JSS-IISFJD
V.4

JOINT SUPPORT SERVICES FRAMEWORK DOCUMENT

UPDATE LOG COMPARED TO LAST VERSION		
Version	**Date**	**Amendment**
3	November 2019	Updating the content of the Institute's support services and contact details of those responsible.
4	August 2024	Update of the services offered by the IIS-FJD.

1. INTRODUCTION AND OBJECTIVES

The Instituto de Investigación Sanitaria Fundación Jiménez Díaz (IIS-FJD) has a network of platforms and scientific-technical structures whose overall objective is to add value to translational biomedical research, optimizing the use of platforms, to avoid duplication and promote synergies between the different centers that are part of the IIS-FJD.

Under the collaboration agreement for the development of the Instituto de Investigación Sanitaria Fundación Jiménez Díaz (IIS-FJD), signed between Fundación Jiménez Díaz, Universidad Autónoma de Madrid, Fundación Instituto de Investigación Sanitaria Fundación Jiménez Díaz, as well as its subsequent addenda signed by the concessionary entities of the Rey Juan Carlos, Infanta Elena and General de Villalba University Hospitals, and recently also by the Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), together with the own statutes of the Fundación IIS-FJD, the members make available to the Institute the spaces assigned to the researchers and research groups belonging to it, as well as different infrastructures, maintaining their ownership.

In accordance with the aforementioned regulatory framework, as well as included in the Integration Plan, IIS-FJD staff involved in research projects enjoy equal rights and obligations regarding the use of common facilities and IIS-FJD services and equipment. In order to reflect the conditions of use and access of its staff to scientific equipment and ensure rational and balanced use, IIS-FJD has prepared the Institute's Welcome Pack, available to all staff on the corporate website. This document, which is provided to all new researchers who join the IIS-FJD, as an integrative element, contains a section intended to provide information on internal regulations governing the use of common platforms and services, with practical aspects related to requesting services or using common equipment.

The purpose of this document is to introduce all the services and support platforms offered by the Institute, as well as to describe their functions, provide contact details for the staff responsible and other relevant information.

2. IIS-FJD SUPPORT PLATFORMS

The IIS-FJD currently has the following Research Support Services and Platforms:

- Animal Experimentation and Experimental Surgery Service.
- Biobank.
- Genomics Unit.
- Proteomics Unit.
- Cell Biology Unit: confocal microscopy and flow cytometer.
- Cell Cultures.
- Biostatistics and Epidemiology Unit.
- Clinical Research and Clinical Trials Unit (UICEC in Spanish).
- Bioinformatics Unit (joint with Structural and Molecular Analysis service).
- Hospital Pharmacy Service.
- Imaging Unit.
- Radioisotope laboratory.
- IT Service.
- Library.
- English Language Translation Service.
- Clinical Documentation Service.

2.1. Animal Experimentation and Experimental Surgery Service

This Service is structured into two main areas: Animal Facility and Experimental Operating Room. Both provide services to the IIS-FJD.

Functions

Animal Facility

Its fundamental functions are the housing, breeding and maintenance of the different colonies of experimental animals and providing the different researchers with the animals necessary to carry out their research tasks.

These animals must be housed in the conditions required by the legislation for each species, using cages and housing modules in the best hygienic-sanitary and environmental conditions. The facility has the infrastructure and the authorization to house the following animals: rodents (of different strains), lagomorphs, pigs and *Danio rerio* (zebrafish).

An experimental animal is a biological reagent and as such must have adequate housing conditions, in order to avoid the poor response of these and minimize the obtaining of anomalous results.

Experimental Operating Room

The Experimental Operating Room works fundamentally:

1. In the development and implementation of the experimental models necessary for the different lines of research, as well as the monitoring and taking of different biological samples in these models.
2. As part of the training for part of the surgical sector in new surgical techniques (Digestive Surgery Services, Chest Surgery, Urology, Traumatology).
3. Training and validation for the use of new equipment and surgical material of different types by the medical staff.
4. Likewise, the design and preparation of different cases and advanced clinical simulation activities, both medical and surgical, are integrated.

