

Technical Report

Research Methods Development and Epidemiological Training Division

Historic Series 2010 – 2021

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METHODS DIVISION

Established at the Epidemiological Surveillance Center "Prof. Alexandre Vranjac" (ESC) in 1985, through State Decree No. 24,565, the Research Methods Development and Epidemiological Training Division has the mission of promoting, coordinating, executing, and evaluating research and training in epidemiology and epidemiological surveillance for professionals who work in the Unified Health System (SUS) of São Paulo.

Among its attributions are the planning, coordination, advising, and instrumentalization of the professionals who work in health surveillance, and the advising in educational and research actions in epidemiological surveillance, health surveillance, and collective health.

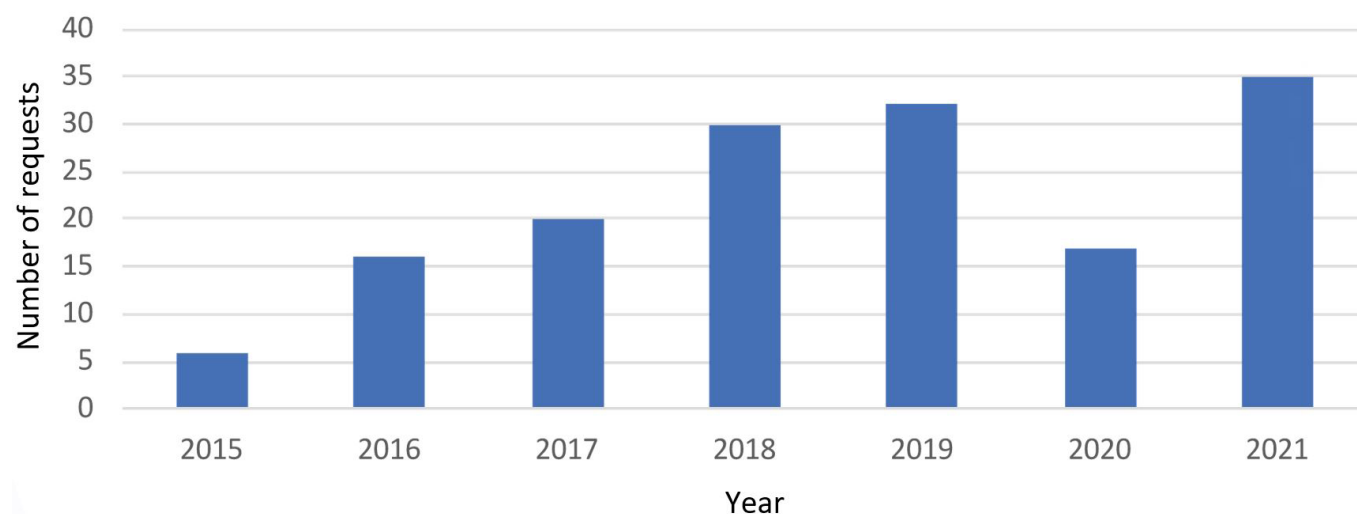
Currently the Division's staff is composed of Inês Kazue Koizumi (physician), Marilda Aparecida Kersul de Brito Milagres (physician), Marcia Aparecida Rodrigues da Silva (nursing assistant), and Sandra Sayuri Nagaki (director).

RESEARCH - DATA CESSION

The request for databases of the information systems managed by the ESC follows an established flow, with forwarding to this division the request letter, research project, term of commitment, and consubstantiated opinion by the research ethics committee. The document checking and the project analysis are performed, followed by the manifestation of the technical area corresponding to the disease/injury as to the relevance and the assent in the data cession. The report then goes to ESC's technical directorate for consideration and manifestation as to whether or not the request will be met.

After approval, the request is forwarded to the Center for Information in Epidemiological Surveillance (Nive), or the technical area responsible for the disease/injury, so that the databases are forwarded to the requester. The term of commitment for the use of these bases was established in 2015 and summed up, until the year 2021, about 150 requests (Graph 1).

Graph 1. Number of requests for research databases, per year, as of the establishment of the term of commitment.*



Source: Methods Division/ESC|DCC/SHD-SP. *Data extracted starting in 2015.

