Study on the effectiveness of the use of air purification systems

NOVAERUS NV 200 and NV 800 in

Bucharest Emergency University Hospital

Bucharest Emergency University Hospital

SUMMARY OF CLINICAL TESTING

- The testing was carried out at Bucharest Emergency University Hospital by the company S.C. DENIMED CONSULTING S.R.L. together with representatives of the Department of Nosocomial Infection Prevention and Control.
- Bucharest Emergency University Hospital is one of the largest emergency university hospitals in Romania. Within the hospital clinical activity in applied medical research, didactic and scientific activity, work on medical assistance and combating epidemics is carried out at the highest scientific and professional standards and with the highest level of quality of the services.
    - The study evaluated the effectiveness of the NOVAERUS air purification system, which is based on plasma.
- During the study, which was carried out over a period of 90 days/3 months, 336 air samples were taken from 3 different points in 7 locations.
- The study was supervised by Dr Flaviu Plata and Dr Katia Lambru, primary epidemiologists in the Department of Nosocomial Infection Prevention and Control, and with the participation of the biologist Maria Braileanu, Lead Biologist from the same department.

KEY FINDINGS

- The hospital staff found the NOVAERUS air purification system to be perfectly tolerable and easy to use.
- In the case of the air samples collected during the period of operation of the system, the number of colony-forming units was up to 87% lower than in the case of air samples collected before the system started to be used for fungi, up to 89% lower for bacteria and up to 100% lower for Staphylococcus (staf.cg+).

TEST REPORT

Evaluation of the NOVAERUS NV 200 and NV 800 air purification systems

Current phase of the test:	Complete
Product tested:	Novaerus air purification system based on plasma, models NV 200 and NV 800
Location in which the test was carried out:	Bucharest Emergency University Hospital
Test coordinator from the hospital:	• Dr Flaviu Plata – Primary Epidemiologist • Dr Katia Lambru – Primary Epidemiologist • Biologist Maria Braileanu, Lead Biologist in the Department of Nosocomial Infection Prevention and Control.
Company:	S.C. DENIMED CONSULTING S.R.L. – Str. Iovita, no. 23-27 Sector 5, Bucharest
Person from the company responsible for the test:	Dr Alexandru-Octavian Grumaz – Director General
Period in which the test was carried out:	1 June 2015 – 1 September 2015
Date of report:	19 October 2015

I. SUMMARY

Title of the study: *Evaluation of the Novaerus model NV 200 and NV 800 air purification systems*

Entity carrying out the test: S.C. DENIMED CONSULTING S.R.L.

Test locations: Medical areas (treatment rooms) at the Bucharest Emergency University Hospital

Test period: 1 June 2015 – 1 September 2015

Objectives:

- Evaluation of the effect of the air purification system on the microbial load of the ambient air
- Comparison of the effectiveness of the purification system over the test period
- Evaluation of the ease of use of the system and the tolerance of this in the environment

II. METHODOLOGY:

The study was carried out at the Bucharest Emergency University Hospital to evaluate the effectiveness of the Novaerus model NV 200 and NV 800 air purification systems.

The test was carried out in practical and current activity conditions and involved three stages:

II.1. Selecting test zones/locations and establishing the number of Novaerus systems needed

The test locations were determined by mutual agreement between the test coordinator and the S.C. DENIMED CONSULTING S.R.L. team in accordance with Sponsorship Contract no. 24262/21.05.2015.

Seven locations situated in the surgical departments of the Emergency University Hospital were selected for the study as follows:

- Cardiovascular surgery department: one location – NV 800 – SN: EGIR – 230-190-10-07/14-11683
- Thoracic surgery department: one location – NV 200 – SN :PAIW –230–120- 10-07/15-00037
- General surgery department II: two locations (wing I and wing II) – NV 200 – 2 pcs.
  – SN: PAIW –230–120- 10-07/15-00036
  – SN: PAIW –230–120- 10-07/15-00043

- General surgery department III: two locations (wing I and wing II) – NV 200 – 1 pcs. And NV 800 – 1 pcs.
  – SN: PAIW –230–120- 10-07/15-00042
  – SN: EGIR – 230-190-10-07/14-11696

- General surgery department IV: one location (wing IV) – NV 200 – 1 pcs. – SN: PAIW –230–120- 10-07/14-11607

The number of Novaerus systems used for the test was determined by the S.C. DENIMED CONSULTING S.R.L. team based on the volume of the location and the degree of risk in the area in which the systems were installed.

Seven systems were installed for the test, as follows:

- Cardiovascular surgery department – treatment room (l x w x h: approx. 4.73 x 5.82 x 2.60 m; room volume approx. 71.58 m^3) – 1 **Novaerus NV 800** system
- Thoracic surgery department – treatment room (dimensions of the room l x w x h: approx. 3.65 x 3.70 x 2.60 m; volume of the room approx. 35.15 m3) – 1 **Novaerus NV 200** system
- General surgery department II – wing I – treatment room (dimensions of the room l x w x h: approx. 3.65 x 3.70 x 2.60 m; room volume cca 35.15 m3) – 1 **Novaerus NV 200** system
- General surgery department II – wing II – treatment room (dimensions of the room l x w x h: approx: 3.65 x 3.70 x 2.60 m; room volume approx. 35.15 m3) – 1 **Novaerus NV 200** system
- General surgery department III – wing I – treatment room (dimensions of the room l x w x h: approx. 3.65 x 3.70 x 2.60 m; room volume approx. 35.15 m3) – 1 **Novaerus NV 200** system
- General surgery department III – wing II – treatment room (dimensions of the room l x w x h: approx. 4.73 x 5.82 x 2.60 m; room volume approx. 71.58 m3) – 1 **Novaerus NV 800** system
- General surgery department IV – wing IV – treatment room (dimensions of the room l x w x h: approx. 3.65 x 3.70 x 2.60 m; volume of the room approx. 35.15 m3) – 1 **Novaerus NV 200** system

The systems were installed on the walls at a height of approximately 2 m above the ground in locations with as few access routes (entrances/exits) as possible and preferably without a current flow and an excess of fresh air.

Each system was tested over a period of four weeks, broken down into two periods as follows:

Period 1	2 weeks	system on
Period 2	2 weeks	system off

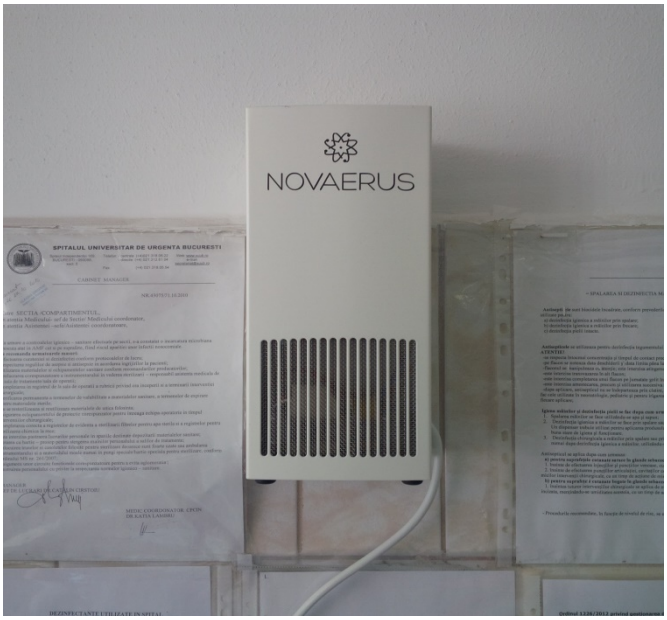
The test was repeated over a period of three consecutive months in accordance with the protocol provided to the testing team by S.C. DENIMED CONSULTING S.R.L. in accordance with Sponsorship Contract no. 24262/21.05.2015.

NV 800 AND NV 200 AIR PURIFICATION SYSTEMS MOUNTED IN THE SURGERY DEPARTMENTS OF THE BUCHAREST EMERGENCY UNIVERSITY HOSPITAL

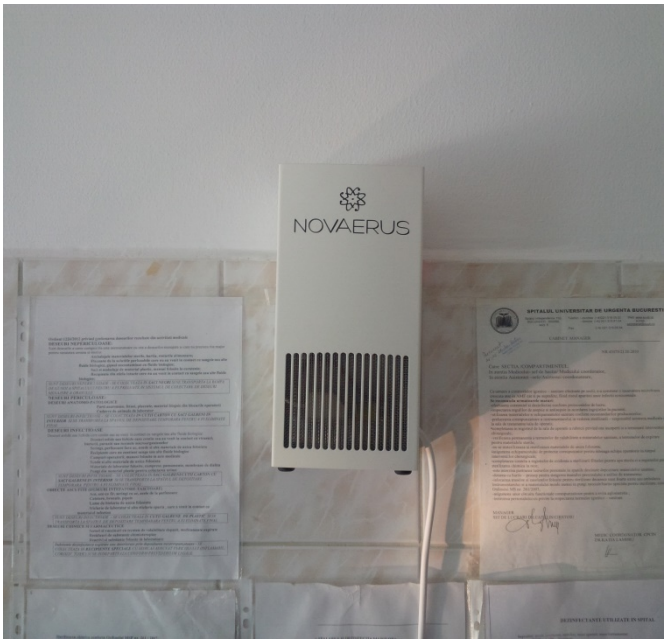
Department: Cardiovascular surgery – NV 800
SN: EGIR – 230-190-10-07/14-11683

Department: Thoracic surgery – NV 200
SN: PAIW –230–120- 10-07/15-00037

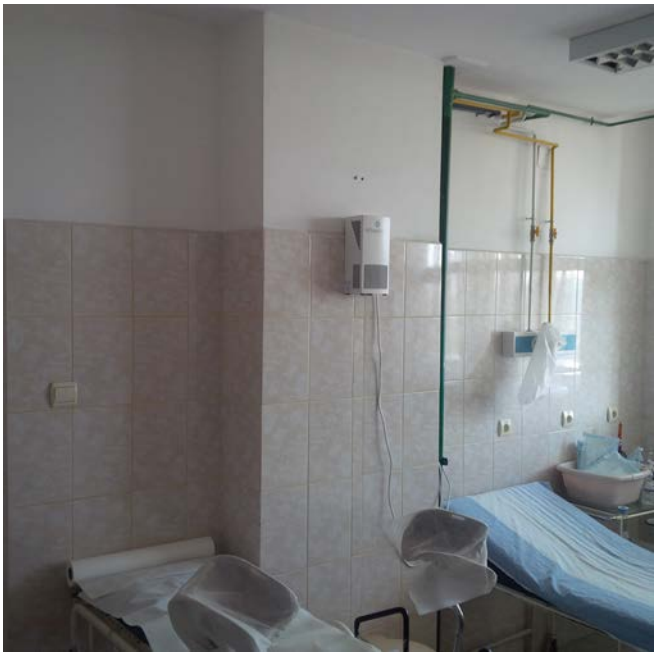
Surgery department II – wing I – NV 200
SN: PAIW –230–120- 10-07/15-00036



Surgery department II – wing II – NV 200
SN: PAIW –230–120- 10-07/15-00036



Department: Surgery III – wing I – NV 200
SN: PAIW –230–120- 10-07/15-00042



Department: Surgery III – wing II – NV 800
SN: EGIR – 230-190-10-07/14-11696

Department: Surgery IV – wing IV – NV 200
SN: PAIW –230–120- 10-07/14-11607

II.2. Determination of the test points and the collection time

After choosing the locations for the test to be carried out and the systems to be installed, three individual fixed testing points were established, from which air samples were collected and which were marked on a flat surface.

An important criterion when determining the fixed testing points was the uniformity of these so representative samples of the air in the location selected for the test could be collected.

The fixed collection points were selected so as to not be too close to one another or in an area with direct current from air conditioning or other sources of possible pollution of the air in the room. The air samples were collected at the same time of day, between 2 p.m. and 4 p.m., as more intense activity (such as changing the bed linen) could cause a dramatic increase in the number of pathogenic agents in the air.

II.3. Methodology of the collection and processing of the samples:

Three fixed collection points were established for each location chosen.

Over the course of the 90 days during which the test was carried out, air samples were collected 12 times from each location selected.

CHRONOLOGY OF THE COLLECTION OF THE SAMPLES

	Day 0	**Day 7**	**Day 14**	**Day 30**
Test T0	Control sample			
Test T1		Immediate effect sample		
Test T2			Maintenance level sample	
Test T3				Negative control

The air samples were collected at four times each month:

- **Time T0** – samples collected on day 1, before the machines are started, representing the initial level of biological load from which the measurement of the effectiveness of the Novaerus plasma system starts.

- **Time T1** – samples collected on day 7 of the test being carried out (after the machines have been working for one week). These samples represent the immediate effect of the Novaerus plasma system on the level of bio-pathogenic load of the air.
- **Time T2** – samples collected on day 14 (2 after the machines have been working for two weeks), representing the maximum level of reduction in colony-forming units which can be reached by the permanent use of the Novaerus plasma system in the test environment selected.

Although the functioning of the Novaerus system will continue to reduce the level of bio-pathogenic load of the air in the test environment selected after this point, the bio-destructive effect of this system will have been sufficiently demonstrated after a period of 14 days of testing to be able to establish a minimum value for the reduction in the number of germs.

After time T2, ALL of the systems were switched off, enabling the negative control to be able to be taken at time T3.

- **Time T3** – samples collected on day 30 (two weeks after the systems were switched off), representing the negative control test, through which the potential relapse in the level of bio-pathogenic load to the values measured prior to installation of the air purification system can be evaluated.

METHODOLOGY OF THE COLLECTION OF SAMPLES: BACTERIA AND FUNGI

The selection of the location for the test to be carried out is particularly important. The entry of air into the room (doors, windows, air conditioning systems etc.) was taken into account when selecting the sample collection points.

In order to analyse the total number of bacterial and fungal colonies, the air samples (500 litres) were collected and filtered using the air testing equipment MAS-100 ECO (Merck, Germany), provided by S.C. DENIMED CONSULTING S.R.L. in accordance with Sponsorship Contract no. 24262/21.05.2015.

The culture media used were: blood agar for bacteria and Sabouraud agar for fungi (provider = Merck, Germany).

The following standard protocol was observed for each collection:

1. The collection equipment was positioned in the location selected at a height of 1 m above the ground.
2. The volume of air desired for the sample was selected (500 litres).
3. The collection equipment and hands were disinfected using an isopropanol-based product.
4. A Petri dish containing the culture medium was introduced into the equipment.
5. The collection equipment was closed and sealed.
6. The collection equipment was activated.
7. Once the sample had been collected, the Petri dish was removed from the equipment, the sample was identified with all of the necessary data and placed in an isothermic refrigerator bag.

The samples were transported to the laboratory within no more than two hours of collection at a temperature of between +5º and -3ºC.

The samples were incubated at +36ºC for a period of five days in the case of bacteria and at +26ºC for a period of up to seven days in the case of fungi.

III. RESULTS OF THE LABORATORY TESTS

All of the samples collected were processed at the Microbiology Laboratory at the Bucharest Emergency University Hospital.

The results of the test are set out in the tables below.

Collection points: 1. Top
2. Middle of the room
3. Bottom

Month: 1

Table 1.1: Number of bacterial CFUs in the ambient air samples

Location: Cardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	445	190	165	395
2	360	240	165	325
3	425	220	200	400

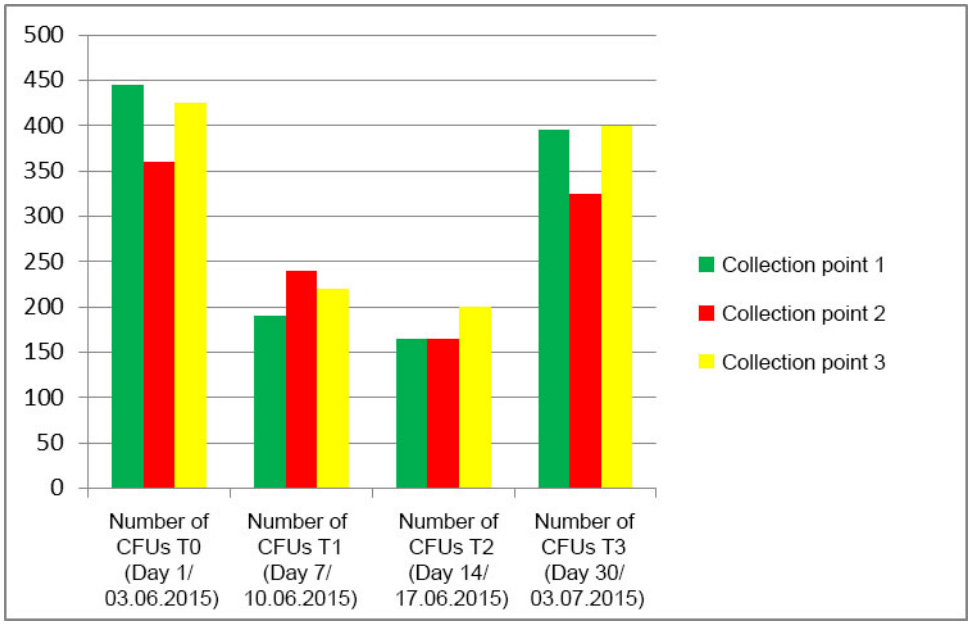


Table 1.2: Number of fungal CFUs in the ambient air samples

Location: Cardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	30	6	4	25
3	-	-	-	-