Honours and distinctions

- Authorised body by MAPA for the evaluation of projects.
- Adhesion to COSCE (Confederation of Spanish Scientific Societies).

Equipment and animal species

The facilities of the Experimental Operating Room and the Animal Facility have the necessary infrastructure for the accommodation, breeding and maintenance of the animals, complying with the requirements that the legislation requires, as well as the necessary equipment to avoid the suffering and pain of the animals used.

- Animal Facility:
    - Rodent housing in ventilated Rack and conventional racking, (complying with existing regulations for dimensions and environmental enrichment).
    - Rack for *Danio rerio* with automatic pH, salinity and osmosis system, as well as two artemia tanks for producing live food for the fry.
    - Rabbit housing, with automatic drinking system in standard cage, with the dimensions established by the RD and endowed with an environmental enrichment plan.
    - Pig housing in individual Box with automatic drinking and environmental enrichment plan.
    - Temperature and humidity probes and air conditioning system.
    - Washing area with automatic rack washer, washing tunnel, bottle washer and autoclave.
    - Instrumentation zone with behavioral equipment and an IVIS Lumia for the realization of in-vivo and ex-vivo image through luminescence and fluorescence.
    - Experimental teaching laboratory, composed of 8 workstations with tilt table, suction and irrigation system, as well as system to work in endoscopic image and microscope.
- Teaching room: It consists of an audiovisual system and videoconference. Board table for 8 people and 15 desk chairs.
- Experimental Operating Room:
    - Three surgical tables.
    - Two inhalation anesthesia kits for large animals.

- Inhalation anesthesia equipment for small animals.
- Two radiodiagnostic arches for interventional scanning.
- Surgical microscope and magnifying glass.
- Autoclave for surgical material.
- Instrumental various, as well as consumable material.
- Euthanasia chamber by CO2.
- Hot bed for recovery of small animals.
- Laparoscopy tower for large animals.

The number of animals used and the species to be used depends on the different lines of research to be developed.

Animal species

Mice (different strains) *		Interventional pneumology	Total 0 pigs
Pathological Anatomy	Total 35 mice	Interventional neuroradiology	Total 0 pigs
Companies	Total 90 mice	New therapies	Total 17 pigs
Immunology	Total 279 mice	Otolaryngology	Total 9 pigs
Microbiology	Total 30 mice	Urology	Total 9 pigs
Nephrology	Total 1,206 mice	Rats (different strains)	
Pulmonology	Total 30 mice	Nephrology	Total 0 rats
Neurology	Total 563 mice	Neurosurgery	Total 9 rats
New therapies	Total 48 mice	New therapies	Total 3 rats
Oncology	Total 1,200 mice	Rabbits (New Zeeland white rabbits)	
Vascular pathology	Total 893 mice	Immunology	Total 8 rabbits
Rheumatology	Total 75 mice	Microbiology	Total 0 rabbits
Pigs**		Rheumatology	Total 12 rabbits
UVI	Total 0 pigs	Traumatology	Total 0 rabbits

* These data do not include the production of the different rodent colonies.

** For Experimental Surgery programs. Care is taken to keep their housing as short as possible; does not exceed 48h.

Scientific activity

In the field of animal experimentation, the Animal Experimentation and Experimental Surgery Service actively participates in the development of research projects by IIS-FJD professionals.

The main species that we work with are the following:

- Mice (different strains).
- Rats (different strains).
- Rabbits (New Zeeland white rabbits).
- Pigs.

Healthcare Work

The animal facility collaborates in the taking of biological samples of different animals required by the clinical sector, (sporadic, such as allergies, microbiology, etc.).

The facilities of the Experimental and Animal Surgery have the necessary infrastructure for the accommodation, breeding and maintenance of animals, meeting the requirements required by law; as well as the necessary infrastructure to avoid suffering and pain of the animals used.

The number of animals used and the species to be used depends on the different lines of research to be developed.

Planned Teaching Activity

The Animal Experimentation and Experimental Surgery Service participates in teaching programs, both internally and externally.

Internally, the courses are related to the introduction to microsurgery, refinement in anesthesia equipment, laparoscopic surgery, etc., as well as training in the context of UAM.