The requests in this regard are diverse, including several diseases (Table 1), some of which have a higher number of requests due to periods of outbreaks and/or emerging diseases, such as covid-19, which arrived in Brazil in the beginning of 2020. A new respiratory disease caused by a type of coronavirus still unknown to science in that moment, covid-19 has raised many questions regarding its epidemiology. Its rapid expansion and its serious consequences have caused the scientific community to speak out in search of answers, with consequent database requests (Table 1).

Table 1. Databases by diseases/illnesses, with the highest number of requests in the period 2015-2021.*

Disease/injury	2015	2016	2017	2018	2019	2020	2021
Animal Accidents	-	-	-	2	3	1	-
Urban Arboviruses	-	4	4	4	6	3	2
Vaccination Coverage	-	1	-	-	-	1	4
Covid-19	-	-	-	-	-	6	15
Chronic Diseases	-	1	2	1	3	2	1
Diarrheal Diseases	1	-	-	2	-	-	-
Yellow Fever	1	-	-	3	4	-	2
Hepatitis	-	-	-	1	1	-	-
Other infectious diseases	1	1	3	12	3	1	3
Other zoonoses	2	1	1	4	1	-	1
Tuberculosis	1	6	6	6	9	2	4
Violence/suicide	-	-	2	1	1	-	-
Others	1	2	2	2	1	1	3

Source: Methods Division/ESC|DCC/SHD-SP. *Data extracted starting in 2015.

Note: the number of diseases does not correspond to the number of requests, since a request can include more than one disease.

With the creation and normalization of the research flow at ESC, there has been a progressive increase in requests. The availability on the website of guidelines for the use of the databases managed by ESC has facilitated communication with researchers.

RESEARCH ADVISORY GROUP

Research in epidemiological surveillance plays an important role in decision making. Based on this, the Research Methods Development and Epidemiology Training Division proposed, in 2021, to institutionalize research at ESC to be developed with the technical support of an advisory group. This ensures that the knowledge and technologies generated are disseminated during the promotion, prevention, control, and surveillance of events, diseases, and injuries of public health relevance.

The Research Advisory Group is made up of professionals from outside ESC (Chart 1). With experience in research, these professionals, without affecting their attributions, can collaborate with the evaluation of projects, answer questions, establish partnerships between institutions, support and encourage scientific activities in the agency, and promote the exchange of experiences among researchers.

Chart 1. Research Advisory Group, participating researchers - 2021.*

<p>Dra. Ana Paula Sayuri Sato <i>Nurse</i> School of Public Health - FSP/USP</p>	<p><i>Research fields</i> Vaccine Coverage Immunization Programs Infectious Disease Epidemiology</p>
<p>Dra. Edlaine Faria de Moura Villela <i>Biologist, Data Scientist and Educator</i> Disease Control Coordination - CCD/SES</p>	<p><i>Research fields</i> Education and Communication in Health Global Health with Application of Epidemiological Methods Mixed</p>
<p>Dr. Fredy GalvisOvallos <i>Biologist</i> School of Public Health - FSP/USP</p>	<p><i>Research fields</i> Vector-Borne Diseases Epidemiology of Leishmaniasis Ecoepidemiological Studies</p>
<p>Dra. Rossana Verónica Mendoza López <i>Statistics</i> São Paulo State Cancer Institute - Icesp</p>	<p><i>Research fields</i> Cancer Epidemiology Biostatistics Epidemiologic Methods</p>
<p>Dr. Thiago Salomão de Azevedo <i>Ecologist, geographer</i> Santa Bárbara d'Oeste City Hall - Health Department</p>	<p><i>Research fields</i> Spatial Analysis Geoprocessing Epidemiology</p>

Fonte: Autores

Epidemiological Surveillance Center/Epidemiological Surveillance Groups (ESC/ESG) professionals interested in developing research projects that have questions about the feasibility of their study, structuring, analysis, and partnerships should contact the Methods Division (dvmetodo@saude.sp.gov.br) in order to be directed to the Advisory Group.