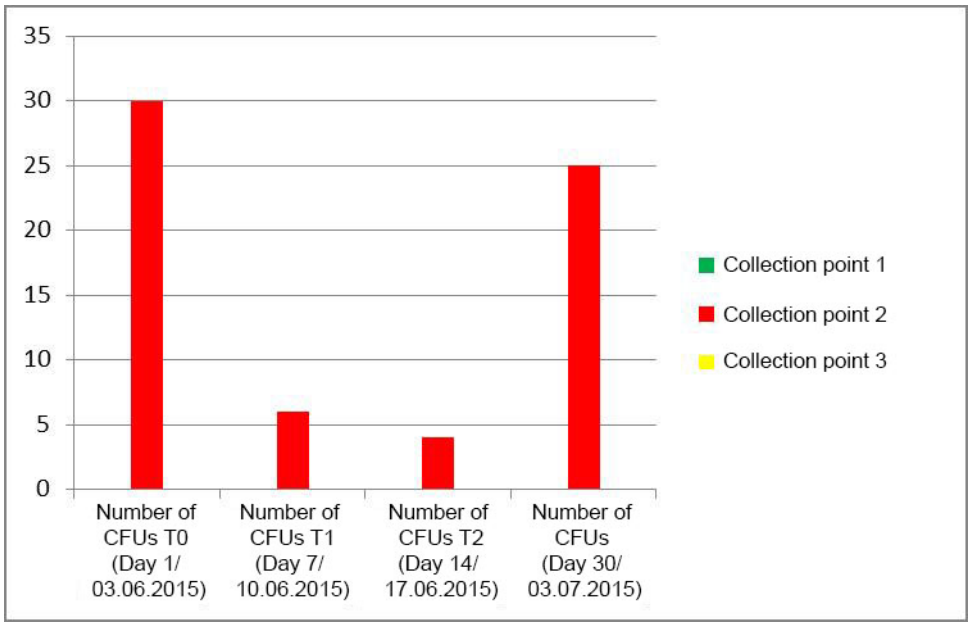


Table 1.3: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: Cardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	5	5	0	5
2	10	5	0	15
3	5	0	0	5

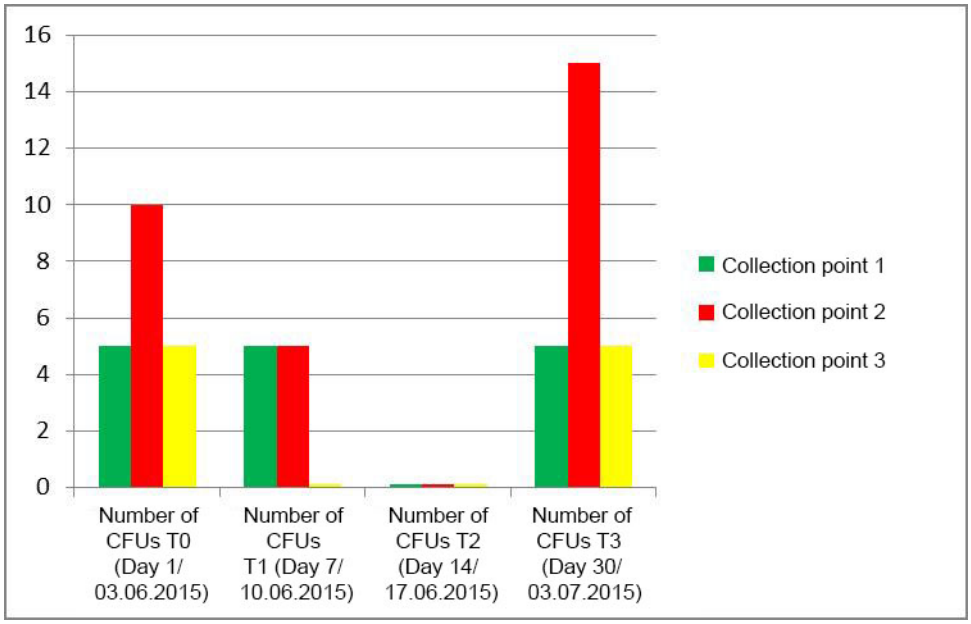


Table 1.4: Number of Streptococcus ß CFUs in the ambient air samples

Location: Cardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: **Sabouraud agar**

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 1.5: Number of bacterial CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	575	265	215	510
2	385	350	220	470
3	470	335	210	535

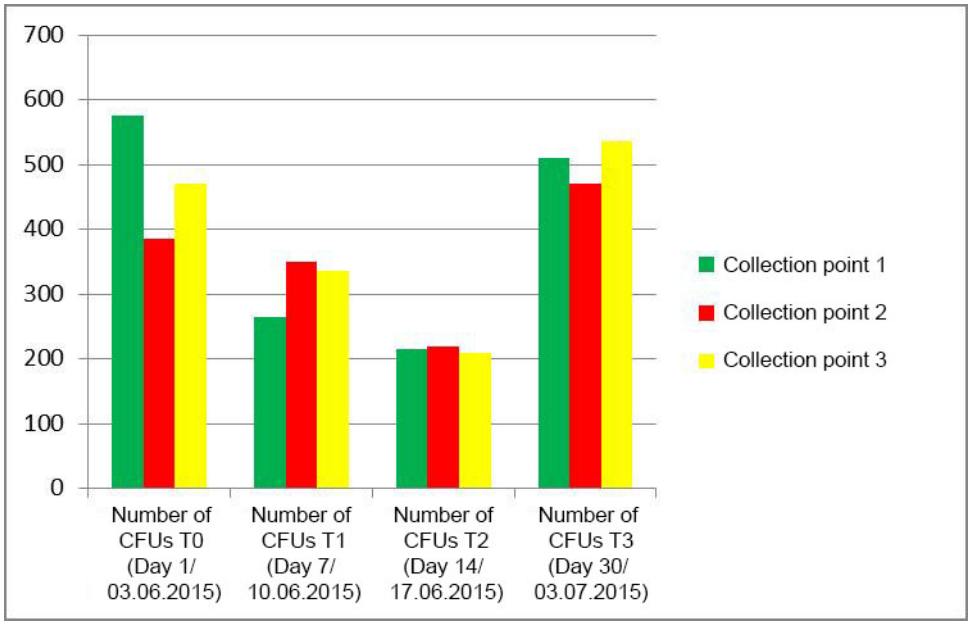


Table 1.6: Number of fungal CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	30	6	12	30
3	-	-	-	-

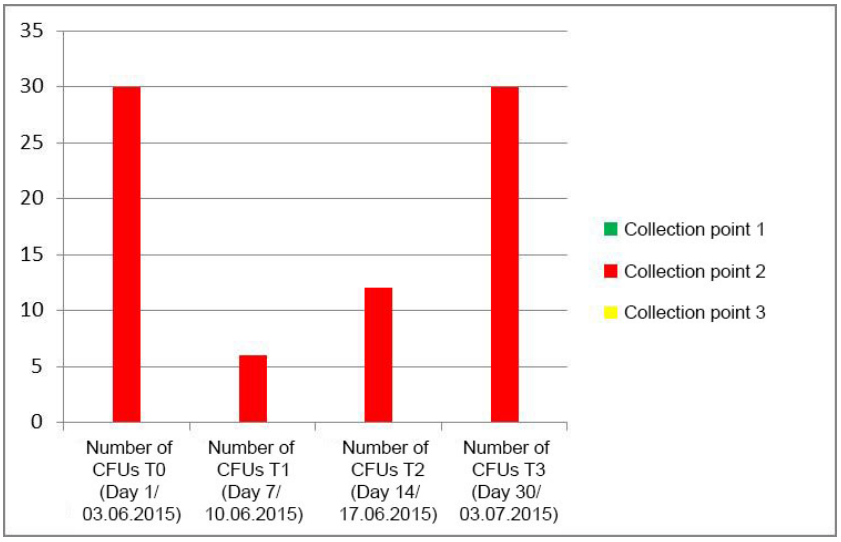


Table 1.7: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	10	5	0	10
2	5	0	0	0
3	5	0	0	15

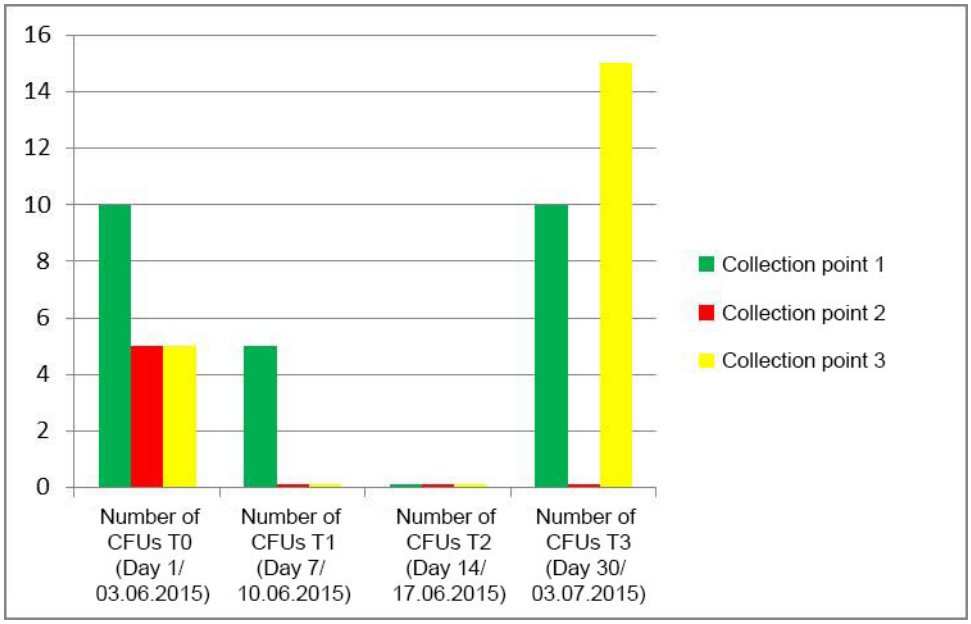


Table 1.8: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 1.9: Number of bacterial CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	265	250	240	385
2	235	200	190	380
3	360	240	235	445

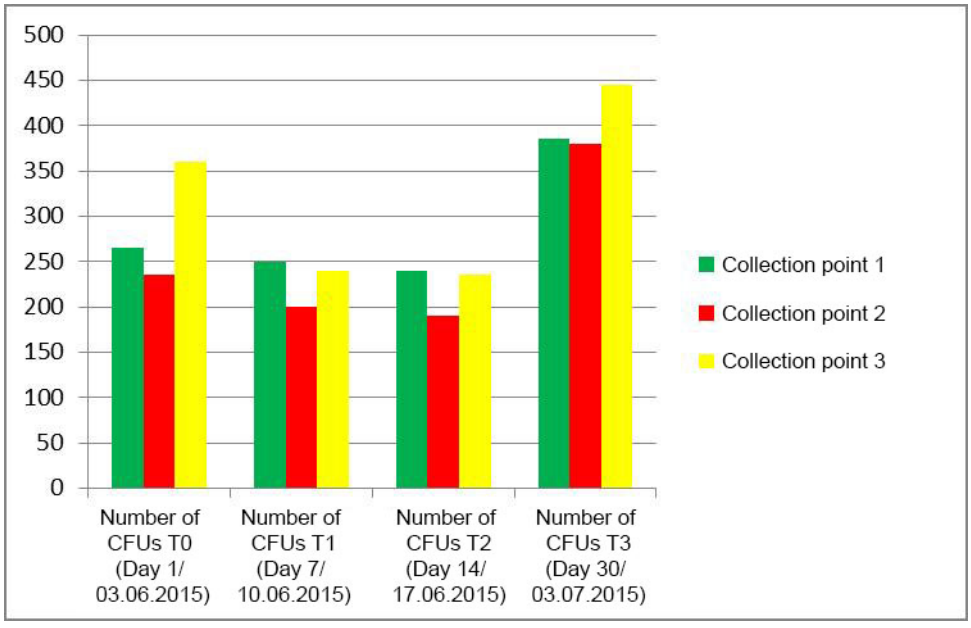


Table 1.10: Number of fungal CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	30	6	4	30
3	-	-	-	-

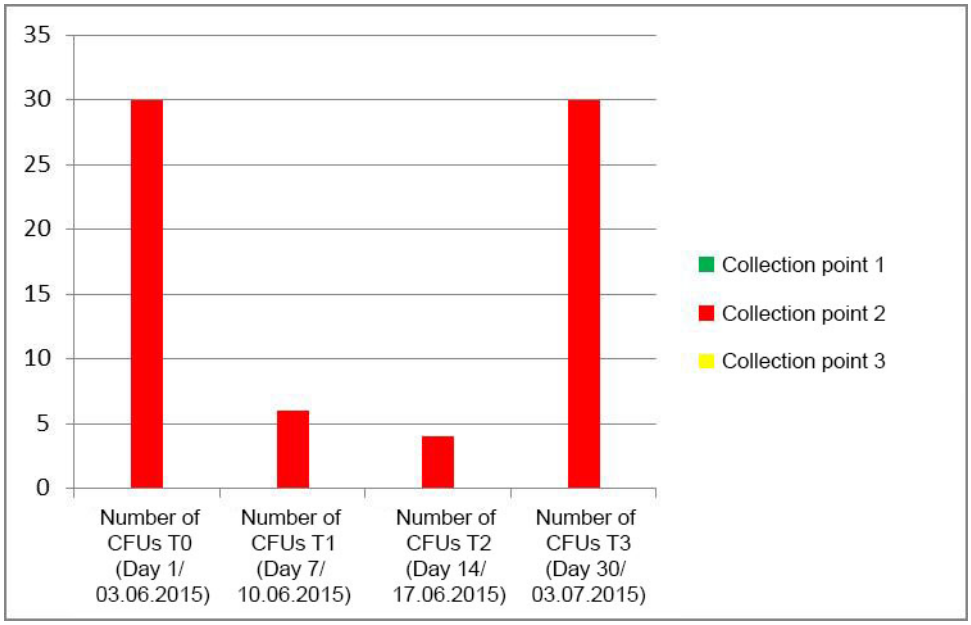


Table 1.11: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	5	5	0	10
2	10	5	0	10
3	10	0	0	10

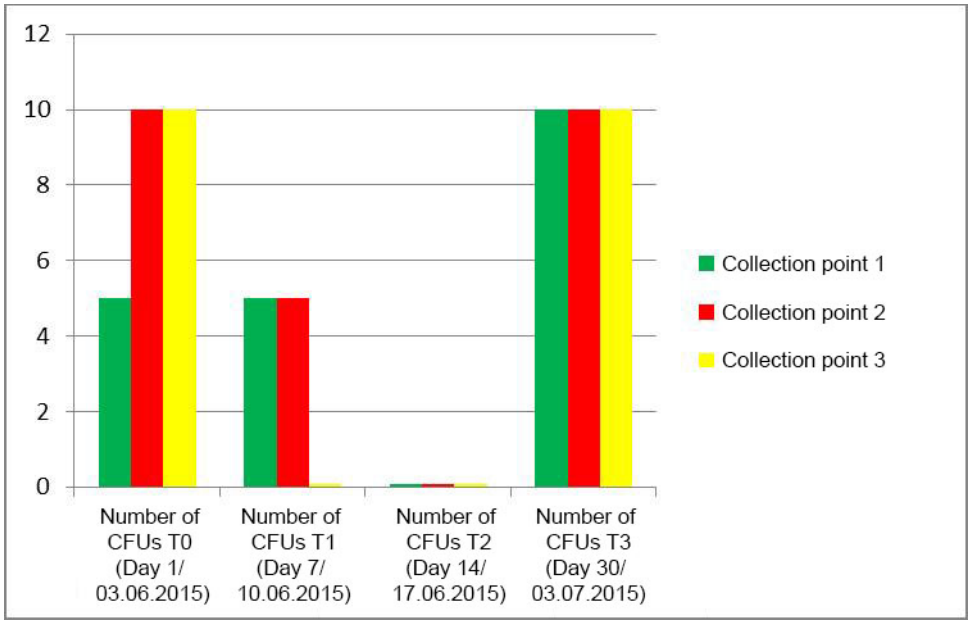


Table 1.12: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 1.13: Number of bacterial CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	325	225	145	245
2	370	255	245	260
3	335	265	225	255

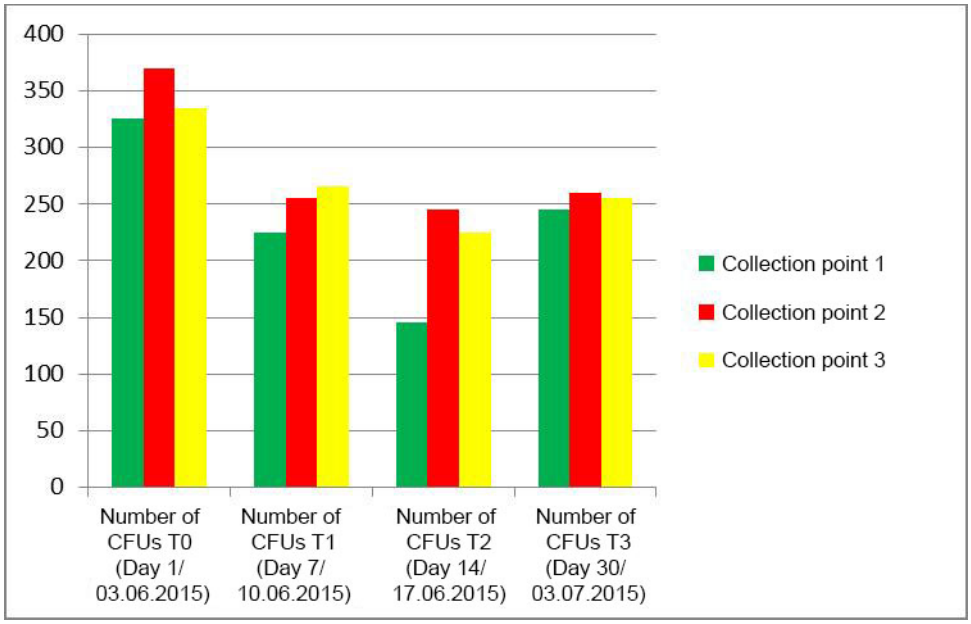


Table 1.14: Number of fungal CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	25	6	4	35
3	-	-	-	-

