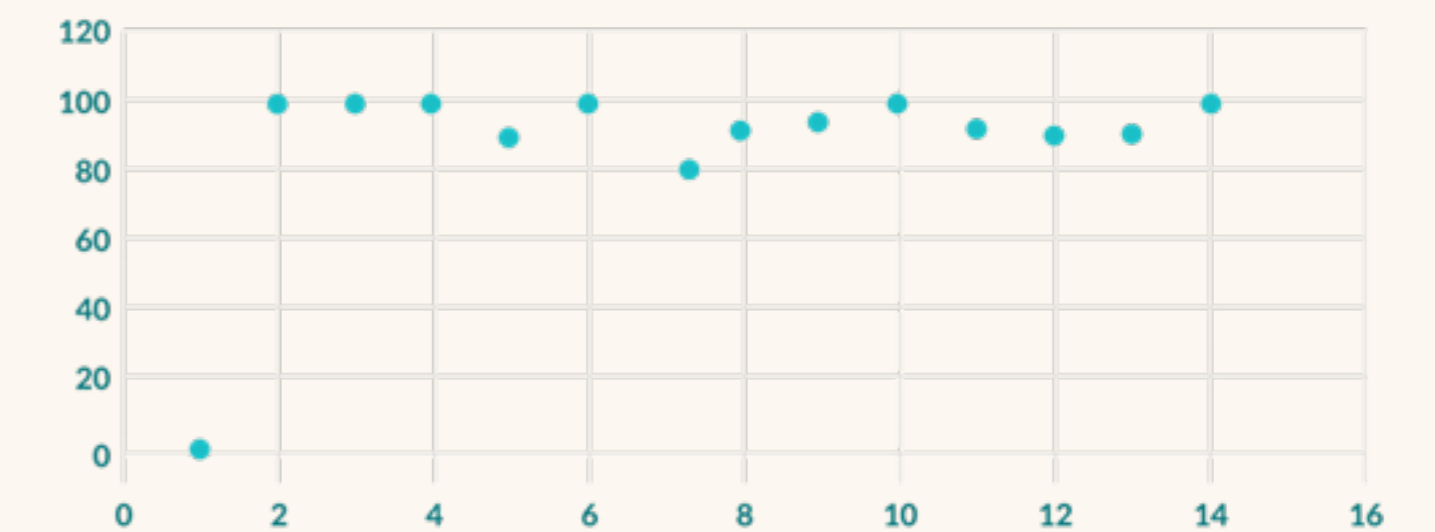
The average bacterial CPE amount samples from sinks



Physicline device intervention: Bacterial count comparison in Barzilai Hospital sinks before & after