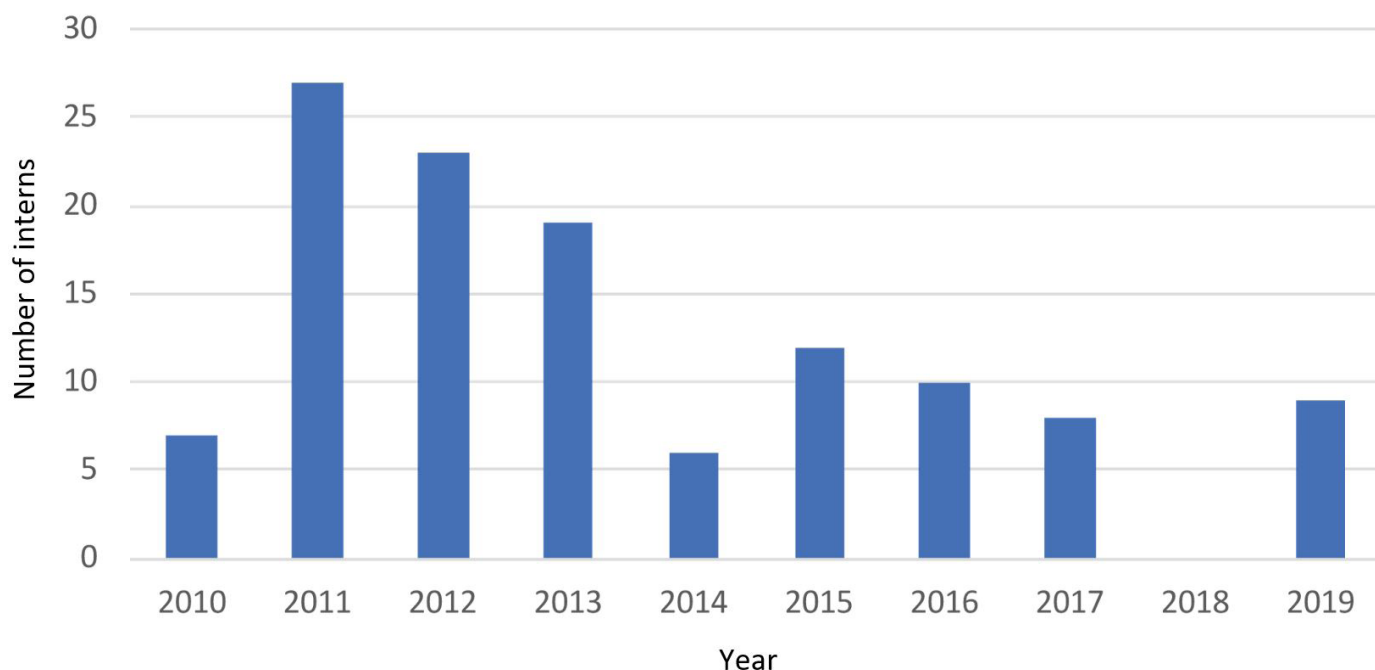
ESC INTERNSHIP PROGRAM

The Methods Division has coordinated ESC's internship program since the year it was established. The program aims to introduce concepts used in the area of epidemiological surveillance; to present the structure of the epidemiological surveillance system in the state of São Paulo and expose the importance of its role within SUS (Unified Health System) and to sensitize the student regarding the formation of professionals to work in collective health, as the support in instruction results in the strengthening and recognition of the work done by the various instances of health surveillance.

The multidisciplinary internship program involved all technical divisions of the ESC and was offered twice a year until 2019. During a four-week period, students from institutions that had residency or continuing education in the areas of public health, preventive medicine, social medicine, public health, and infectology took turns in the ESC's divisions. The number of students per technical area varies according to the availability of vacancies each year.

From 2010 to 2019, 121 students from different programs and institutions, such as the medical residency in pediatric infectology at the Faculdade de Ciências Médicas da Santa Casa de São Paulo - FCMSCSP (School of Medical Sciences at Santa Casa of São Paulo), the multidisciplinary professional improvement program at the Instituto de Infectologia Emilio Ribas (Emilio Ribas Institute of Infectious Diseases), the medical residency in pediatric infectology at the Instituto da Criança da Faculdade de Medicina da Universidade de São Paulo - FMUSP (Children's Institute of the School of Medicine, University of São Paulo), and the undergraduate program in public health at the Faculdade de Saúde Pública - FSP-USP (School of Public Health), passed through the ESC internship (Chart 2). With the covid-19 pandemic and the expanded social distance, it was not possible to take on trainees in 2020 and 2021.