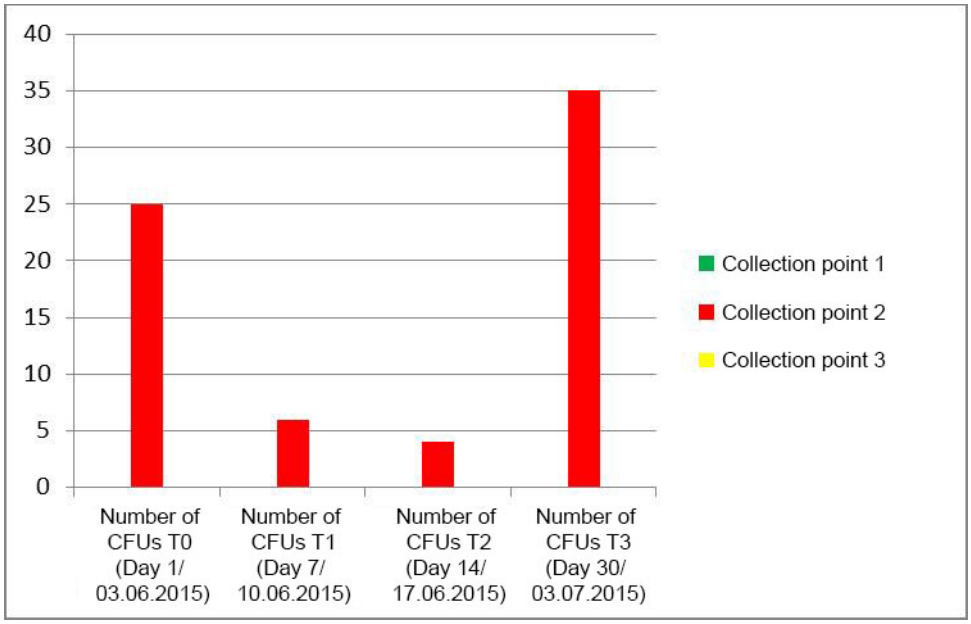


Table 1.15: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	5	0	0	5
2	5	5	0	5
3	5	5	0	5

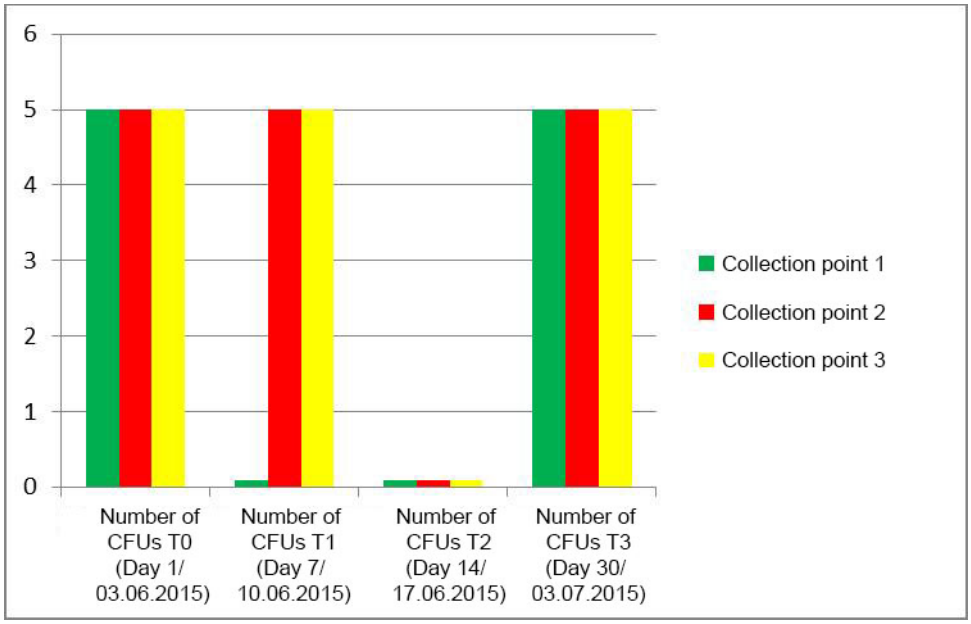


Table 1.16: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 1.17: Number of bacterial CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	265	145	75	165
2	325	155	145	370
3	300	150	140	235

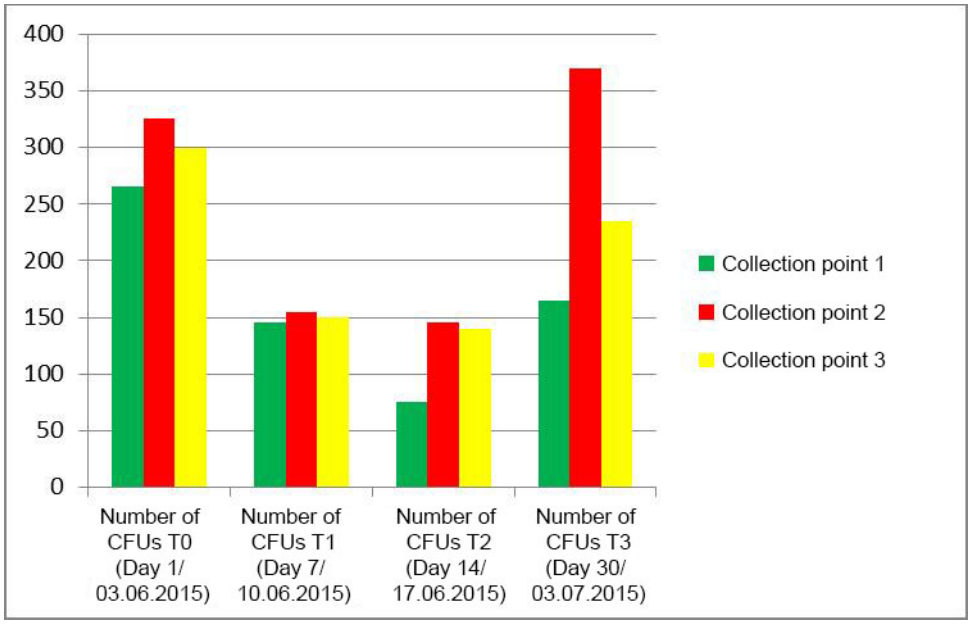


Table 1.18: Number of fungal CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	15	10	4	15
3	-	-	-	-

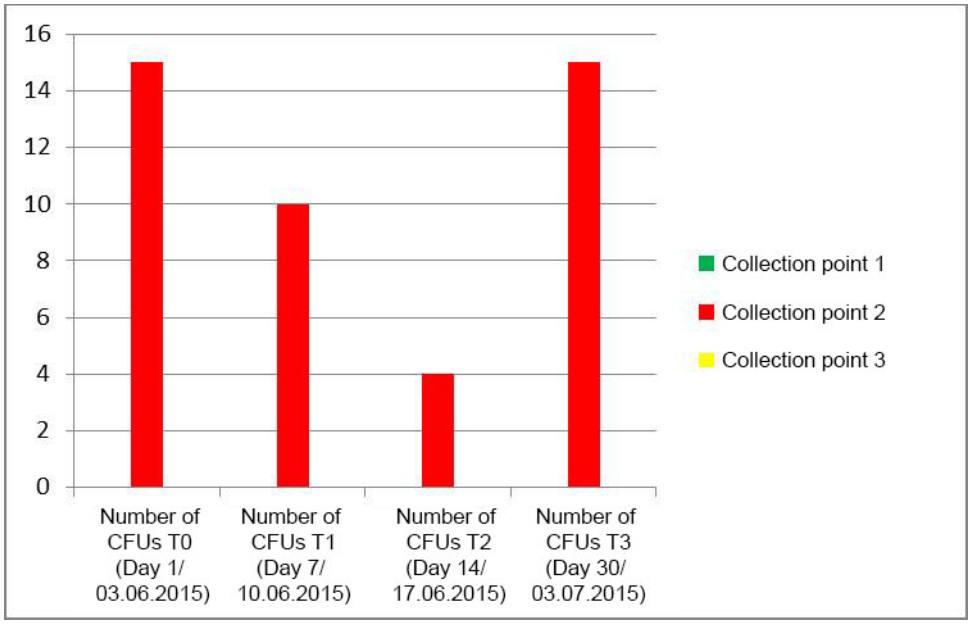


Table 1.19: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	5	0	0	5
2	10	5	0	10
3	5	0	0	10

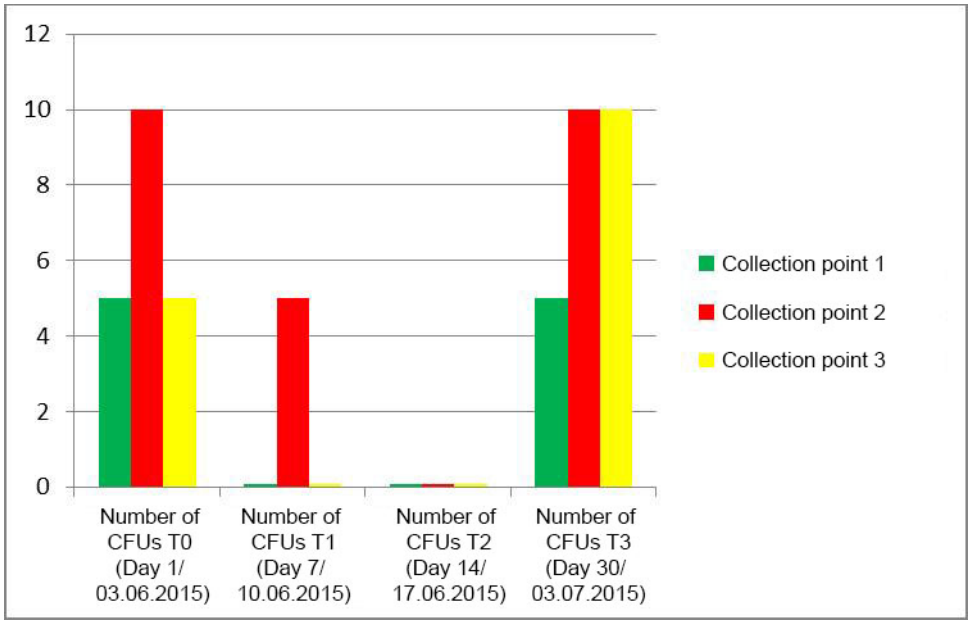


Table 1.20: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 1.21: Number of bacterial CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	445	210	150	245
2	520	240	145	250
3	655	210	185	485

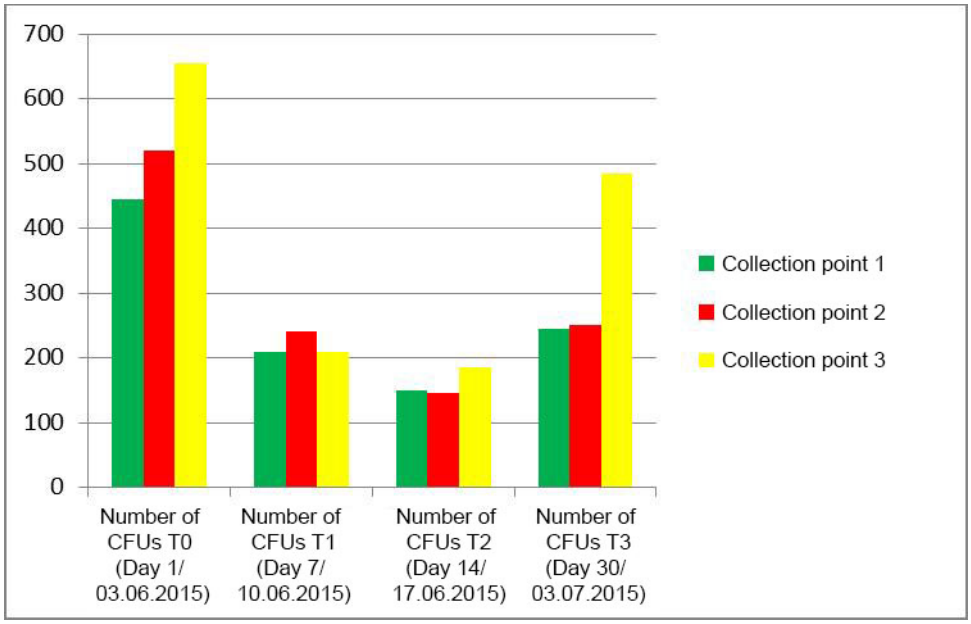


Table 1.22: Number of fungal CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	15	6	6	25
3	-	-	-	-

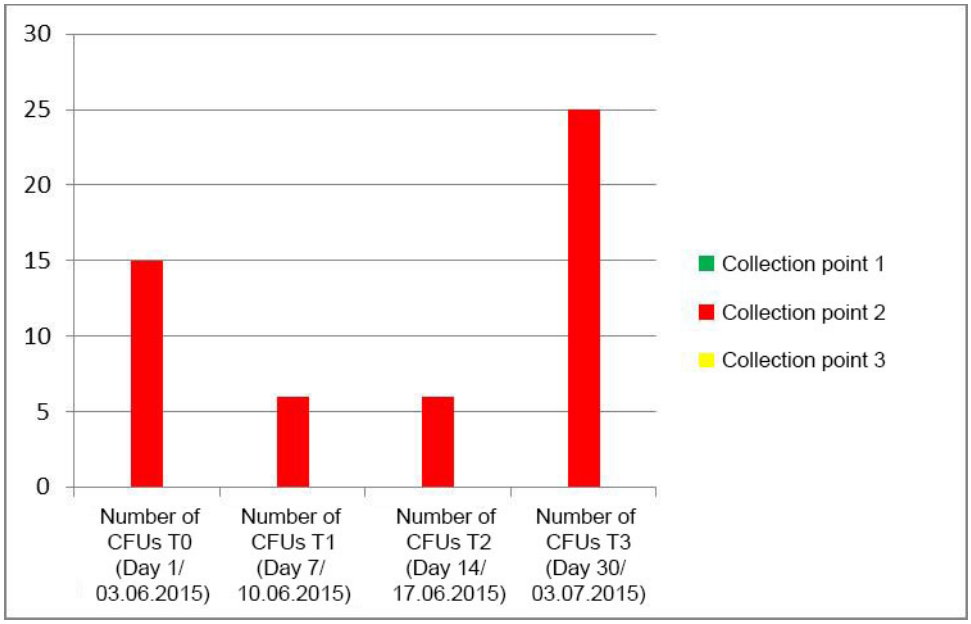


Table 1.23: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	5	5	0	10
2	10	0	0	0
3	5	5	5	5

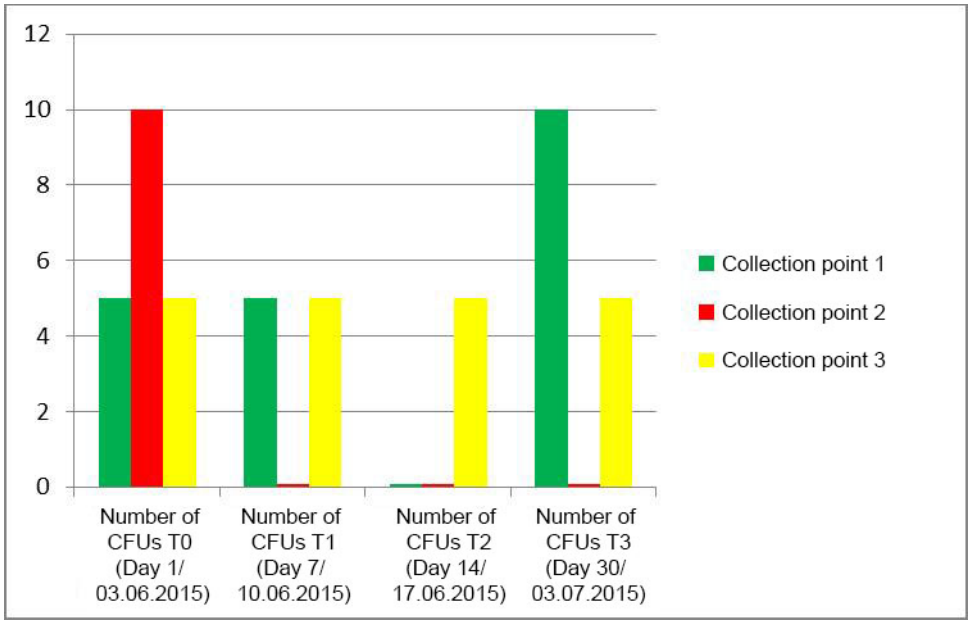


Table 1.24: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 1.25: Number of bacterial CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	640	550	75	520
2	510	470	110	495
3	520	515	110	485

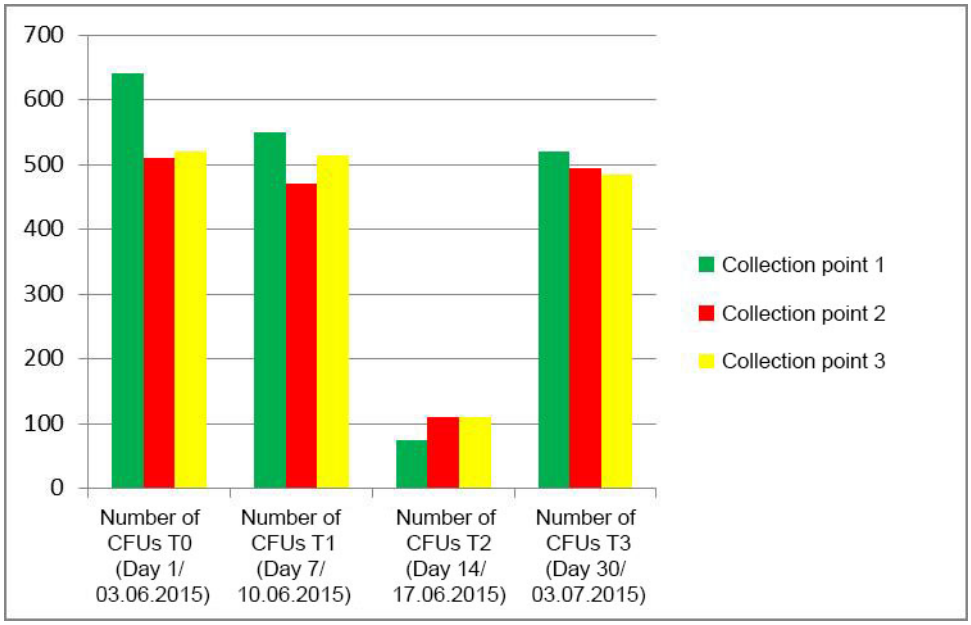


Table 1.26: Number of fungal CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar
s