Externally, the teaching activity taught is related to obtaining animal management training, university practical subjects, resident training, etc.

In all the teaching activities the professionals of the service act as co-directors or as coordinators of the practical phase of the workshops.

Contact staff

- Head of Service: Carlos Castilla Reparaz (Categories, A, B, C, D and F; Veterinarian). castilla@fjd.es
- Supervisor: Carlos Carnero Guerrero (Categories A, B, C and Technical Assistant Veterinary-Supervisor and responsible for biosecurity). ccarnero@quironsalud.es
- Specialist technicians:
    - Jessica Baltanás Vargas (Categories A, B and C).
    - Jennifer Ibáñez Julián (Categories A, B and C).
    - Rubén Mariscal Ruiz (Categories A, B and C).
    - Guillermo Sánchez Carrillo (Categories A, B and C).

Level of accreditation

All staff have the necessary qualifications to develop the different functions in animal experimentation, recognized at national and European level. Likewise, they have CSN certifications for the handling of imaging radio diagnostic equipment.

Honors and distinctions (Carlos Castilla /Carlos Carnero)

- Chairman of the Animal Welfare Ethics Committee of the IIS-FJD.
- Adhered to COSCE (Confederation of Spanish Scientific Societies).
- Body Enabled by MAPA for the evaluation of projects.
- Member of the Governing Board of SECAL (Spanish Society of Laboratory Animal Sciences).
- Member of the SPCAL (Sociedade Portuguesa de Ciências em Animais de Laboratorio).
- Teaching clinical collaborator of the Department of Surgery of the UAM.

2.2. Biobank

The Biobank Unit of the Fundación Jiménez Díaz (B-FJD) is a decentralized, transversal and multicentric platform conceived as a support platform for research at the Instituto de Investigación Sanitaria de la Fundación Jiménez Díaz (IIS-FJD). Its main objective is to generate collections of high-value biological samples through the aggregation of clinical and genomic data, oriented towards the transfer of knowledge and ultimately to improve the health and quality of life of people. On the other hand, it focuses on offering a wide range of sample processing techniques and complex techniques to research groups, allowing to optimize resources.

The B-FJD is composed of the Nodes of Pathological Anatomy, Genetics, Nephrology and Vascular Pathology and Hypertension, Microbiology, Hematology, Cardiology, Immunology, Rheumatology and the Assisted Reproduction Unit, all of them attached to the Fundación Jiménez Díaz, as well as the Allergology Node of the Hospital Universitario Infanta Elena and the Node spital Universitari General de Catalunya-Grupo Quirónsalud. In response to the new needs of biomedical research and with the aim of strengthening its impact on translational medicine, the Unit has continued to work during 2024 to consolidate strategically in the areas of Precision Medicine and Regenerative Medicine, relying on three fundamental pillars: 1) development of models in Precision Medicine, including patient-derived xenografts (PDX) and organoids in cancer, inflammatory diseases (autoimmune, rheumatic and osteoarticular diseases) and infectious diseases; 2) models in Regenerative Medicine, with adult human stem cells and tissue bioengineering; 3) use of artificial intelligence tools for the exploitation of unstructured clinical data, genomic data association and image analysis.

These three lines of action, already active and consolidated in the IIS-FJD, are planned to be incorporated into the Unit's portfolio of services, making themselves available to the research community with a clear focus on innovation and translation into clinical practice.
The management and coordination of the Unit guarantee a real impact on the generation of knowledge and its transfer to society, with a firm commitment in terms of quality, equity and transparency. In addition, special attention is paid to the promotion of emerging researchers and the promotion of innovation, thus contributing to the development of new solutions for the diagnosis and treatment of diseases.