Graph 2. Number of interns at the ESC per year, period 2010 to 2019.



Source: Methods Division/ESC|DCC/SHD-SP.

CAPACITY TRAINING

Basic Training in Epidemiological Surveillance (TBVE) Dengue - On-site

The Basic Training in Epidemiological Surveillance (TBVE) is a pedagogical project that has been an important tool for professionals at all levels of the epidemiological surveillance system to develop their activities with more quality, opportunity, rigor, and safety.

The planning, organization, and execution of the TBVE Dengue - on-site, in partnership with the Zoonosis Division, the Endemic Disease Control Superintendence (Sucen), the Adolfo Lutz Institute (IAL), and the ESG - trained 735 health surveillance professionals from municipalities that were vulnerable to high risk for the occurrence of a dengue epidemic ([Table 2](#)).

Table 2. Basic Epidemiological Surveillance Training - Dengue, on-site, coordinated and conducted by the Method Division per ESG from 2010.

CAPACITY TRAINING	No. of Classes	Workload (h)	Total Students
TBVE Dengue - ESG of Araraquara, Barretos, Franca and Ribeirão Preto	2	20	214
TBVE Dengue - ESG of Santos, Caraguatatuba, São José dos Campos and Taubaté	2	20	80
TBVE Dengue - ESG of Franco da Rocha	2	20	64
TBVE Dengue - ESG São José do Rio Preto and Jales	2	20	101
TBVE Dengue - São Paulo - Capital	2	20	136
TBVE Dengue - ESG Piracicaba	2	20	42
TBVE Dengue - ESG Presidente Prudente	2	20	54
TBVE Dengue - ESG Marília	2	20	44
Total	16	160	735

Source: Methods Division/ESC|DCC/SHD-SP.

DISTANCE LEARNING COURSES

The advent of distance learning courses (EaD) has expanded the reach of educational actions and has facilitated the participation of a larger contingent of people who work in health surveillance or in the health field, in the state and in the cities.

The Methods Division, together with the Immunization Division and the Health Personnel Training Center (Cefor), coordinated the Vaccine Room Training - EaD aimed at professionals working in the primary care network, city epidemiological surveillance and/or health surveillance coordinators, and from other states indicated by the technicians of the National Immunization Program of the Ministry of Health (PNI/MS). The number of students per city followed two criteria: the city's population size and the priority of the ESG.

Another important aspect was the tutors. In the first training, for example, the program had a network of 55 tutors at three levels: Tutor Monitor, Tutor Specialist, and Tutor Knowledge Manager. Behind the scenes, the project management group, with ten professionals from ESC, worked intensively to monitor and evaluate in real time the progress of the educational process with proposed adjustments, to signal the good progress of the work. This prompt feedback, together with the action of the mentoring network, was important for the good evaluation of the Vaccination Room Training.

Two workshops were held to prepare the didactic material and another two to train the professionals in the network of tutors, content providers, and coordination for the training, with the

training of 80 professionals. The Cefor professionals were responsible for forming the network of tutors and for the technical content, the handling, and the operationalization of the Moodle platform. Three Vaccination Room Training Courses - EaD, with a total of 3,441 approved students (Table 3).

The TBVE Dengue, an EaD version, also took place, in joint coordination with the Zoonoses Division and in partnership with Sucen, IAL, and Cefor. Workshops were held to define and prepare the didactic material and to train the tutors. Graduated 85 professionals for the network of tutors, content providers, and coordination, in two workshops. In the program, three trainings approved 2,242 health surveillance professionals from São Paulo cities that presented a high vulnerability risk for the occurrence of dengue epidemics (Table 3).

Table 3. EaD trainings coordinated and conducted by the Methods Division.

Training	Workload (h)	Total number of approved students
Vaccination Room Training - EaD - 2011	80	976
Vaccination Room Training - EaD - 2012	100	860
Vaccination Room Training - EaD - 2013	110	1.611
Total Vaccination Room	290	3.447
TBVE Dengue - EaD - 2012	50	887
TBVE Dengue - EaD - 2013	90	974
TBVE Dengue - EaD - 2015	70	381
Total Dengue	210	2.242

Source: Methods Division/ESC|DCC/SHD-SP.