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	-	-	-	-
2	25	8	6	25
3	-	-	-	-

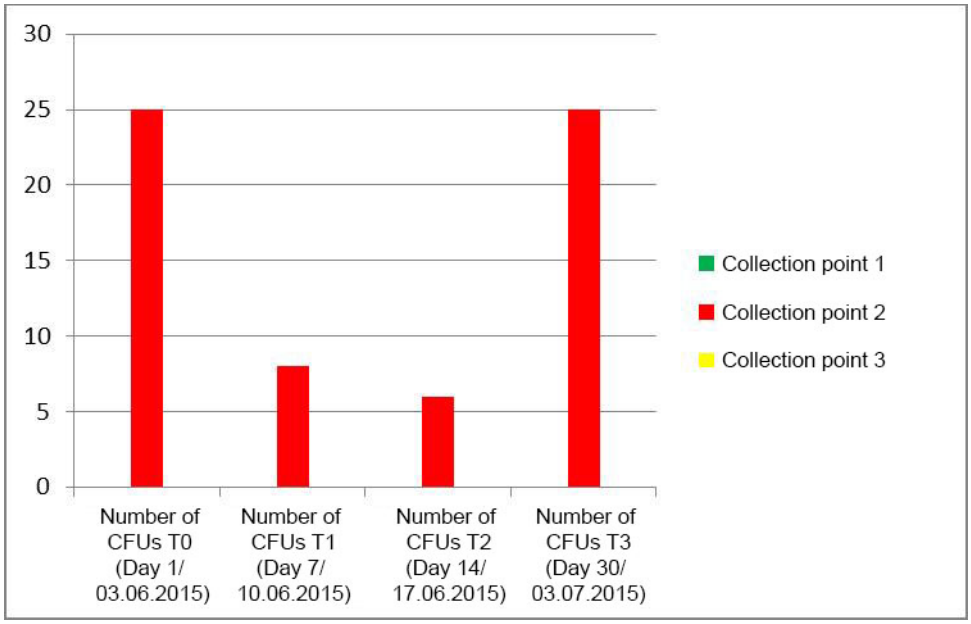


Table 1.27: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	15	0	0	5
2	15	0	0	0
3	10	5	0	0

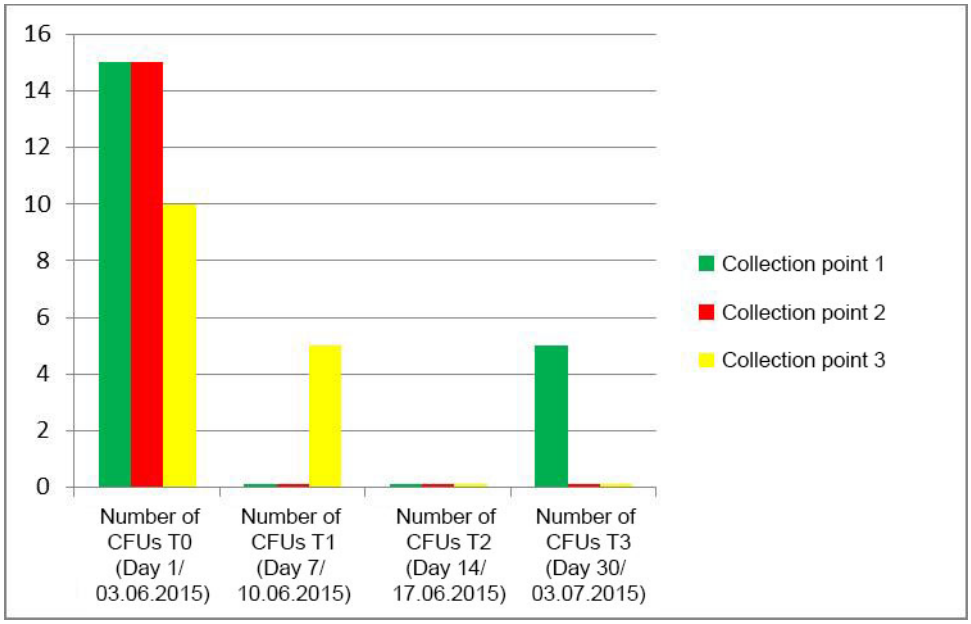


Table 1.28: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.06.2015)	Number of CFUs T1 (Day 7/ 10.06.2015)	Number of CFUs T2 (Day 14/ 17.06.2015)	Number of CFUs T3 (Day 30/ 03.07.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Month: 2

Table 2.1: Number of bacterial CFUs in the ambient air samples

Location: Cardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	395	210	165	375
2	325	190	165	310
3	400	230	210	380

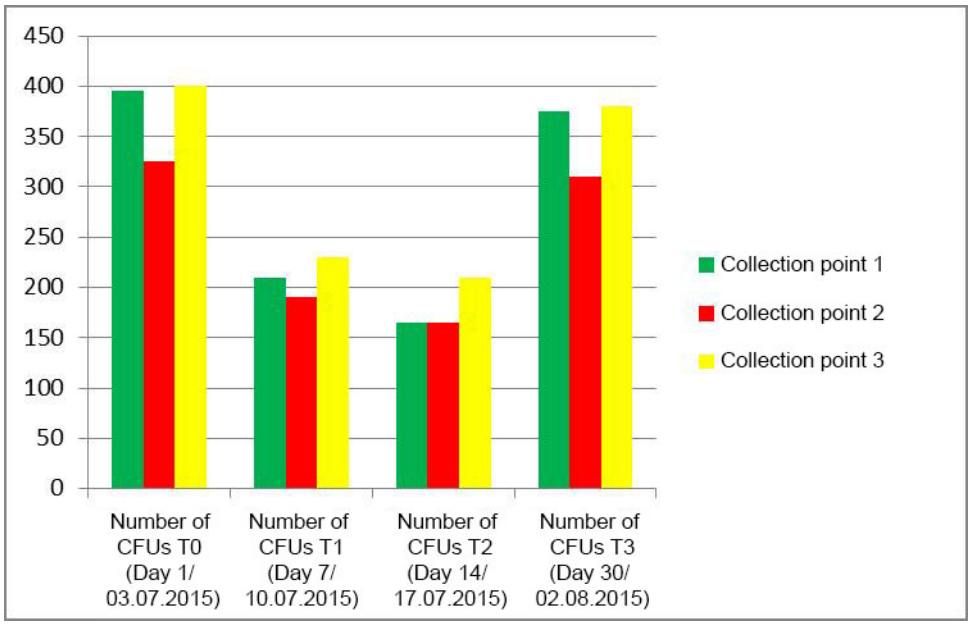


Table 2.2: Number of fungal CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	25	6	4	25
3	-	-	-	-

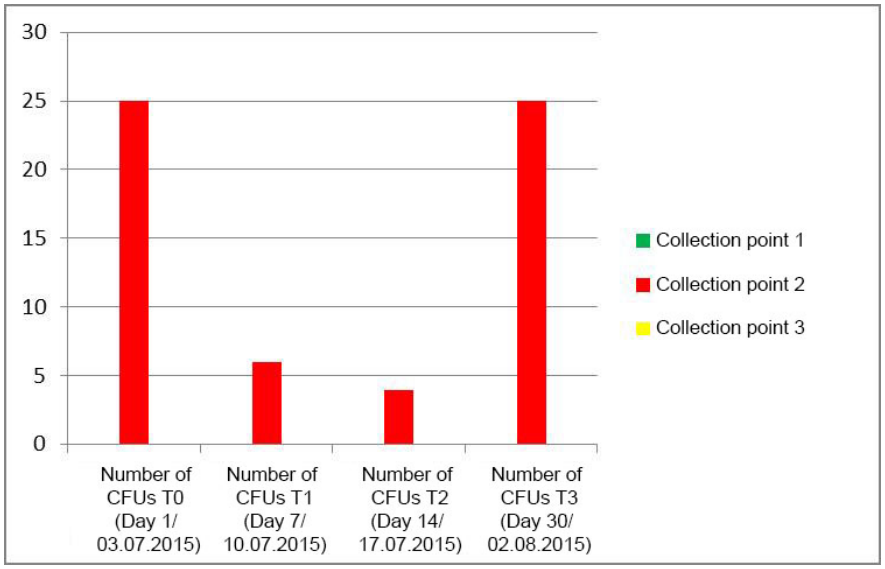


Table 2.3: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	5	5	0	5
2	15	10	0	10
3	5	0	0	5

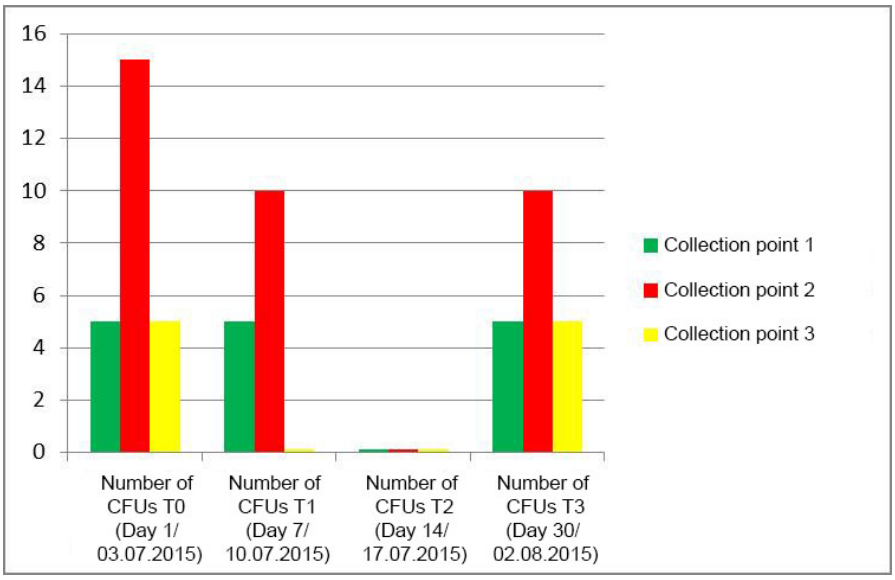


Table 2.4: Number of Streptococcus ß CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 2.5: Number of bacterial CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	510	220	165	460
2	470	410	315	540
3	535	425	210	580

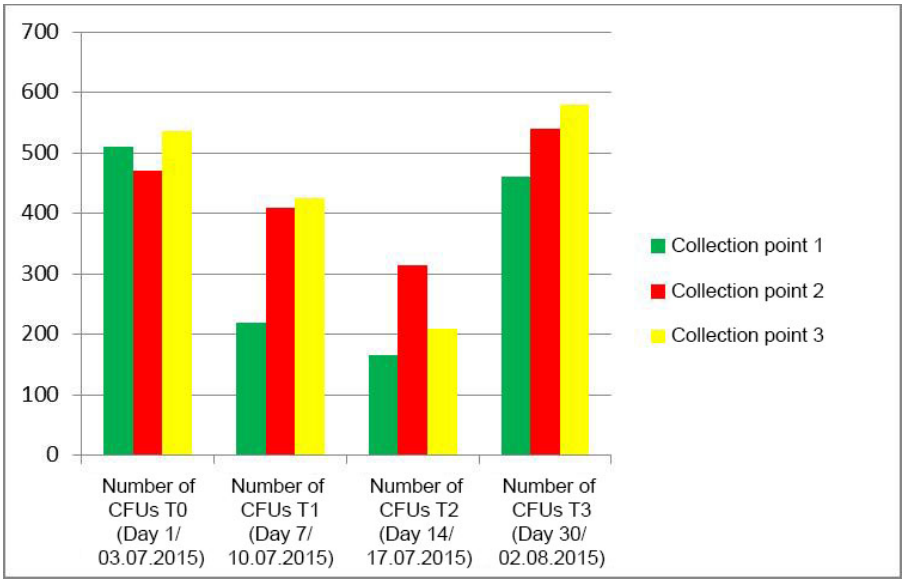


Table 2.6: Number of fungal CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	30	12	6	30
3	-	-	-	-

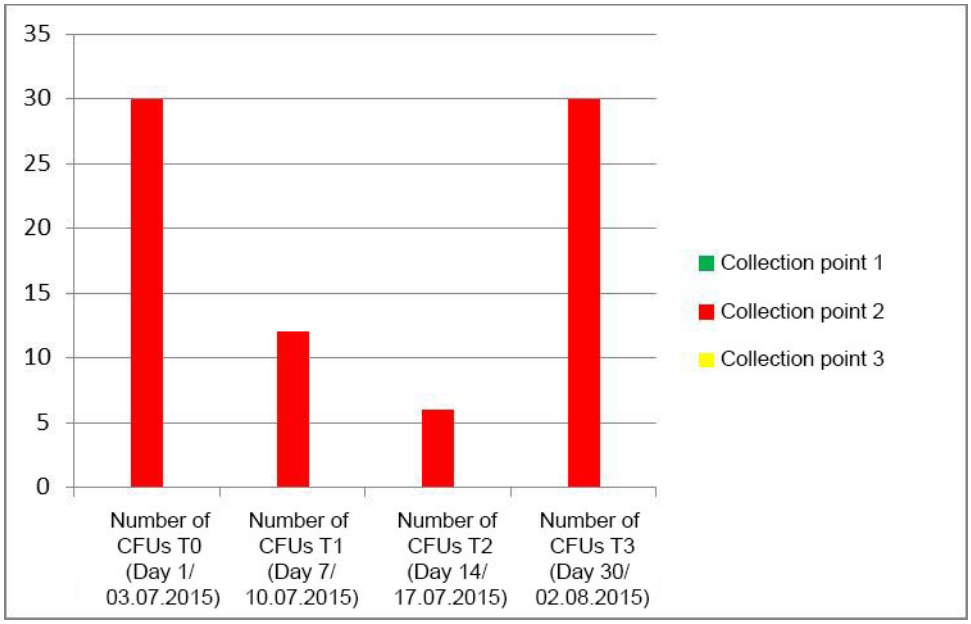


Table 2.7: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	10	5	0	10
2	0	0	0	0
3	15	5	0	10

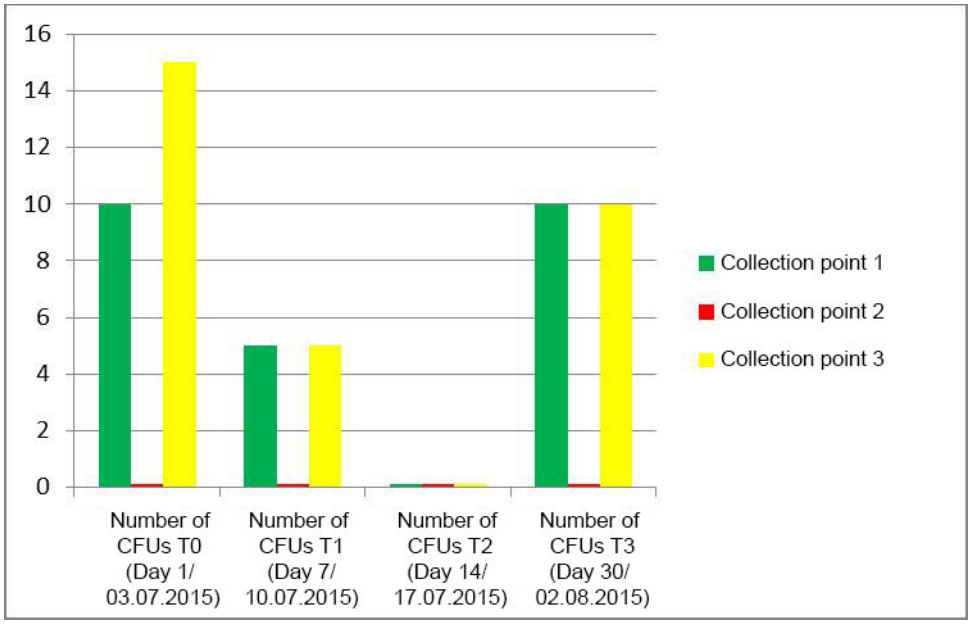


Table 2.8: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 2.9: Number of bacterial CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	385	290	230	320
2	380	230	200	290
3	445	330	295	385

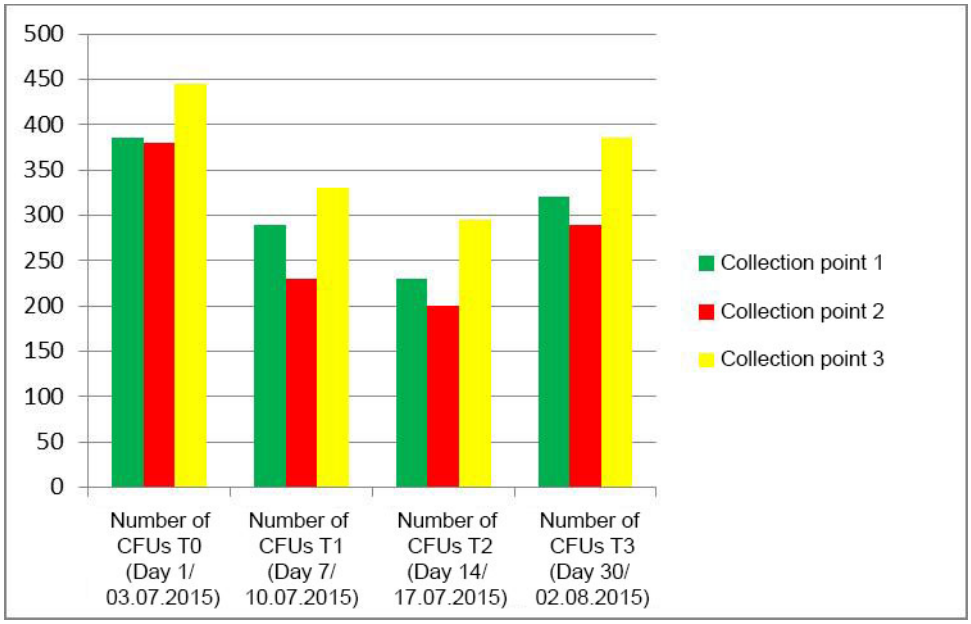


Table 2.10: Number of fungal CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	30	6	4	30
3	-	-	-	-