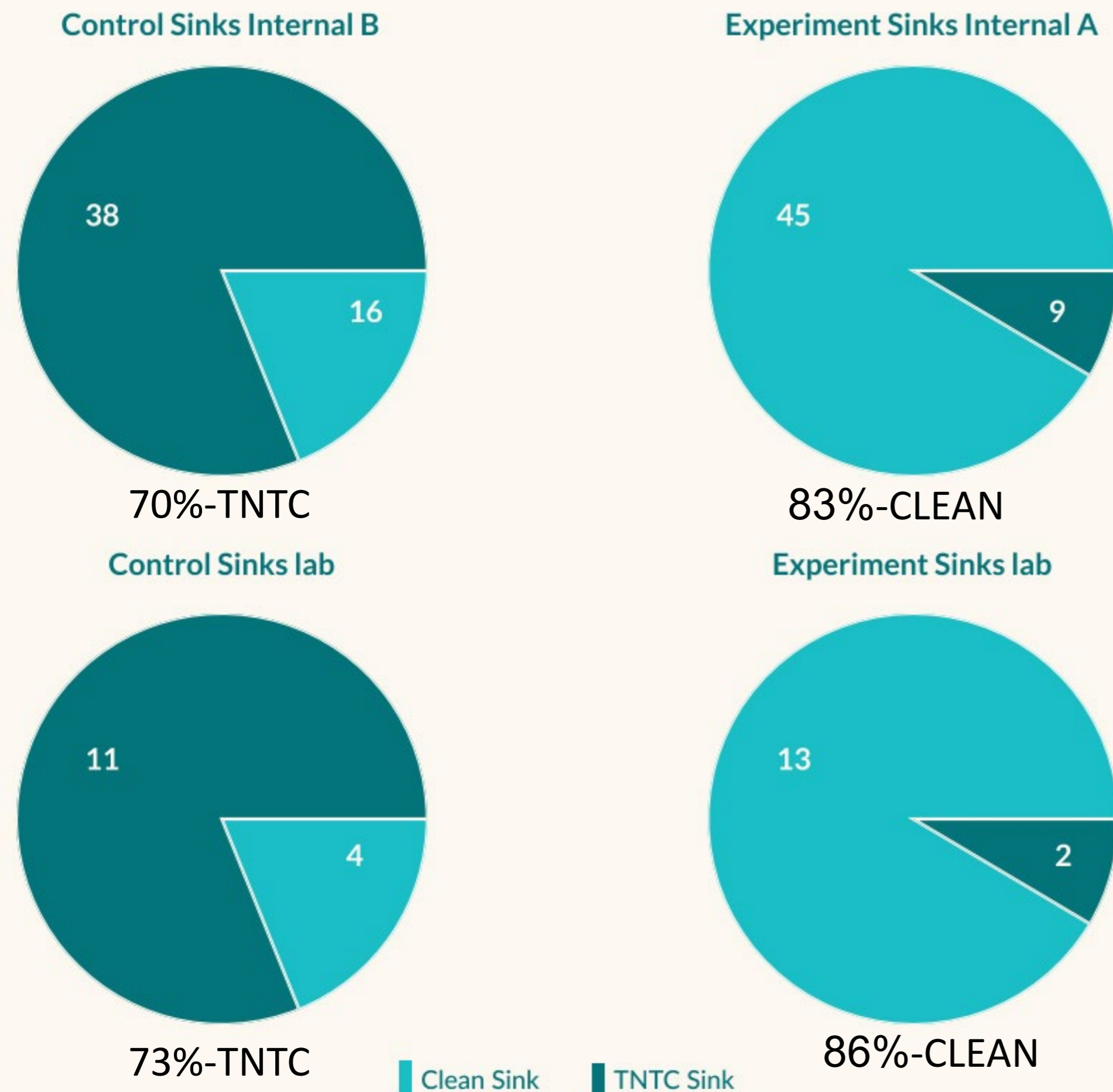


Percentage of clean sinks - Barzilai test



Research and lab results- 3 month experiment




Internal department



In the 2023 research initiative at GBP Medical Center, an extensive experiment unfolded concurrently in two vital internal departments: the premature department and the hospital laboratories. Following strict sampling and data analysis, 60 Physiclean units were deployed across these two departments. Bi-weekly monitoring sessions were conducted by a dedicated team from Chai Laboratories, involving the sampling of 34 sinks. Each session surrounded two samples per sink (inside the sink and around the sink), along with two air samples measuring CFU/m³ for both bacteria and fungi.

The experiment, spanning three months, was marked by notable variations between the departments. The crucial results are both within the sink and in the ambient air samples.

Research and lab results at Taryag Laboratory

			Summary of impermeability test on valve of the liquids draining system by Physiclean Ltd.
Page 3 of 4	22.02.2021	QA 729-01	
5. Reasoning and explanations regarding the selected test method: 5.1. Ethanol is considered a substance possessing qualities of very high volatility at room temperature, a small molecule size, and solubility in water. 5.2. Passage of ethanol via the valve is a good indication of the valve's capability to serve as a barrier for the passage of micro-organisms from the drainage pipe to the workspace at the other end of the sink. 5.3. Ethanol's high solubility simulates an extreme situation of accumulation of gases with high penetration capability within the siphon and therefore creates a significant challenge to examining the valve's potential impermeability. 5.4. The gas detector operates in the lowest detection range starting at 1 part per million (PPM) i.e., 1 part of ethanol per 1 million parts of air in the space. 6. Summary and Results: 6.1. The test showed that the detector is suitable for, and capable of, locating the presence of ethanol vapor from the system opening. Later in the test, it was found that the valve completely seals the siphon space to the passage of gases as is the case when working with both low and high volumetric flow rates of water. 7. Conclusions: 7.1. The results of this test unequivocally indicate that the valve is suitable for serving as a barrier to the passage of particles between its two ends, in a closed situation and in a work situation. 7.2. Images from the test are included in Appendix 1.			



97.5%

Valve Function Percentage
(Alcohol Vapor Test)

Summary of sealing test done by Taryag Labs for liquid draining system valve by Physiclean LTD.

Environmental surface sampling for qualitative & quantitative detection of microbial burden in high risk areas of three hospitals in Dhaka city

Bangladesh J Med Microbial 2021

Highest bacterial load from inanimate surface :

- **sinks (155 CFU/cm²)**
- ICU bedrails (7.56 ± 0.76 CFU/cm²) and
- OT sandals (66 CFU/cm²).



A



B



C

Level of cleaning

Loading 95%



Loading 80%



Loading 95%



Bacterial Load

Drain Barrier vs Competitors

Retail Prices



Drain barrier

- Installation without a problem by technical staff in a hospital or \$60 by the company
- Minimal maintenance costs about \$30 per year.
- Working on two batteries for one year.
- Hermetically seals the connection between the sink and the standing water in the sewage system



Drain barrier **PRO**



Competitor A

The hospital can expect to pay about 1200\$ per unit (sink)

- installation of about 150\$ a sink
- 300\$ a unit as an annual service fee
- Requires an external power source



Competitor B

The hospital can expect to pay about 700\$ per unit (sink)

- Installation of about 150\$ a sink
- 150\$ a unit as an annual service fee
- Requires an external power source

Thanks,
תודה,
Gracias,
شكرًا