Staff

Currently, the institution finances those responsible for the infrastructure itself (Scientific Director and Coordinator) who are in charge of document management for the biobank, managing requests and formalizing transfers, as well as the dissemination plan. In the last year, it covered 20% of staff financing. There has also been an increase in commitment to the Unit, with a budget of 24.800€ allocated over the last 3 years.
Since 2009, the B-FJD has been part of the National Biobank Platform (currently ISCIII Biomodels and Biobanks Platform, PISCIIIBB) and has had continuous funding through public calls for infrastructure and specialized personnel. In the last call for grants for ISCIII Platforms to support R+D+i in Biomedicine and Health Sciences of the Strategic Action in Health 2023, the Unit has obtained the best assessment of all the units presented, as well as the largest economic concession, with the financing of technical personnel and doctoral degree, ensuring its sustainability and future projection.

Equipment

The Biobank has its own equipment, acquired entirely through grants from the ISCIII Biobank RETICS program between 2009 and 2013.

The equipment and infrastructure available in the B-FJD are:

- Information management system that complies with all the requirements of the LOPD (Spanish Data Protection Act). The application has been installed on the HUFJD servers and can be accessed both via the network and the internet.
- Sample storage systems: all B-FJD freezing equipment is used exclusively for the preservation of biobank samples. All of them with safety power grid connection, CO2 tank, continuous temperature recording and local and telephone alarms. The following equipment is available: 9 units at -20ºC (2 back-up units), 8 units at -80ºC (2 back-up units), 2 liquid nitrogen units (1 back-up unit). In addition, there is a paraffin archive at room temperature, which is fireproof, organized and kept in a restricted-access room.

- Nucleic acid purification, quantification and evaluation systems: Magna Pure Compact system, EZ1 Advanced and Advanced XL systems; Agilent Bioanalyzer 2100 system with complements and fungible for DNA analysis, RNA, Nanodrop ND1000, Qubit Fluoremetric from Thermo Fisher Scientific.
- Liquid and tissue sample processing systems.
- Analysis systems: end-time and real-time PCR systems, NGS pyrossequencing and mass sequencing systems, automated immunohistochemistry performing systems (Dako Autostainer).
- Imaging systems.
- Laboratory consumables, basic for the processing, storage and quality assessment of biological samples.

Activity

The recent activity of the B-FJD has focused on three main areas: (1) Sampling; 2) Transfers of samples and associated clinical data; 3) Activities involving transfer to the company from activities generated in the Biobank.

Provision of services

Improvement in the supply of services provided by the Unit and Impact on demand

The B-FJD, within the evolution of the provision of services of the Platforms in the National Health System, has undergone an important change and adaptation to the needs transmitted by the research community. Thanks to the decentralized structure and involvement of care services that are part of the biobank, the B-FJD's service delivery portfolio has been expanded, enhancing the processes available in the services and optimizing resources and means. The research community of the center and collaborating groups have been offered increasingly complex and demanded services, not only focused on sample storage activities and assignments, but also performing clinical trial sample management, having mirror storage and focusing on obtaining associated genomic data from Next Generation Sequencing (NGS). In addition, the

possibility of establishment of primary cultures and immortalization of cells, generation of organoids in different tumor types, autoimmune diseases, rheumatic and osteoarticular inflammatory pathology, establishment of stem cells of adult donors and PDX models has been developed. Activities related to the provision of sample processing services for clinical trials and research projects are highlighted.

The services that have experienced the greatest demand during the last year have been the realization of immunohistochemistry techniques in an automated way, the development of specific stains, the realization of in *situ* hybridization techniques, and the provision of services aimed at the digitization of images on both immunohistochemistry and hematoxylin-eosin stains. In relation to digitalization services, the digitization of 1,500 cases of immunohistochemistry stains, as well as hematoxylin-eosin stains, stand out. As one of the milestones of Objective 1, relating to the integration of new tools in the field of Precision Medicine, the B-FJD has received several requests for the processing of samples derived from animal cancer models, for fixation in formalin and inclusion in paraffin. Noteworthy are samples derived from animal models of neuroblastoma and samples from animal models of breast cancer cell line xenografts.

In addition, in the course of 2024, it is worth mentioning the storage service provided to the Medical Oncology Service of the hospital, of 2,581 aliquots of plasma, serum and complete blood of a total of 220 patients, who have donated their samples in a biobank regime, after signing an IC.