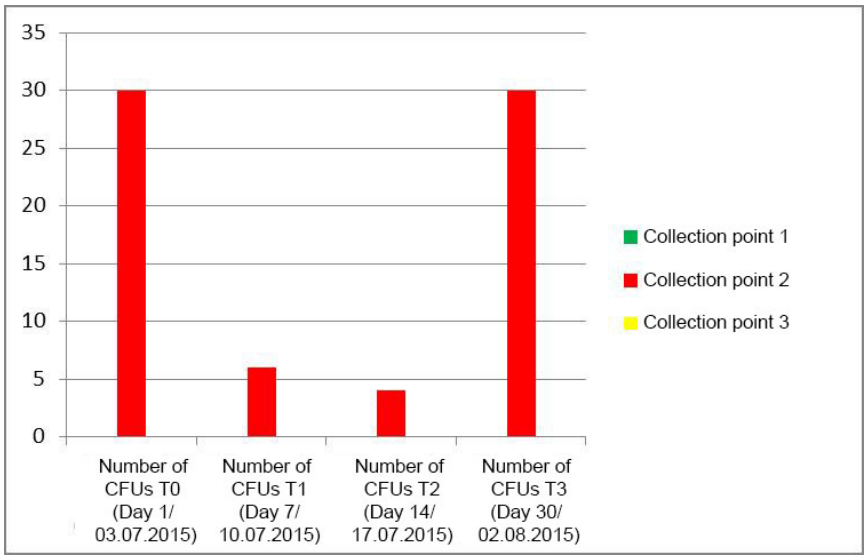


Table 2.11: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	10	5	0	5
2	10	5	0	5
3	10	0	0	10

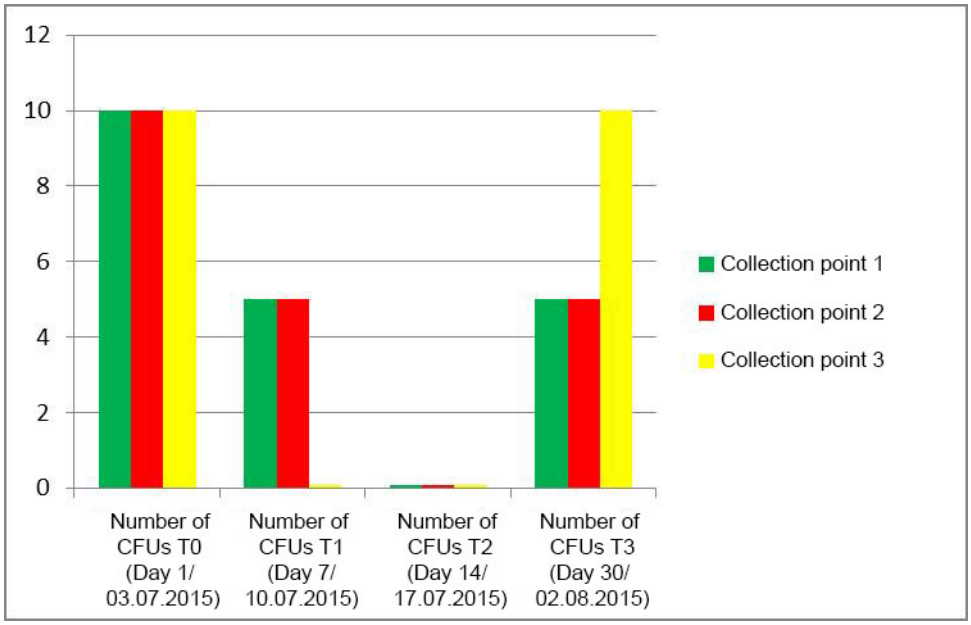


Table 2.12: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 2.13: Number of bacterial CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	245	150	50	165
2	260	145	130	140
3	255	170	135	155

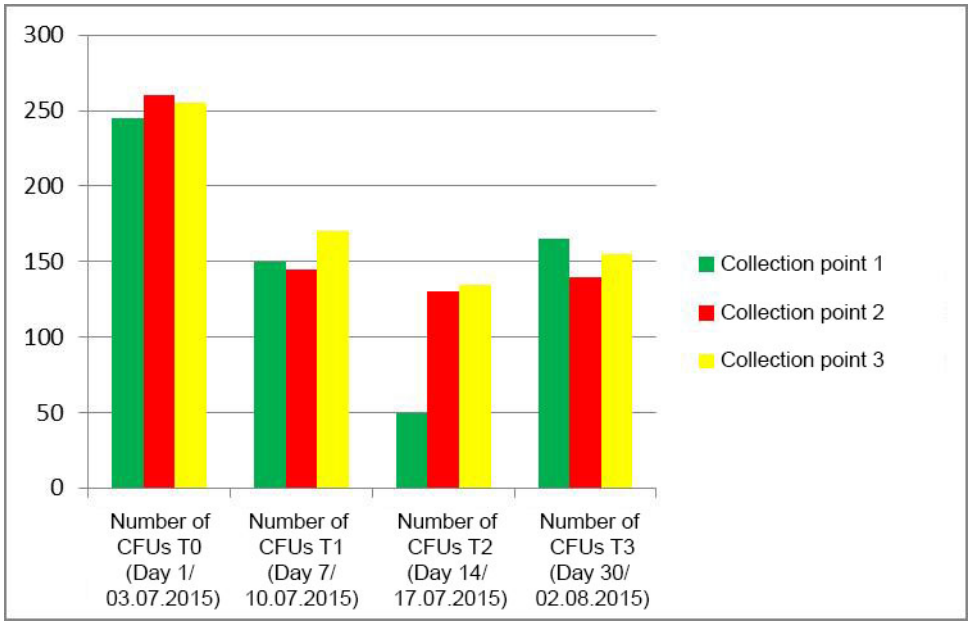


Table 2.14: Number of fungal CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	25	8	4	25
3	-	-	-	-

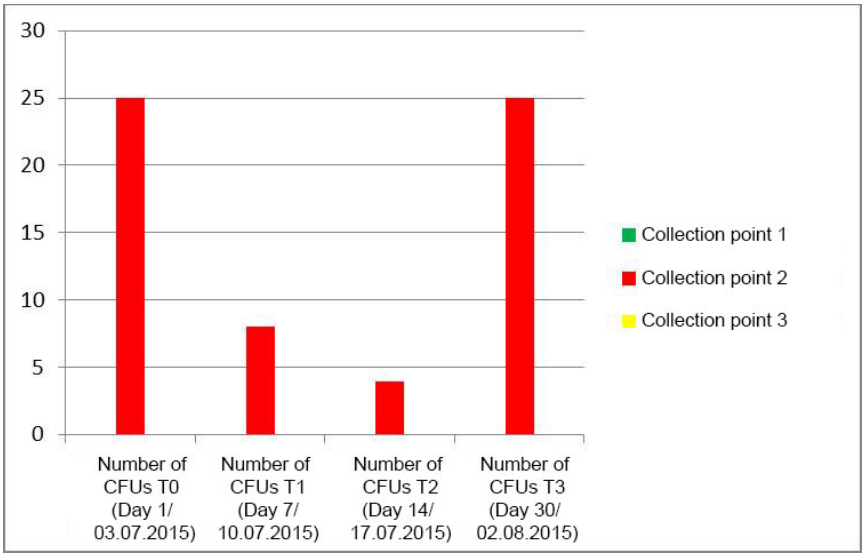


Table 2.15: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	5	0	0	5
2	5	5	0	5
3	5	5	5	5

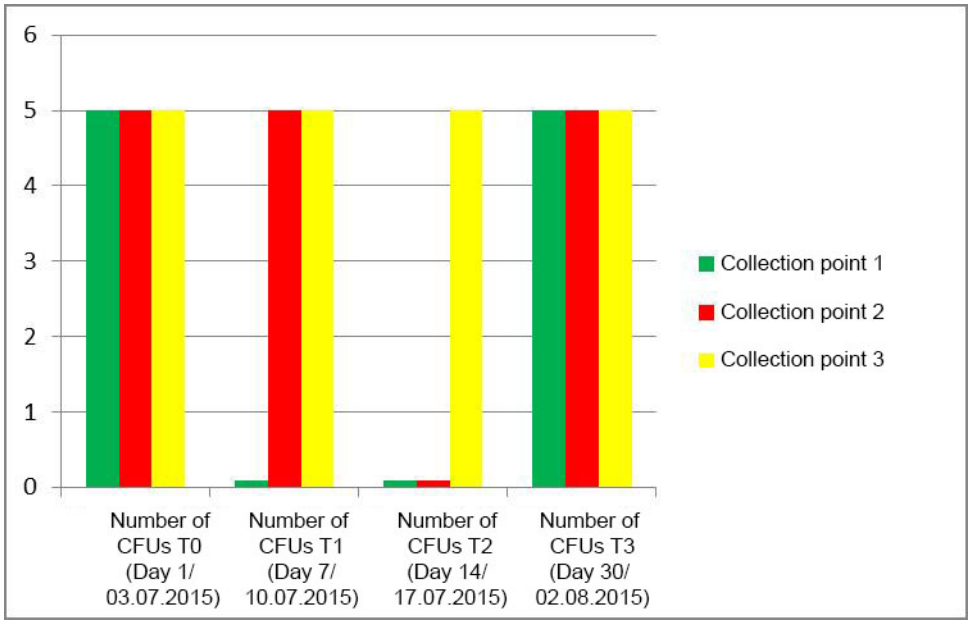


Table 2.16: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 2.17: Number of bacterial CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	165	90	45	135
2	370	190	165	350
3	235	115	100	195

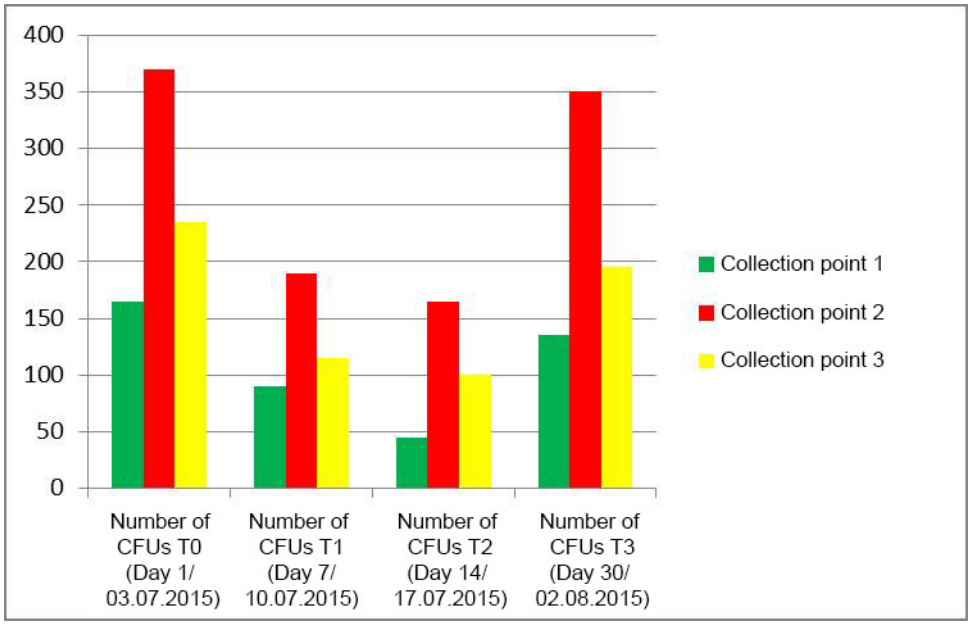


Table 2.18: Number of fungal CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	15	8	4	10
3	-	-	-	-

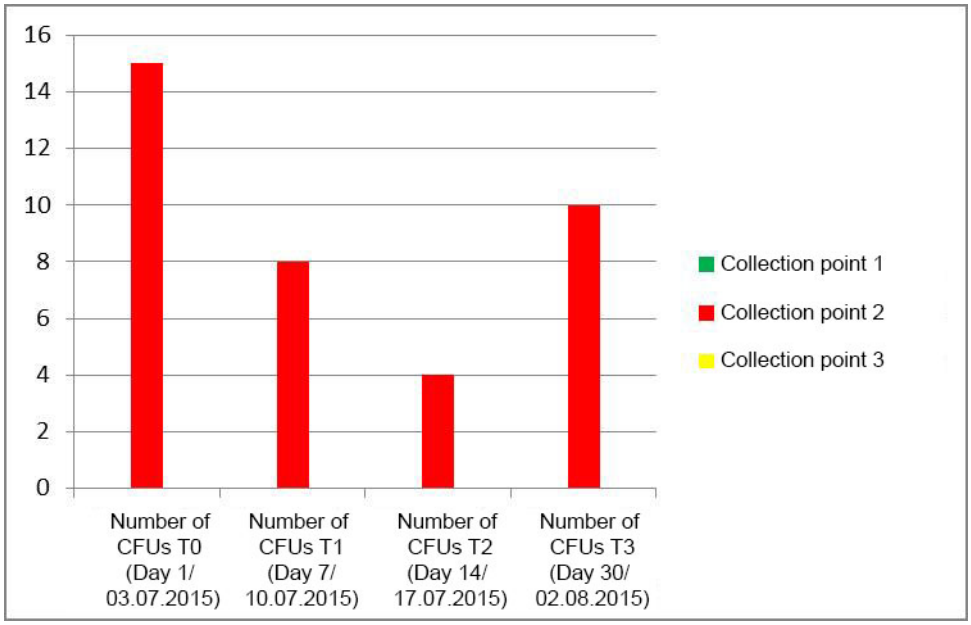


Table 2.19: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	5	0	0	5
2	10	5	0	10
3	10	5	0	5

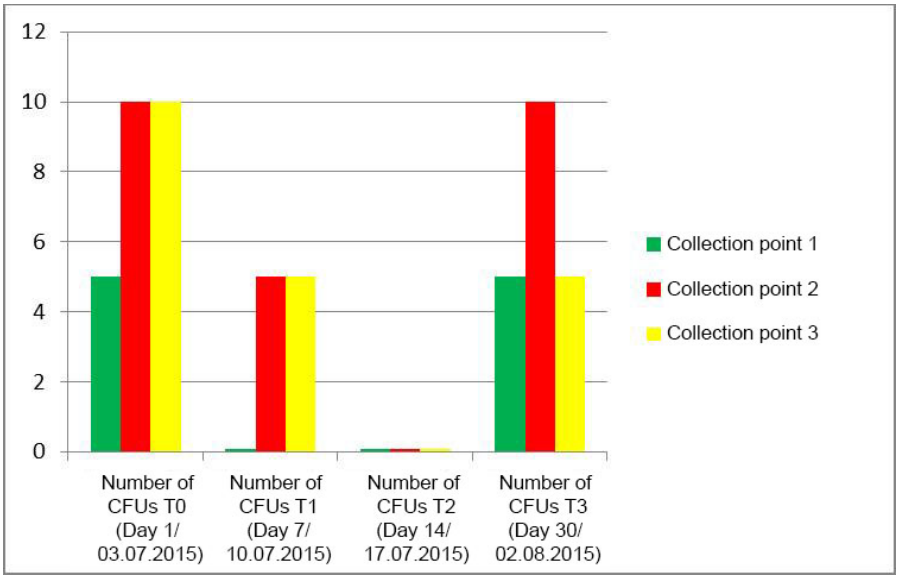


Table 2.20: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 2.21: Number of bacterial CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	245	125	75	185
2	250	160	90	210
3	485	140	115	390

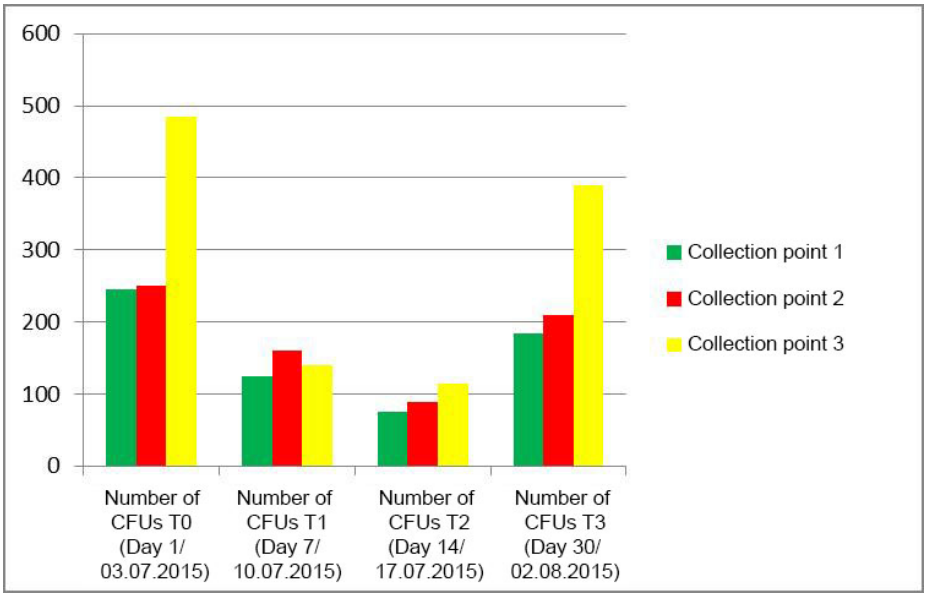


Table 2.22: Number of fungal CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	25	10	8	20
3	-	-	-	-