EPISUS-SP

The Training Program in Epidemiology Applied to the Services of the Unique Health System of the State of São Paulo (EpiSUS-SP) is an initiative that contributes to the strengthening of the national epidemiological surveillance system, having trained professionals of excellence who work in the municipal, state, federal, and international spheres of public health.

The Methods Division was in charge of the extended coordination of EpiSUS-SP, in partnership with the ESC board and the Center for Strategic Information in Health Surveillance (Central-CIEVS). The division was part of the organization and selection process, whose last stage consisted of the Introductory Course of Epidemiological Surveillance, a one-week course, with evaluation and definition of those approved.

In the period to which this historical series refers, 16 professionals were trained for epidemiological surveillance and field epidemiology activities, in four EpiSUS-SP classes. With reference to the 2009-2010, 2011-2012, 2013-2014 and 2016-2017 biennials, all trainees attended the master's degree program in collective health, a partnership with the School of Medical Sciences at Santa Casa of São Paulo.

PROFESSIONAL MASTER'S DEGREE

Along with the Disease Control Coordination (DCC) and the board of ESC, the Methods Division participated in the elaboration and formalization of the inter-institutional agreement for the realization of the Professional Master in Collective Health - FCMSCSP's *stricto sensu* post-graduation, whose objective is the improvement of professionals who work in health surveillance of the São Paulo State Department of Health. Ten CCD professionals were approved and completed the course in the 2016-2017 period: four from the ESC, one from the ESG of Registro and one from the ESG of Santos, three from the Reference and Training Center CRT-Aids, and one from the Regional IAL of Rio Claro. Besides these, four EpiSUS-SP students also completed their master's degree in the 2015-2017 period.

OTHER DEVELOPED ACTIVITIES - 2010 TO 2021

- Planning and organization of the **Health Surveillance Course for Primary Care**.
- Planning and organization of the **Medium Level Technical Training Course in Health Surveillance**, with biweekly meetings and monthly workshops for preparation and elaboration of the pedagogic project, with the participation of the ESG of Registro, Assis, Franco da Rocha and Campinas.
- Planning, didactic material elaboration and monitoring of the **Epi Info Windows Training** for university technicians who work in the area of workers' health in the city of São Bernardo do Campo.
- Didactic material preparation for **Tabwin and Epi Info Practical Training** for the ESGs and municipalities.
- Participation and pedagogical assistance to the coordination of the **Continuing Education Courses in Hospital Epidemiology**, promoted by ESC/SHD-SP and SVS/MS.
- Participation in the monitoring activities of mass events, such as the World Cup, XXVIII World Catholic Youth Day and LGBTQIAP+ Parade.

- Participation in the **Workshop on Structure and Organization of the Technical Course on Health Surveillance**, in Rio de Janeiro.
- Participation in the II Workshop of the Technical Course in Health Surveillance, in Florianópolis.
- Participation in the event "**100 years of smallpox**", coordinated by the technical directory of the ESC|DCC/SHD-SP.
- Realization of the **Training in Health Surveillance - ESG Santos**, with 16 hours and for 20 students.
- Coordination and production of the didactic material for the **TBVE - EaD Basic Modules - 1st Class**, due to the need to update health surveillance professionals who work in epidemiological surveillance in municipalities. Two workshops were held with the content designers and the coordination for the creation, alignment, and review of the didactic material of two courses that aimed to train tutors and execute educational actions.
- Educational participation, together with the Division of Hospital Infection, in the Information Center and in the elaboration of the **EaD - Educational Action: "Safe hand hygiene practices in health services"**, with the objective of reducing and controlling health care related infection.
- Advisory, monitoring and evaluation of the workshop on the **review of the technical and scientific basis for preparing the Program for Prevention and Control of Urban and Wild Arbovirose in the State of São Paulo**, proposed by the "Arbovirose" Division of the ESC.
- Content coordination and revision of the texts prepared by the ESC's centers, divisions, and assistance from the board of directors, of the **São Paulo Epidemiology Bulletin (BEPA), special edition of the ESC**, published in the November-December 2017 issue (v. 14, n. 167-168). In this special issue of BEPA, the trajectory and some of the most important achievements of ESC were presented, in a time frame from 1985 to 2016.

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