On the other hand, the B-FJD continues since 2013 as the headquarters of the Biobank Spanish Breast Cancer Research Group (GEICAM), in addition to acting as a central laboratory, increasing activity in recent years as a service provider to different studies promoted by GEICAM. Among the activities carried out, services have been provided in terms of histological cuts, molecular determinations by qPCR or mass sequencing and realization and evaluation of immunohistochemical stains.

Activities to disseminate and improve the functioning of the B-FJD:

Communication of the biobank's value to the research community and society at large.

During 2024, activities have been promoted to disseminate information about the B-FJD and its portfolio of collections, models, and services to researchers and groups and companies in the field of Precision Medicine and Regenerative Medicine. The B-FJD website is updated annually with the information contained in the report that is delivered to the IIS-FJD. The latest update available is for the year 2023, and work is currently underway to incorporate the data

corresponding to the 2024 report. Furthermore, the B-FJD is an active member of the ISCIII Biobanks and Biomodels Platform (https://www.isciiibiobanksbiomodels.es), participating regularly in the activities organized by this platform. The B-FJD attends the platform's annual conference, where it actively contributes through oral presentations.

Besides, it presents annual surveys and activity reports, thus contributing to the development and updating of scientific and technical information within the platform and disseminating this information to IIS-FJD researchers.

It also holds open days to make society and patient groups aware of its activities and has promoted its visibility in professional meetings in 2024 through its participation in the VI Annual Conference of Research Support Platforms carried out by the IIS-FJD.

Biobank coordination and collaborative project:

- Strengthen the visibility of the biobank in projects, consortia and developments in the field of Precision Medicine and Regenerative Medicine.
- Generate transversal synergies in the institution between sample donation services, researchers and technology providers, customers and support services, under the coordination of those responsible for the B-FJD, in an environment of standardized activity (ISO 9001:2015) and following quality parameters. Since November 2022, the B-FJD has been certified by the ISO 9001 quality management standard as a platform within the IIS-FJD. This certification includes a defined process map, quality objectives and indicators, as well as a risk map specific to the Biobank. During 2024, and in collaboration with the Quality Unit of the FJD, progress has been made in establishing the bases for the implementation of accreditation according to the specific ISO 20387 standard for Biobanks. In this regard, in addition to the progress in specific procedures, work is being done on the design of integration of the Biobank LIS with the hospital's SGI, both the medical records management program and the sample management programs of the central services, clinical analysis and pathological anatomy. To allow the improvement in the traceability of all processes, as well as in the dump of all the information related to the Biobank in the new Qualios 4H corporate Quality Management platform, recently implemented in our centers.
- Promote collaboration between the B-FJD and other Platform Units in programs of mutual interest.

- Assess the quality of the Unit's performance. The B-FJD has participated in the 3rd edition of the Intercomparison Exercise, promoted by the National DNA Bank, to evaluate various procedures related to the determination of the quality of DNA and RNA samples. Specifically in the sections of determination concentration and purity of DNA by spectrophotometry, in addition to the process of extraction of DNA from complete blood. The result in both processes was “satisfactory” with an “optimal” sample quality.

2.3. Genomics Unit

Objectives of the Genomics Unit

The main objectives of the Genomics Unit are:

- Integrate basic aspects (functional genomics) with more translational aspects, such as the development, validation and harmonization of diagnostic techniques and the discovery of new therapeutic targets.
- The identification of genes involved in diseases and their interactions with environmental factors in order to make a more accurate and personalized genetic diagnosis and more effective treatment.
- The application of monitoring systems that evaluate the severity of a disease.
- Identify new genes/loci involved in hereditary human pathologies that allow defining more sensitive and efficient diagnostic algorithms for proper genetic characterization and genetic counseling.
- Improve knowledge about epidemiology, causes and mechanisms involved in the development of rare and common genetic-based diseases.
- Implement mass sequencing techniques (NGS), analytically and clinically validate this technology and develop new diagnostic algorithms applicable to heterogeneous or complex genetic pathologies.