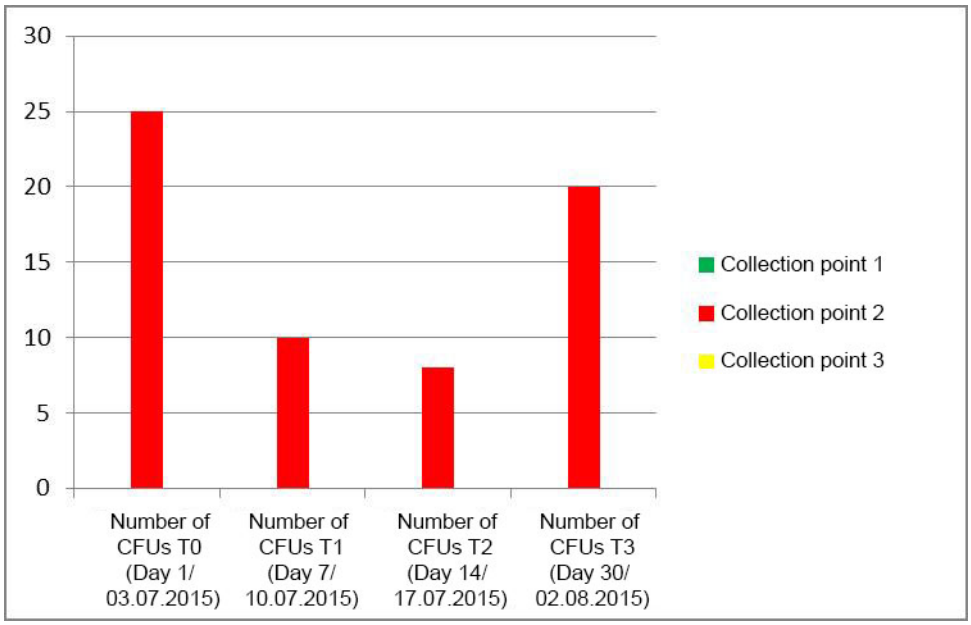


Table 2.23: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	10	5	0	10
2	0	0	0	0
3	5	5	5	5

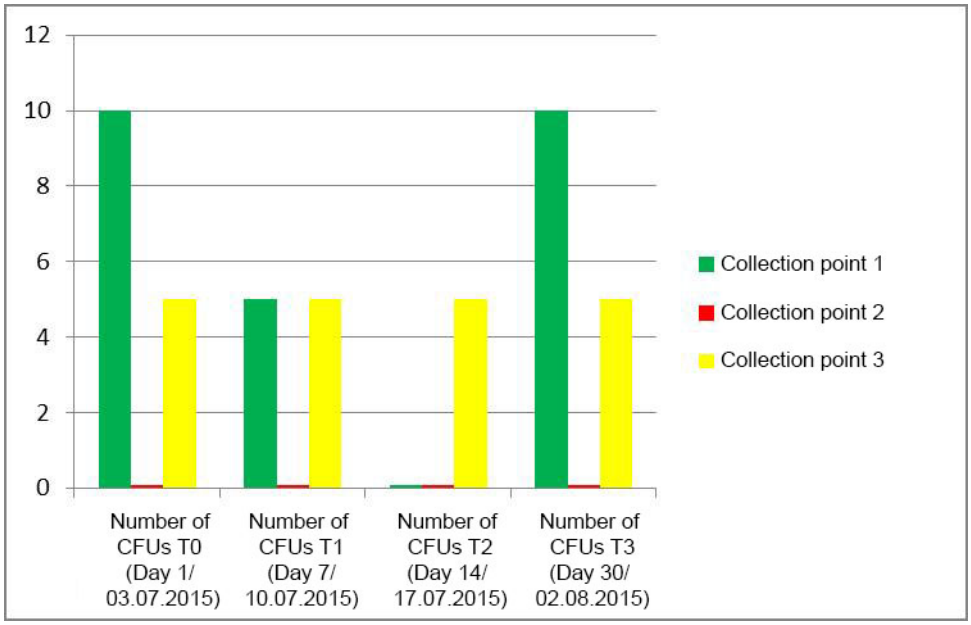


Table 2.24: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 2.25: Number of bacterial CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	520	430	65	410
2	495	440	110	480
3	485	475	110	465

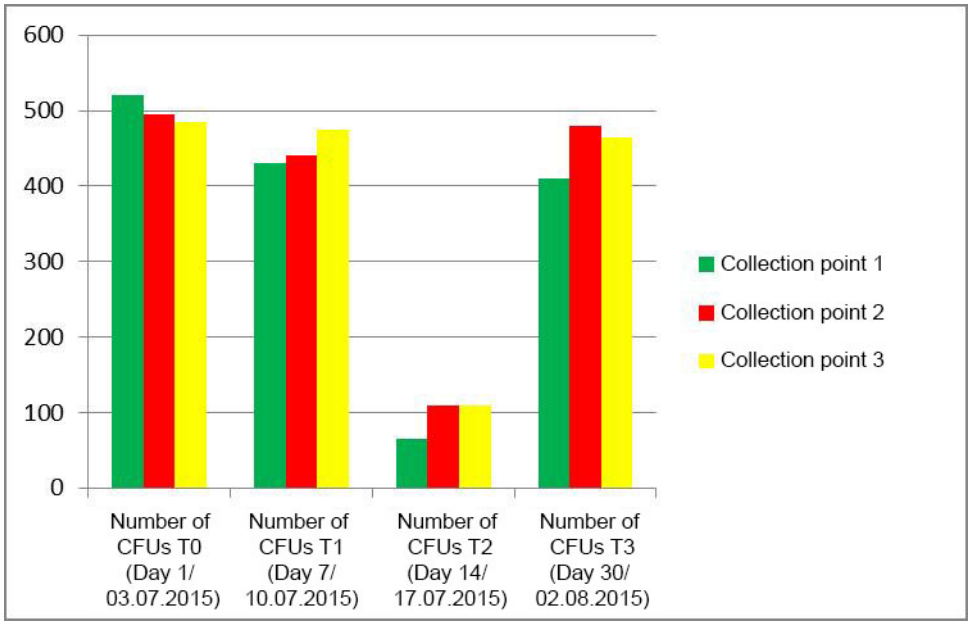


Table 2.26: Number of fungal CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar
s

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	-	-	-	-
2	25	10	6	20
3	-	-	-	-

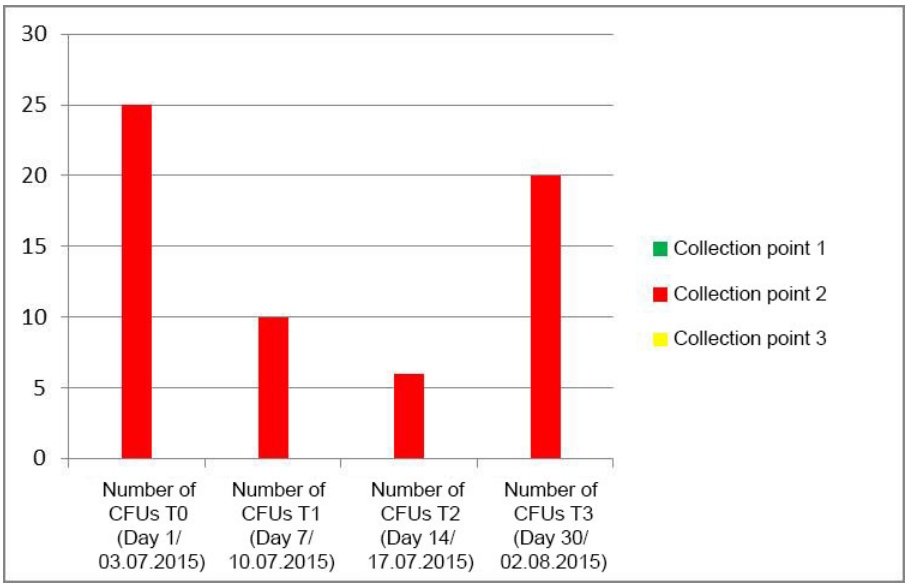


Table 2.27: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	5	0	0	5
2	0	0	0	0
3	0	0	0	0

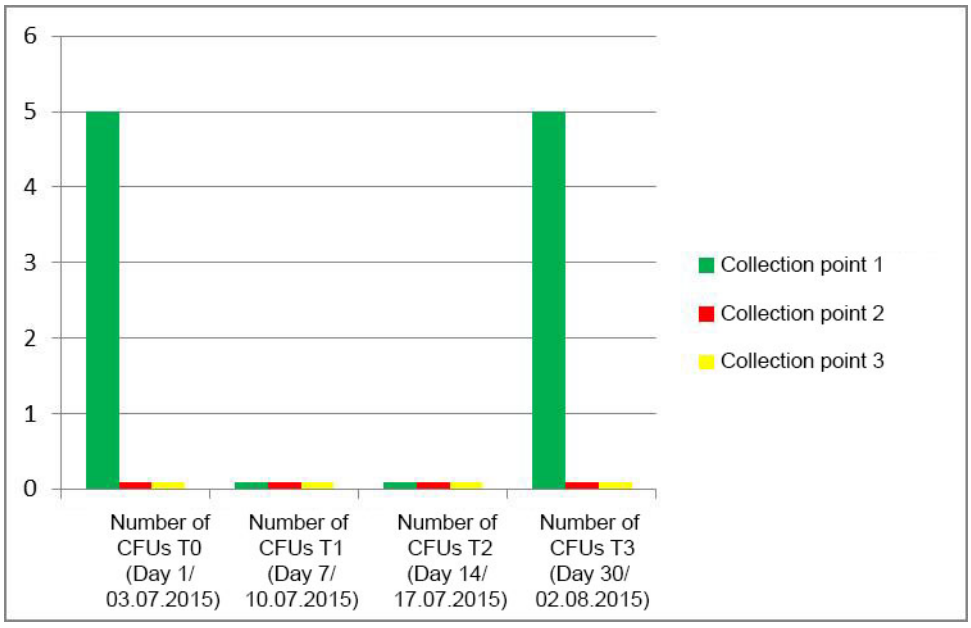


Table 2.28: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 03.07.2015)	Number of CFUs T1 (Day 7/ 10.07.2015)	Number of CFUs T2 (Day 14/ 17.07.2015)	Number of CFUs T3 (Day 30/ 02.08.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Month: 3

Table 3.1: Number of bacterial CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	375	190	145	340
2	310	170	150	295
3	380	210	185	360

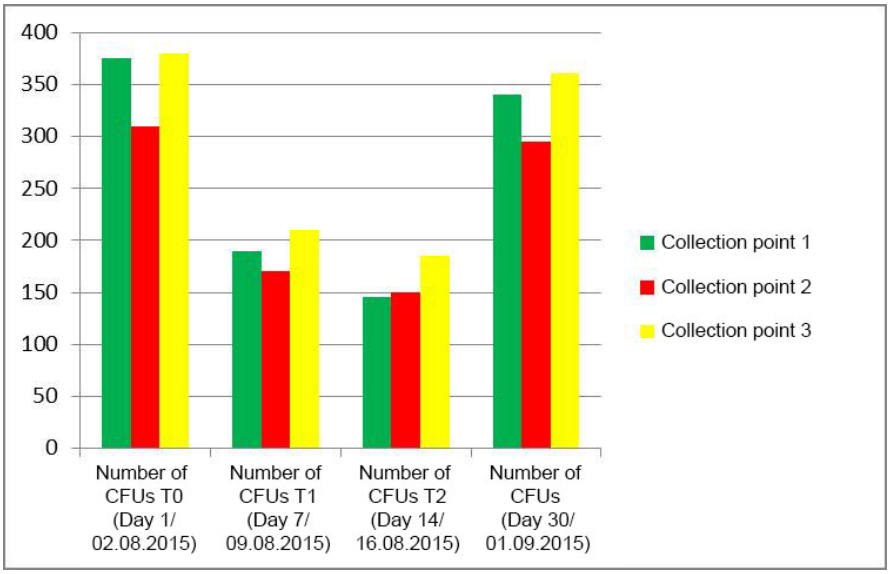


Table 3.2: Number of fungal CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	25	8	6	20
3	-	-	-	-

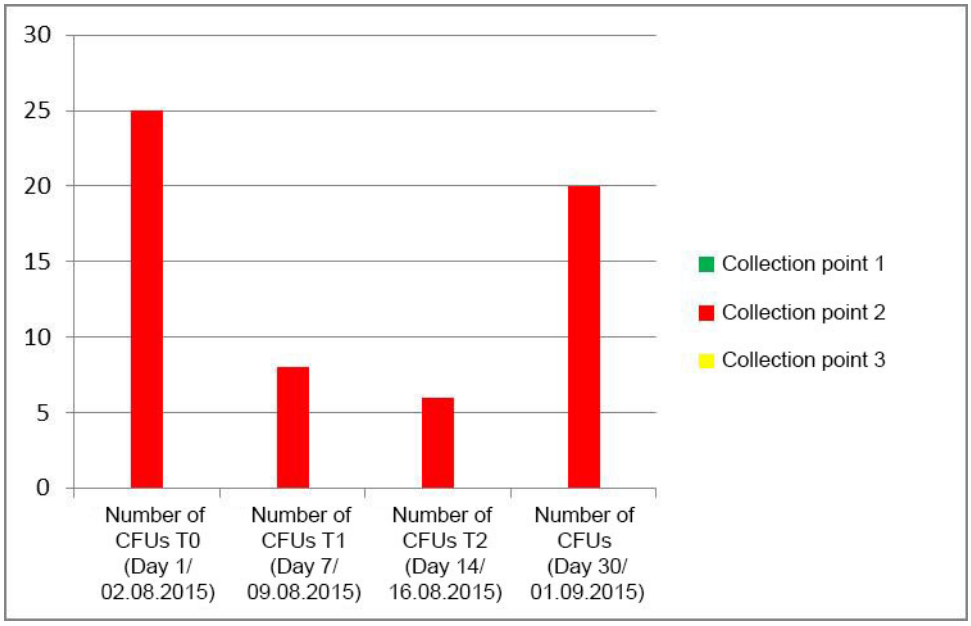


Table 3.3: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	5	5	0	5
2	10	5	0	5
3	5	0	0	0

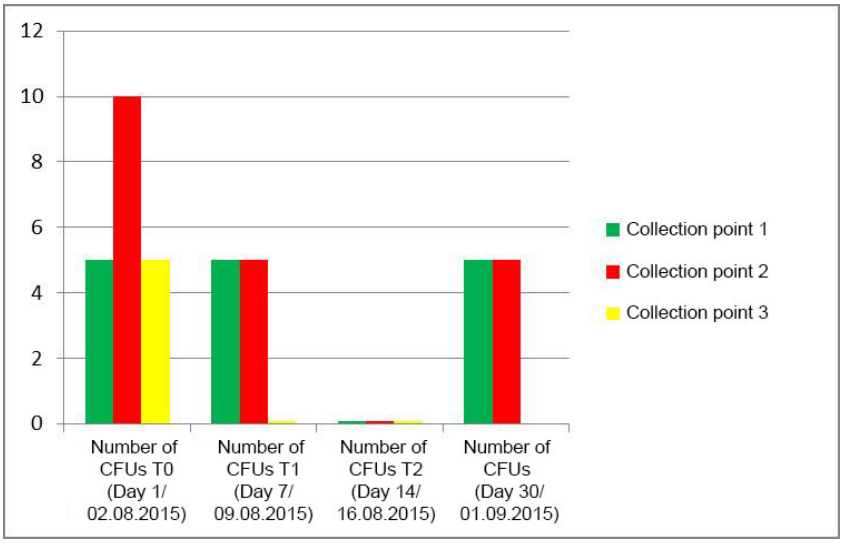


Table 3.4: Number of Streptococcus ß CFUs in the ambient air samples

*Location: C*ardiovascular surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 3.5: Number of bacterial CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	460	190	125	410
2	540	450	330	510
3	580	445	210	560

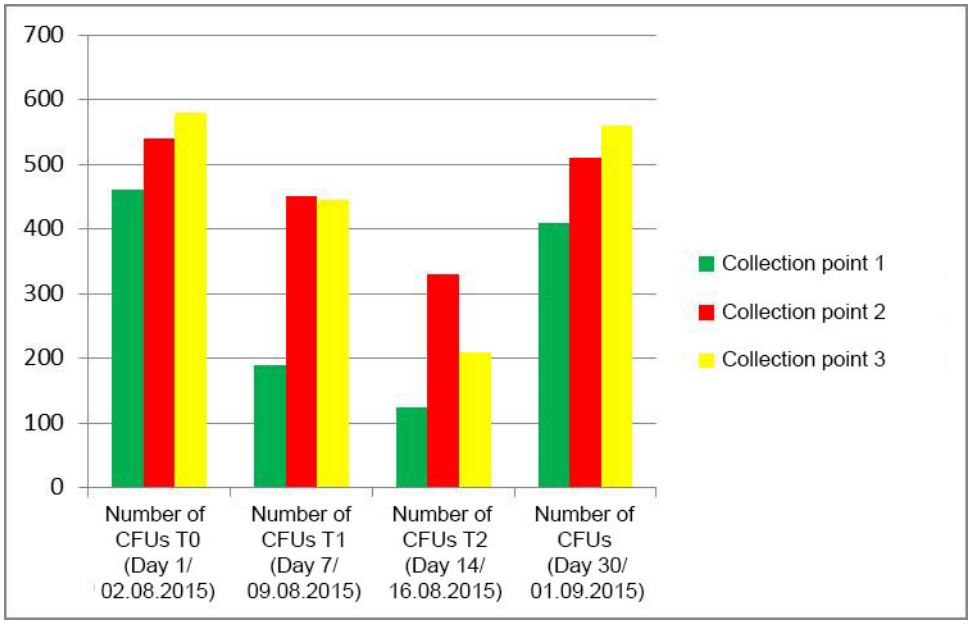


Table 3.6: Number of fungal CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	30	15	6	30
3	-	-	-	-

