UNIVERSIDAD AUTÓNOMADENUEVO LEÓN
SCHOOL OF MEDICINE
Ba CLINICAL CHEMISTRY

SYNTHETIC PROGRAM.

1.Identification data:	
•Institution	Universidad Autónoma de Nuevo León
•College	School of Medicine
•Education program	Clinical Chemistry
•Learning unit	Molecular epidemiology of sentinel microorganisms
•Total hours of classroom, theory and practice	60
•Frequency in classroom per week	3 hours
•Total extra hours (Outside classroom)	30
•Modality	Schooled
•Academic period	Nineth semester
•Type of learnig unit	Optative
•Curricular area	ACFP-F
•UANL Credits	3
•Date of elaboration	10/10/2018
•Date of actualization	
•Responsible (s) for the design and actualization	Dra. Elvira Garza González, Dra. Samantha Maribel Flores Treviño, Dra. Paola Bocanegra Ibarias, Dra. Ana María Rivas Estilla

2.Purpose(s):

The purpose of this Learning Unit (UA) is to encourage the student to develop skills that facilitate the detection and molecular epidemiological study of microorganisms that cause infections associated with health care with greater frequency and epidemics, also known as Sentinel Species.

The application of the skills acquired in this UA will allow the student to contribute to infection control both in the hospital and in the community. Regarding general skills, during this UA the student will be able to use cutting-edge research techniques, identify and typify sentinel microorganisms, identify the best methodologies, and recognize their importance in the hospital environment and the presence of outbreaks in the community. In addition, it practices the values of professional ethics and integrity by managing the confidentiality of the results obtained in the Laboratory with responsibility and honesty. You will be able to resolve personal conflicts to make an appropriate decision on the correct methodology for the epidemiological surveillance of sentinel microorganisms. During the UA the student also develops specific skills as he executes procedures for obtaining, handling, storing, and analyzing samples to contribute to reliable clinical diagnosis and outbreak detection. Interprets analysis results based on established criteria that allow timely and relevant decisions to be made in clinical diagnosis.

The UA of Molecular Epidemiology of sentinel microorganisms is located in the ninth semester of the Academic Program of Clinical Chemist Biologist, for its development it uses the skills acquired in the Learning Units of Molecular Biology, when applying the fundamentals of molecular techniques for the analysis of material genetic of bacteria, with Medical Bacteriology by using bacteria identification methods and Diagnostic Medical Microbiology by applying knowledge about the medical importance of bacteria, as well as the handling of samples in the clinical laboratory.

3. Competence of the graduate profile

- **General skills contributing to this learning unit**

Instrumental skills:

8. To use traditional and cutting-edge research methods and techniques for the development of their academic work, the exercise of their profession and the generation of knowledge.

Personal and social interaction skills:

11. Practice the values promoted by UANL: truth, equity, honesty, freedom, solidarity, respect for life and others, peace, respect for nature, integrity, ethical behavior and justice, in their personal and professional spheres to contribute to building a sustainable society.

Integrative skills:

14. To resolve personal and social conflicts, in accordance with specific techniques in the academic field and in their profession for appropriate decision-making.

- **Specific skills of the graduate profile that contributes to the learning unit**

2. Execute physical, chemical and biological procedures in the collection, handling, storage and analysis of samples to contribute to a reliable clinical, toxicological, chemical, food, forensic and environmental diagnosis.

6. Interpret the results of analyses based on established criteria that allow timely and pertinent decision-making in clinical, toxicological, chemical, food, forensic, and environmental diagnosis.

4. Factors to consider for evaluating the learning unit

- Written evaluations
- Weighted activities
- Course integrative project/product

5. Integrative learning Product:

Written evaluation of situations posed by the teacher regarding the application of microbial typing techniques for infection control.

6. Sources of support and consultation (bibliography, hemerography, electronic sources):

Garza González, E., Maldonado Garza, H., Flores Treviño S., Bocanegra Ibarias P., Gutiérrez Delgado E., Vera Cabrera, L, Camacho Ortíz, A. Rivas Estilla AM. (2023) Manual de métodos moleculares para la detección de especies centinela y de vigilancia epidemiológica. (2ª edición) Facultad de Medicina, UANL.

Persing, D. H. (2010) Molecular Microbiology: Diagnostic Principles and Practice, (second edition). USA: ASM press. ISBN-13:978-1555814977

Versalovic, J. (2011) Manual of Clinical Microbiology. (10 th edition). USA: ASM press. ISBN: 978-1-55581-463-2