Portfolio of services

- Digital PCR service, precision genotyping (detection of low percentage events, quantification of alleles...) using digital PCR technology.
- Internal Sanger sequencing service.
- Mass Sequencing Service (NGS), for study of complete exima clinical exome, RNA-Seq and Panels.
- Cell line karyotyping service.
- Service of cytogenetic-molecular techniques (QF-PCR, FISH and CGH-Array).

Equipment available

The Genomics Unit currently has five platforms with the following technological endowment:

Nucleic acid extraction and quality control Platform:

- 2 DNA Extractors (Bio-Robot EZ-1 from Qiagen) located in Neurology Laboratory and Common Immunology Laboratory, 4th floor.
- 1 Automatic Electrophoresis Equipment (TapeStation 4200, Agilent) located in the Genetics Laboratory, 4th floor.

Real-time PCR Platform and Sanger Sequencing:

- 2 Fast Quantitative PCRs (7500 and 7500 Fast Real Time PCRs from Applied Biosystems) located in the Common Room-Laboratory, 4th floor.
- 1 LightCycler 96 (Roche) located in Fourth-Common Laboratory, 4th floor.
- 2 Automatic sequencers of 16 and 48 capillaries (3130xl Genetic Analyzer and 3730 Genetic Analyzer from Applied Biosystems) located in the Genetics Laboratory, 2nd floor.

Mass Sequencing Platform:

- 1 massive sequencer (NextSeq500 from Illumina) located in the Genetics Laboratory, 4th floor.

- 1 massive sequencer (NextSeq2000 from Illumina) located in the Genetics Laboratory, 4th floor.

CGH Arrays Platform:

- 1 hybridization oven and 1 Agilent SureScan CGH array reader located in the Genetics Laboratory, 4th floor.

PCR-Digital Platform:

- 1 digital PCR (QX-200 from Bio-Rad) located in the Genetics Laboratory, 4th floor.

Contact staff

Currently, the Genomics Area has two research support technicians and a senior licensed technician for certification and process quality.

2.4. Proteomics Unit

The Proteomics Unit of the IIS-FJD, together with the Genomics Unit, contribute to:

- Establish new lines of research in biomarkers and metabolic pathways associated with the development of diseases.
- The functional analysis and validation of diagnostic, prognostic and predictive biomarkers.
- Deepen the study of molecular alterations.
- The development of analytical methodologies of quantification by directed mass spectrometry.

Portfolio of services

The MS-QQQ instrumentation is designed for targeted analysis (target) by SRM (Selected Reaction Monitoring), allowing a quantitative differential analysis of the proteins or metabolites of interest.

Equipment available

The IIS-FJD features an integrated nano/micro HPLC (1200 Series) equipment for proteomic and metabolomic analysis. Notably, it has multidimensional liquid chromatography for the separation of complex biological samples of peptides, proteins, and/or metabolites. It consists of a modular equipment that has an automatic injector for robotic analysis of samples and detection by mass spectrometry in a triple quadrupole (MS-QQQ) with ChipCube and JetStream interface. MS-QQQ instrumentation is designed for Targeted Reaction Monitoring (SRM) analysis, allowing differential analysis of proteins or metabolites of interest.

Contact staff

Head of Unit: Dr. O'Brien. Gloria Álvarez-Llamas (galvarez@fjd.es).

2.5. Cell Biology Unit: confocal microscopy and flow cytometer

The applications of cytometry, sorter and confocal microscopy are very varied and cover fields as distant as biomedicine studies, studies in food or materials, etc. Thanks to the development of new fluorescent probes and new detection systems, diversification into fields of study and new applications is continuously growing. In the IIS-FJD, in the field of biomedicine, three-dimensional studies can be done in sections or in total assemblies, co-location of fluorescent probes, tracking of molecules or ions within living or fixed cells, measurement of cells, organelles and volume determinations.

Confocal microscopy is included within optical microscopy, specifically fluorescence microscopy. The development of new fluorescent probes and the increased resolution provided by the use of confocal microscopy have made fluorescence one of the most widely used techniques today.

The combination of the capture of images in the focal plane with the software allows the use of the confocal microscope as an optical microtome, which makes it possible to obtain optical sections of the sample, the basis for obtaining images in three dimensions.