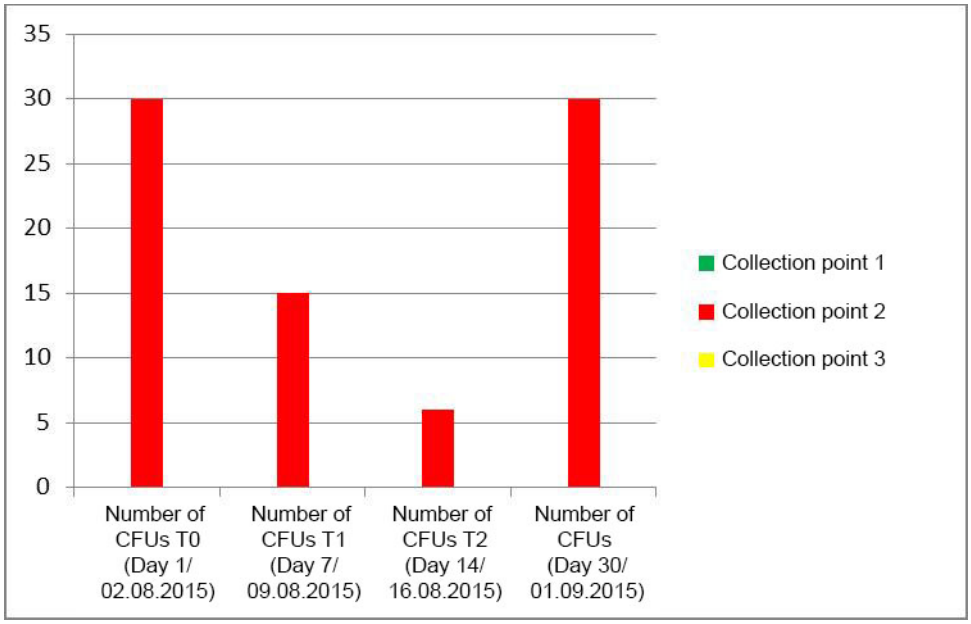


Table 3.7: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	10	5	0	5
2	0	0	0	0
3	10	0	0	5

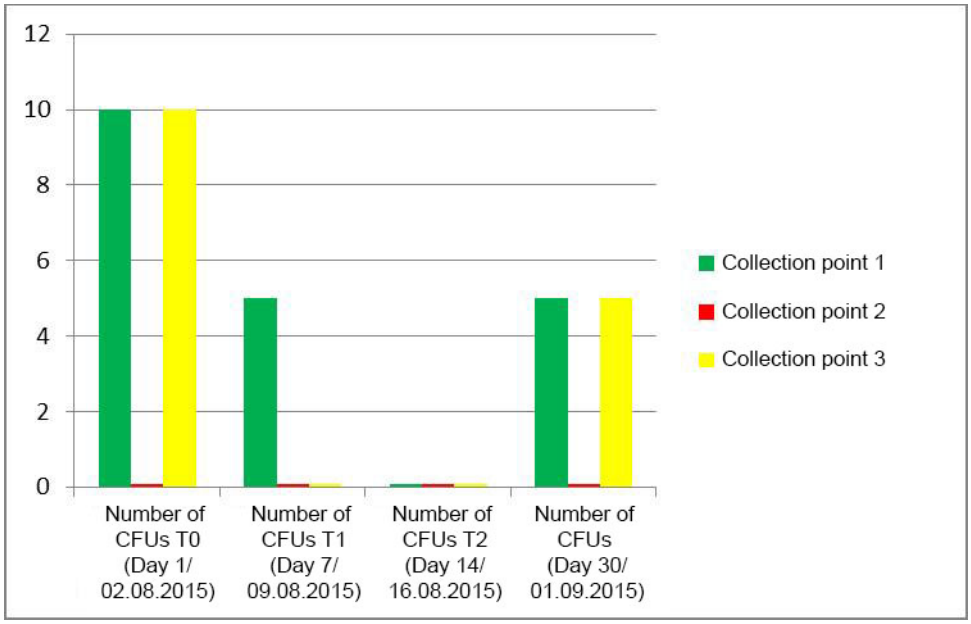


Table 3.8: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: Thoracic surgery department – treatment room
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 3.9: Number of bacterial CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	320	225	160	255
2	290	150	125	210
3	385	270	230	350

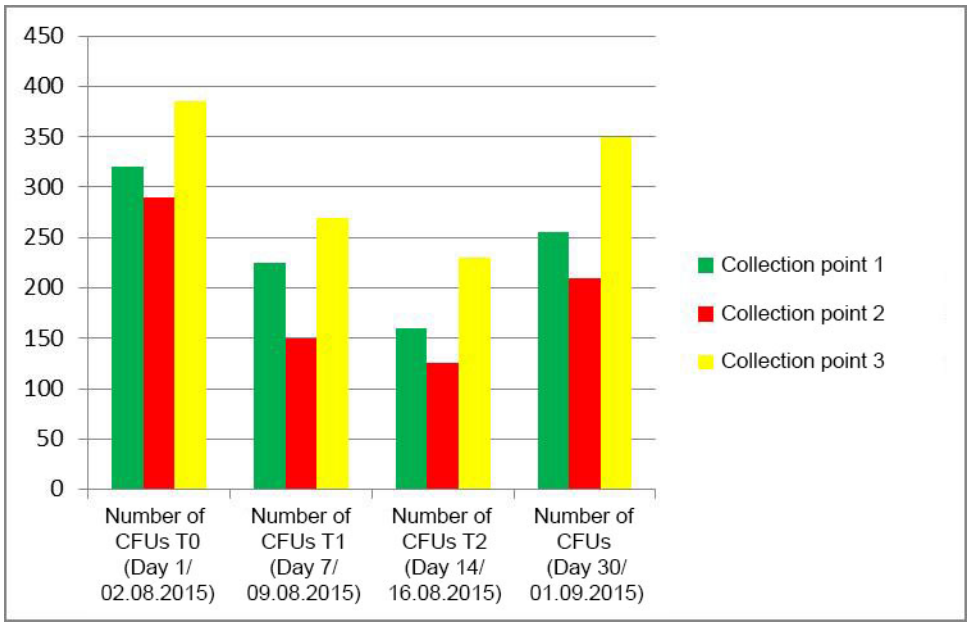


Table 3.10: Number of fungal CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	30	8	4	30
3	-	-	-	-

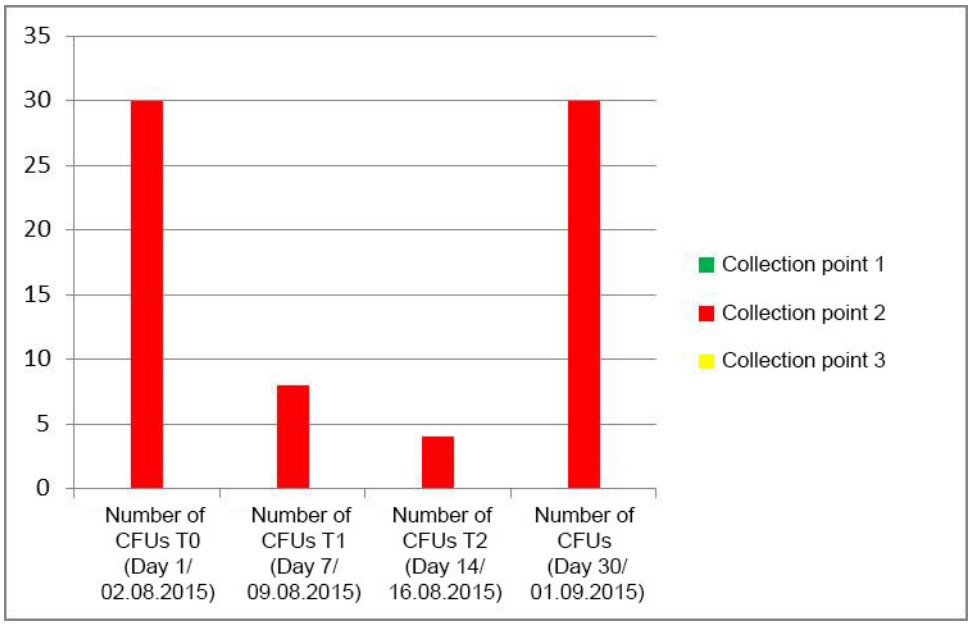


Table 3.11: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	5	0	0	5
2	5	5	0	5
3	10	5	0	5

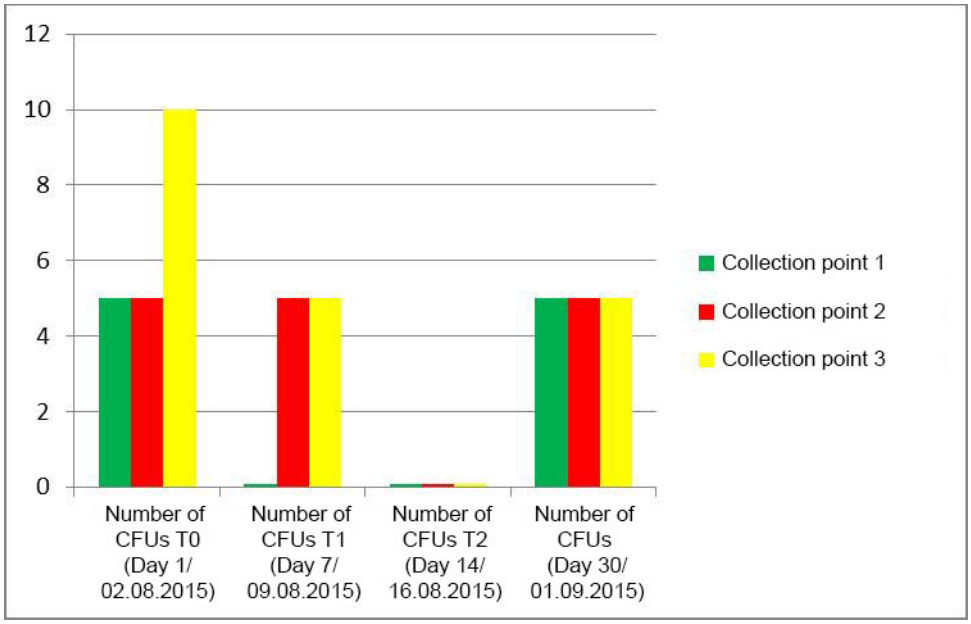


Table 3.12: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department II – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 3.13: Number of bacterial CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	165	100	45	150
2	140	80	65	70
3	155	105	75	100

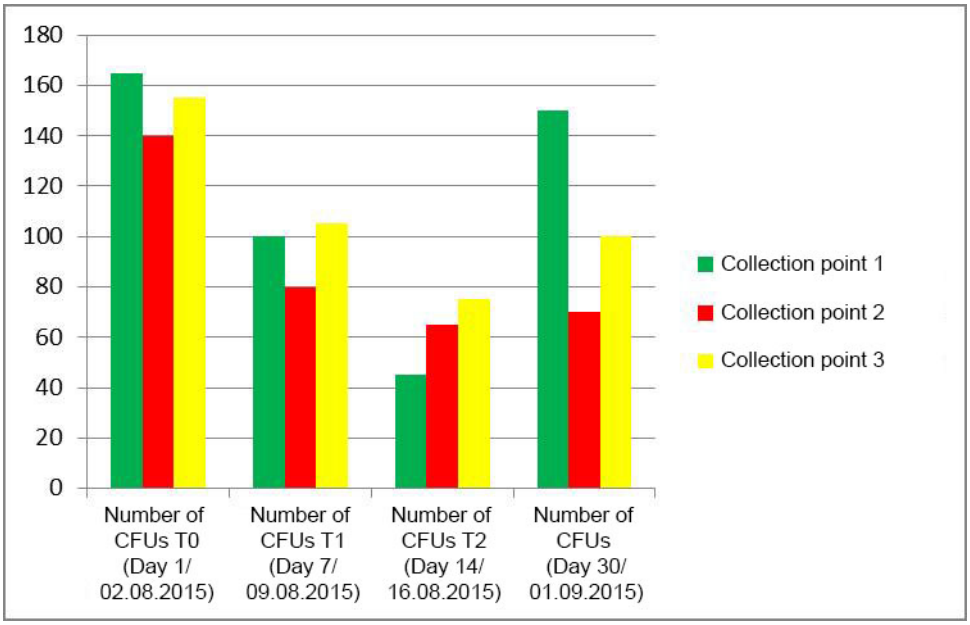


Table 3.14: Number of fungal CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	25	6	4	20
3	-	-	-	-

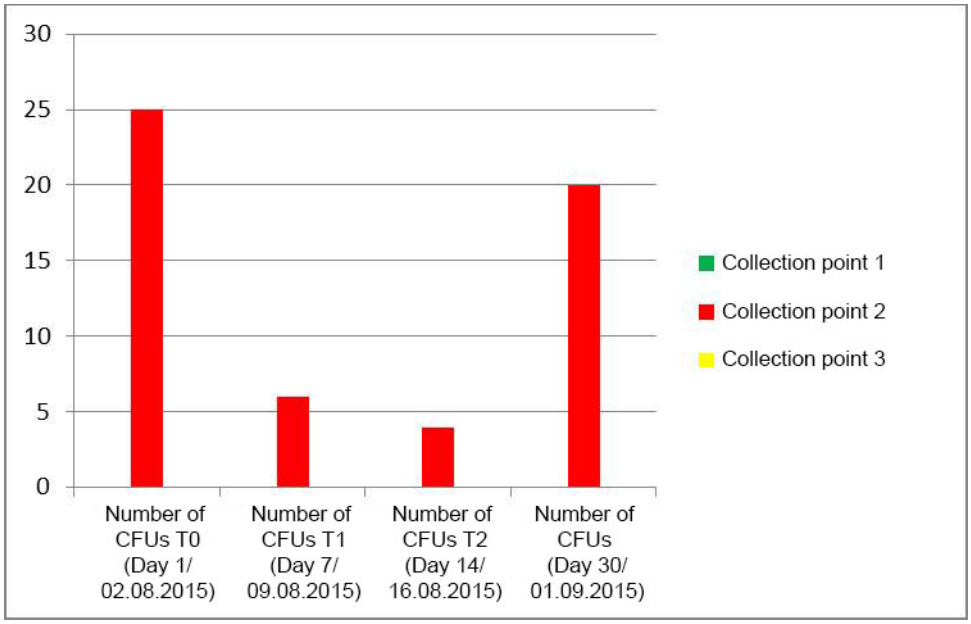


Table 3.15: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	5	0	0	0
2	5	5	0	5
3	5	5	0	5

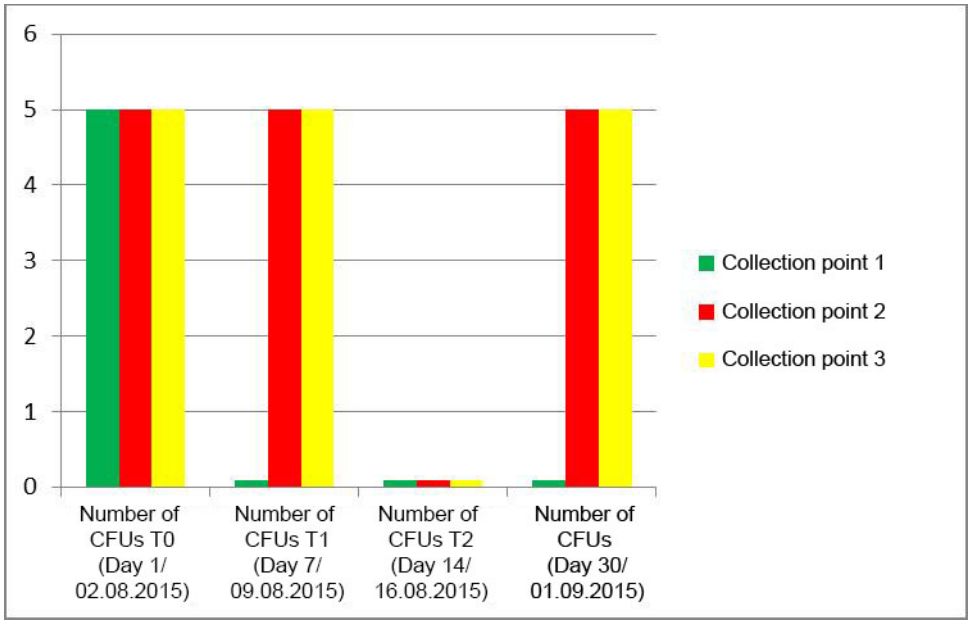


Table 3.16: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department II – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 3.17: Number of bacterial CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	135	80	40	125
2	350	170	155	335
3	195	100	70	150

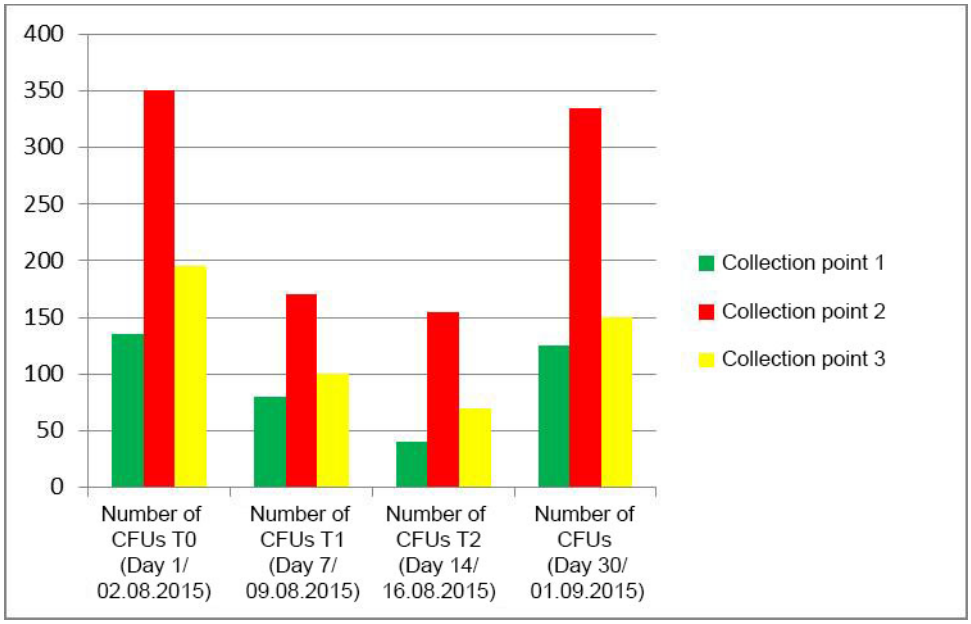


Table 3.18: Number of fungal CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	10	6	4	8
3	-	-	-	-

