

TRAINING: IMPLEMENTATION OF LABORATORY TESTS FOR MOLECULAR, ANTIGENIC AND SEROLOGICAL DIAGNOSTICS OF SARS COV2 AND REORGANIZATION OF WORK ACTIVITIES

Corinaldesi Claudia¹, Oliverio Rosa Maria², Mitello Lucia³ Macari Marina⁴ Bertolini Marina⁵

¹Organization of Government Health Profession TSLB A.O. San Camillo-Forlanini

²Coordinator of the U.O.C. Microbiology and Virology A.O. San Camillo-Forlanini

³Director of the Department of Health Professions A.O. San Camillo-Forlanini

⁴Director of Healthcare Technical Professions A.O. San Camillo-Forlanini

⁵CDL Didactic Director in Biomedical Laboratory Techniques A.O. San Camillo-Forlanini

KEYWORDS: organization, laboratory technician, training

ABSTRACT

The U.O.C. of Microbiology and Virology experienced a disruption of work activity in the year 2020 due to the COVID 19 emergency ..

On 3 April 2020 the U.O.C. of Microbiology and Virology of the San Camillo-Forlanini Company is included in the network of CORONET laboratories for molecular, antigenic and serological diagnostics of SARS CoV2.

To cope with this emergency it was necessary to reorganize the entire laboratory activity, so as to be able to carry out both the routine activities and those concerning the diagnosis of SARS CoV2, coming not only from the San Camillo-Forlanini company, but also from the territorial ASL, Case di Cira, RSA, Drive in and Walk in.

The complex and unexpected scenario brought out the need to quickly create an organizational model that could guarantee the execution of routine exams, but also provide a diagnostic priority for SARS-Cov2.

The initial phases were difficult on various fronts: in a very short time the laboratory technicians had to learn the most sophisticated molecular techniques indispensable for the diagnosis of SARS CoV2, moreover, it was necessary to face the serious shortage of reagents difficult to find on the market. Europe.

However, the biggest challenge was managing the hundreds of daily samples.

Thanks to the reorganization implemented, the U.O.C. of Microbiology and Virology is able to carry out surveys on increasingly large population samples, in compliance with regional and national guidelines.

INTRODUCTION

On 11 March 2020, WHO Director-General Tedros Adhanom Ghebreyesus defined the spread of Covid-19 no longer an epidemic confined to certain geographical areas, but a pandemic spread throughout the planet.

The Lazio Region on January 26, 2020 issues the indications for the management and surveillance of suspected cases for SARS CoV2

In the indications of the Region are defined

- the arrangements for handling suspicious cases,
- specific laboratory tests for the identification of SARS CoV2,
- the reference laboratories,
- the flow of notification to the competent authorities necessary for the rapid identification of subjects affected by COVID 19

On 3 April 2020 the U.O.C. of Microbiology and Virology of the San Camillo-Forlanini Company is included in the network of CORONET laboratories for molecular, antigenic and serological diagnostics of SARS CoV2.

The complex and unexpected scenario has led to the

need to rapidly implement an organizational model that could, on the one hand, guarantee routine examinations, and on the other provide a diagnostic priority for SARS-Cov2.

The organizational change involved the implementation of laboratory tests for the molecular, antigenic and serological diagnostics of SARS CoV2, the training of personnel in new methods, the adequate management of Human Resources, the reorganization of spaces with dedicated paths for SARS CoV2, staff recruitment.

The biggest challenge faced was the management of hundreds of daily samples for the identification of SARS Cov2 coming not only from the company Operating Units, but from local ASLs, Nursing Homes, RSAs, Drive in and Walk in territorial

The initial phases were difficult on various fronts as in a very short time the technicians had to learn the most sophisticated molecular techniques indispensable for the diagnosis of SARS Cov2, it was necessary to face the serious shortage of reagents difficult to find on the market throughout Europe.

During the Pandemic, SARS-CoV2 molecular diag-

nostics has been constantly evolving, leading to the need to review most of the protocols in use and workflows, introducing new methods, mostly of molecular biology, to provide the clinician with a report more and more accurate, complete and rapid. The evolution of technology in SARS-CoV2 diagnostics and organizational well-being have made a training course necessary.

TARGET

The training project was created to improve the performance of professionals, aimed at developing new skills, necessary to standardize shared procedures and protocols.

At the end of the course all participants will be able to use specific procedures and protocols, acquire theoretical and practical manual skills on the new molecular, antigenic and serological biology diagnostics for SARS-CoV2 research.

■ MATERIALS AND METHODS

The location of the course was the “San Camillo-Forlanini” Hospital, Malpighi Pavilion - U.O.C. Microbiology and Virology.

The course is intended for number 18 TSLB of the U.O.C. Microbiology and Virology of the San Camillo-Forlanini Hospital

The training course took place in a single edition lasting three months, every Monday of the week for a duration of two hours, starting on April 6, 2020 and ending June 22, 2020. two in number. The teaching methodology used was training in the field with technical demonstrations and the direct execution of the participants in the practical and technical activities.

The didactic material provided was the specific protocols and procedures on molecular, antigenic and serological diagnostics Participants' performance will be evaluated according to a predefined grid

■ RESULTS AND CONCLUSIONS

The personnel involved actively participated by preparing themselves proactively. The results obtained resulted in greater motivation and involvement of staff during work, greater autonomy in the work organization, in addition, there was an improvement in interpersonal skills and an improvement in skills. Furthermore, within one month of the end of the course, 100% of the participating TSLBs were able to perform all the techniques of molecular, serological and antigenic diagnostics for the detection of SARS-CoV2.

The methods implemented were:

- molecular for research of the Spike, N, RdPr and Orf1 genes
- antigenic in chemiluminescence for antigenic research N (nucleus capsid)
- serological chemiluminescence for the detection of anti Spike and anti N IgG

The pandemic experience has imposed the use of good practices and innovations that will certainly be a wealth of experience useful for the future

The occurrence of all these events related to a SARS-CoV2 pandemic, an etiological agent unknown until then, has taught us that it is essential not to be taken by surprise by this type of situation, for these reasons, we must implement dedicated organizational plans. to emerging healthcare systems such as these, which allow us to face new pandemics with greater pandemic.

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