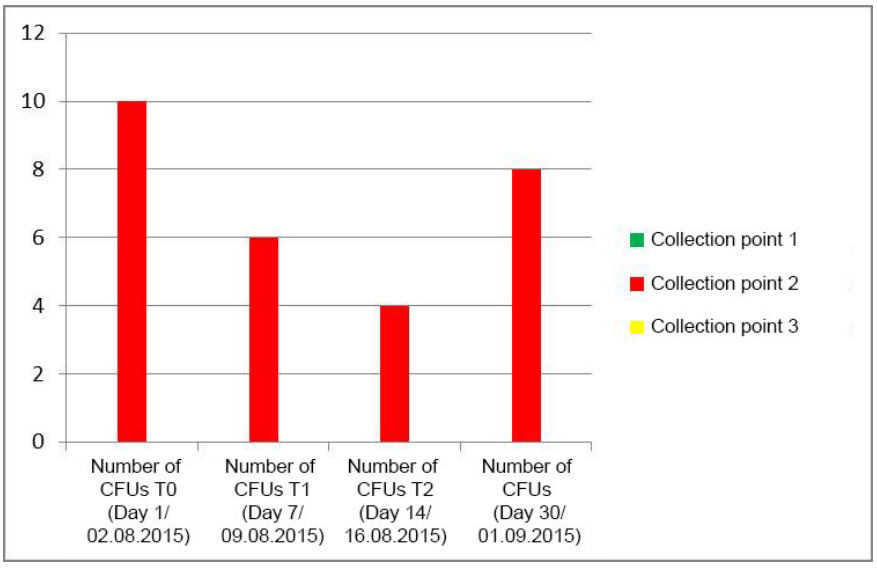


Table 3.19: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	5	0	0	0
2	10	5	0	10
3	5	0	0	5

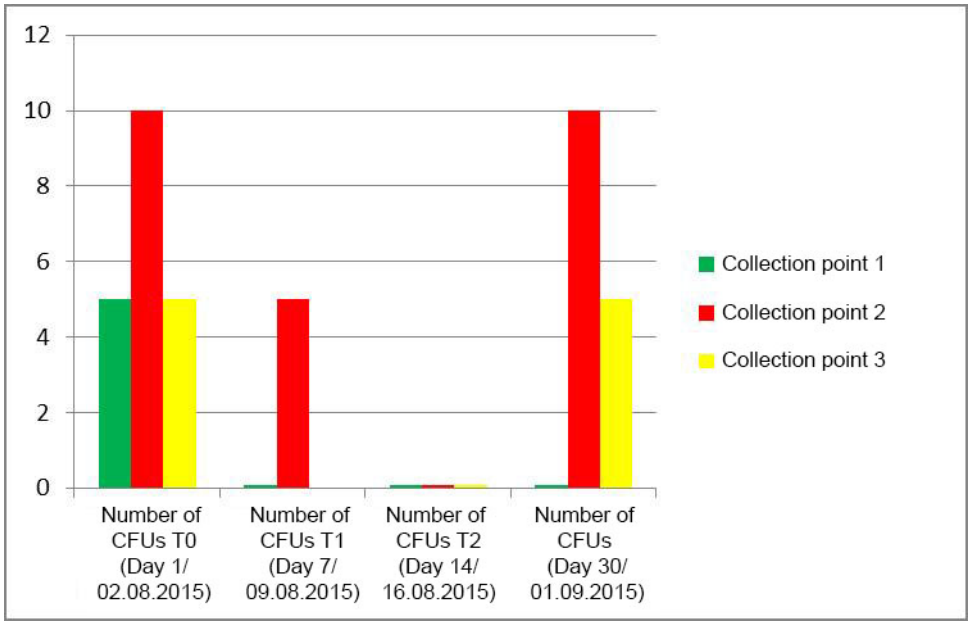


Table 3.20: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department III – wing I
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 3.21: Number of bacterial CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	185	95	60	165
2	210	140	70	195
3	390	140	110	360

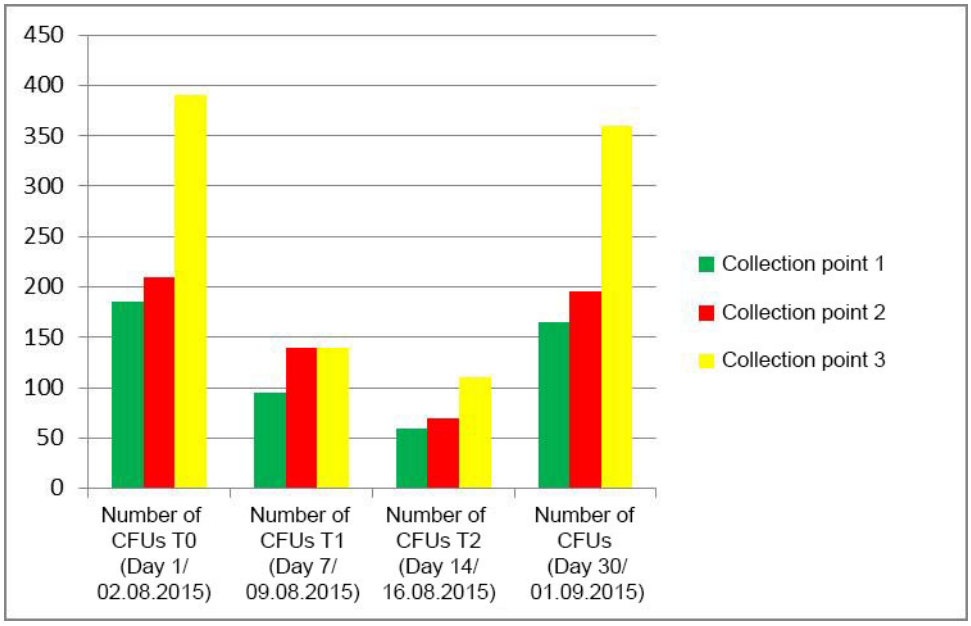


Table 3.22: Number of fungal CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	20	8	6	20
3	-	-	-	-

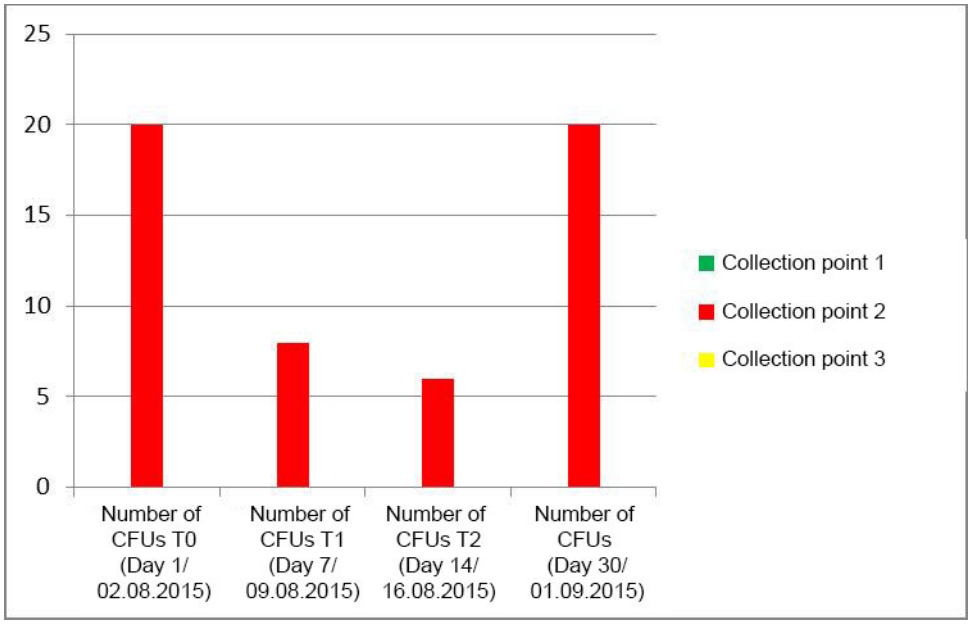


Table 3.23: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	10	5	0	5
2	0	0	0	0
3	5	0	0	5

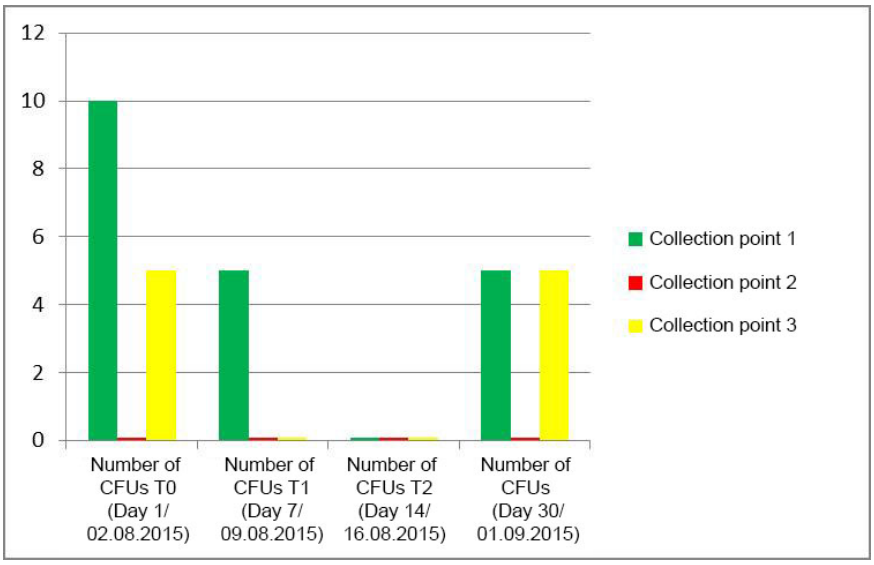


Table 3.24: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department III – wing II
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Table 3.25: Number of bacterial CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Blood agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	410	320	45	300
2	480	430	105	455
3	465	440	100	450

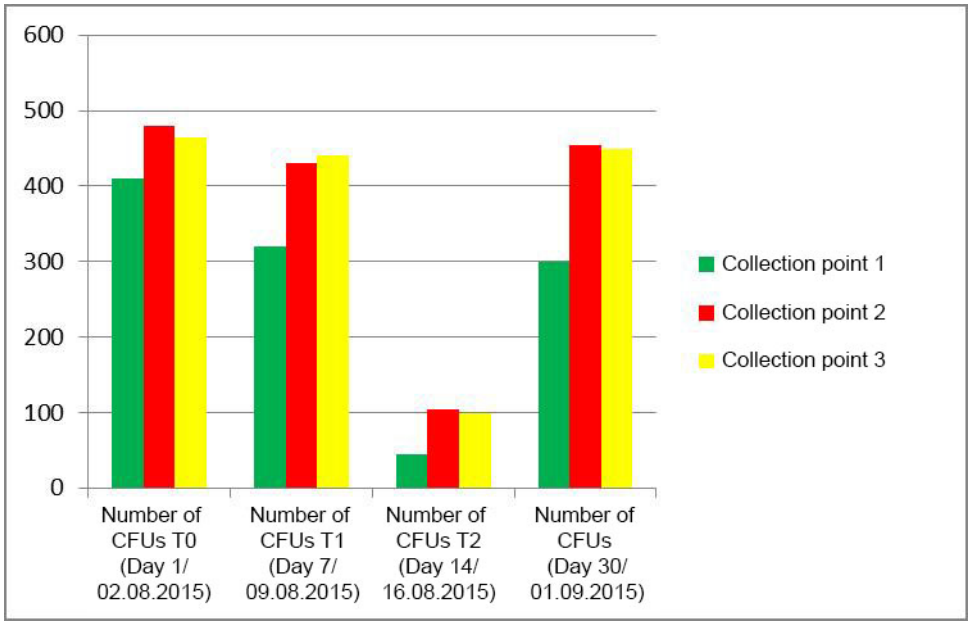


Table 3.26: Number of fungal CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar
s

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	-	-	-	-
2	20	10	4	10
3	-	-	-	-

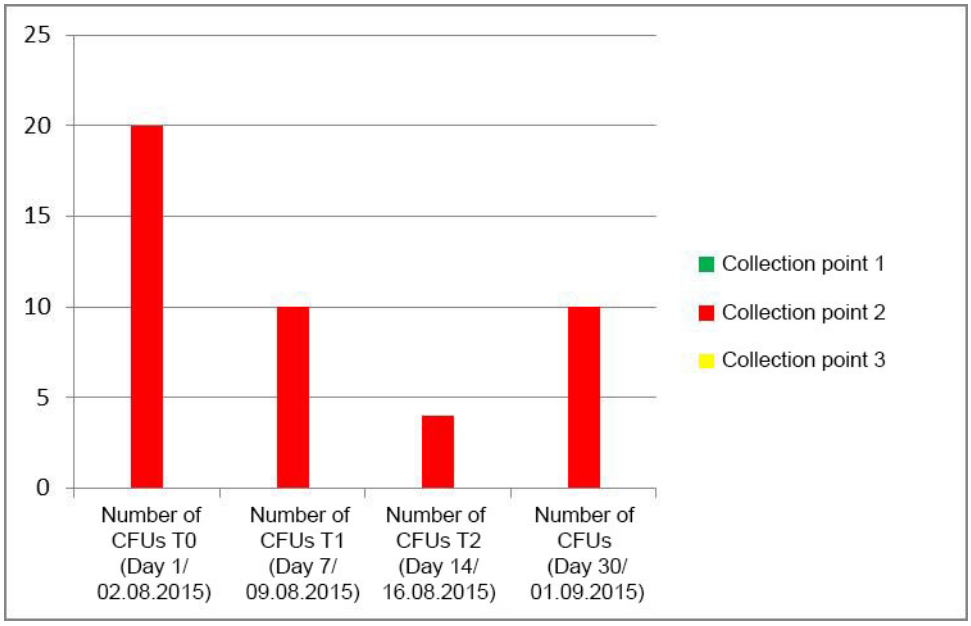


Table 3.27: Number of Staphylococcus (staf.cg+) CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	5	0	0	0
2	0	0	0	0
3	0	0	0	0

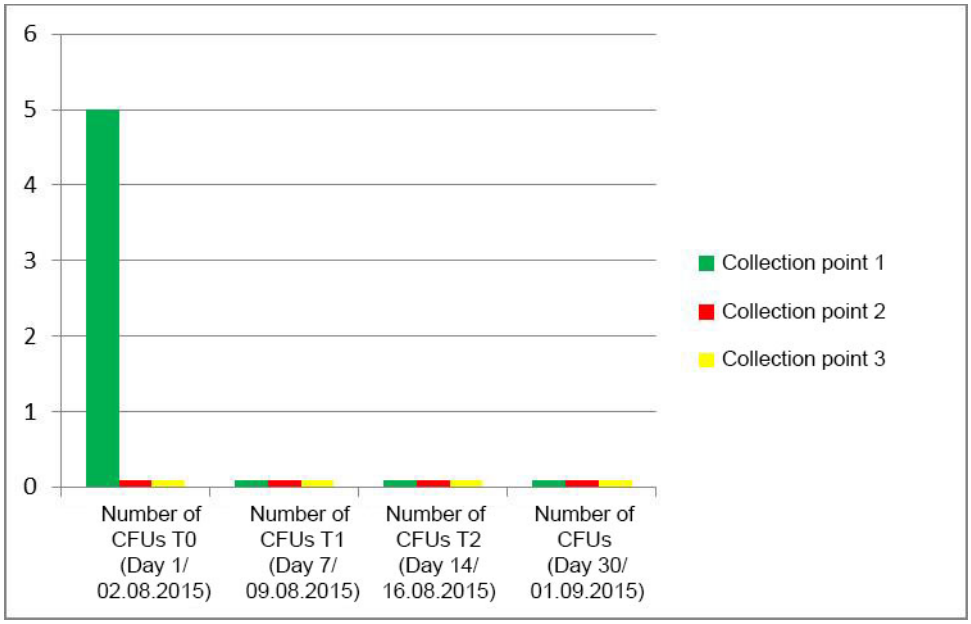


Table 3.28: Number of beta-haemolytic Streptococcus CFUs in the ambient air samples

Location: General surgery department IV – wing IV
Sample collection: filtration method
Culture medium: Sabouraud agar

Collection point	Number of CFUs T0 (Day 1/ 02.08.2015)	Number of CFUs T1 (Day 7/ 09.08.2015)	Number of CFUs T2 (Day 14/ 16.08.2015)	Number of CFUs T3 (Day 30/ 01.09.2015)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

IV. CONCLUSIONS

- In the case of the air samples collected during the period of operation of the system, the number of colony-forming units was up to 87% lower than in the case of air samples collected before the system started to be used for fungi, up to 89% lower for bacteria and up to 100% lower for Staphylococcus (staf.cg+).
- The hospital staff found the NOVAERUS air purification system to be: tolerable, easy to use and safe for patients and staff.
- The NOVAERUS air purification system complements existing measures such as washing the hands and surfaces and purifying the air to combat infections and does not require additional interventions to ensure that it functions without interruption.
- To obtain optimal results, the NOVAERUS air purification system should be used with continuous functioning without interruption under the conditions recommended by the manufacturer. If the NOVAERUS system is used on a long-term basis, infectious diseases will be eliminated, the number of respiratory tract infections will be reduced and the medication costs will be decreased.

Date: 19/10/2015

BUCHAREST EMERGENCY UNIVERSITY HOSPITAL

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