Functions of the Cell Biology Unit

The functions performed in the Unit are:

- Maintenance and calibration of service equipment.
- Management of equipment usage control, accounting, and invoicing.
- Training courses and supervision in the use of analytical cytometry equipment.
- Maintenance and distribution of reagents commonly used in flow cytometry and sorter.
- Acquisition of samples in FACScalibur, FACSCanto and FACSMelody.
- Analysis of the results obtained with different specialized software.
- Advice on various complex techniques and protocols, such as the most suitable fluorochromes for different assays or culture media for different cell types.
- Advice on constructing templates for flow cytometers and sorters.
- Reconstruction of images using multicolor and 3D software.
- Liaison between researchers and the application service of the equipment houses.

Services and utilities

<u>Flow cytometry</u>

- Immunophenotype.
- Cell cycle analysis.
- Genes reporters.
- Measurement of cell proliferation.
- Apoptosis.

- Calcium flow.
- Intracellular signaling: detection of phosphoproteins at the single cell level.
- Multiplexed assays of molecules in solution.

Sorter

- Separation of cell populations.
- Separation of living cells for cell culture.
- Separation of fixed cells for further genetic analysis.
- Cloning.

Confocal microscopy

- Serial sequence collections.
- Three-dimensional reconstructions of the object studied: skin, etc.
- Measures of co-location of markers.
- Side images of the object.
- Endocytosis.
- Overlay of images obtained by different techniques.
- Time-lapse microscopy. Observation of living cells with confocal fluorescence microscopy allows intracellular tracking of fluorescent molecules.

Equipment available

The IIS-FJD has a cytometer and a Leica confocal microscope, which are currently the most important and widely used institutional infrastructures in its possession.

Cytometry

The unit operates a digital cytometer with two lasers and four fluorescence detectors (FACSCanto II) from Becton Dickinson. It is a multicolor analysis system with digital data acquisition and processing capabilities, designed for clinical and research applications. The equipment has new acquisition and analysis software, as well as a module that allows the

incorporation of automatic sample acquisition systems from tubes or plates, which saves the researcher a lot of time.

Sorter

The current unit operates a cell sorter containing three lasers (blue, red and violet) and eight fluorescence detectors (FACSMelody) from Becton Dickinson. It is responsible for the physical separation of particles based on the differential expression of one or more parameters that can be analyzed using analytical flow cytometry techniques. It has new acquisition and analysis software that allows automatic acquisition of samples in both tubes and plates.

Confocal microscopy

Among the two confocal microscopes available, the most widely used due to its more recent design is the Leica TCS SP5 confocal microscope, which covers most confocal microscopy requirements with optimal results and provides a full range of scanning speeds at the highest resolution. This equipment is set up with SP detectors (five channels simultaneously), a tandem scanner (conventional and resonant for high-speed image acquisition), and an AOBS system for dynamic light separation. The TCS SP5 system produces bright, noise-free images with minimal damage to the sample. This confocal microscope has the following excitation laser lines: 405 nm, 458 nm, 476 nm, 488 nm, 496 nm, 514 nm, 561 nm, 594 nm, and 633 nm.

The microscope is a Leica DMI6000 inverted model, automatic, with motorized stage, temperature incubator and CO2 supply, to keep the cells alive in a specific atmosphere. It has an EL6000 (Leica) light source for viewing samples with fluorescence, and transmitted light for bright field and differential interference contrast (DIC).

To display the sample, this system is equipped with the following filters:

- A (UV excitation BP 340-380; LP 425) emission for Alexa 405 or DAPI, etc.
- I3 (blue excitation BP 450-490; emission LP 515) for FITC, Cy2, etc.
- N2.1 (Green Excitation BP 515-560; emission LP 590) for TRITC, Cy3, etc.
- L5 (excitation 480/40; emission 527/30), more restrictive than filter I3.

The objectives available on this equipment are:

- HC PL APO CS 10X/0.4 DRY.
- HCX PL APO 20X/0.7 IMM (for water or oil).
- HCX PL APO CS 40X/1.25 OIL.
- HCX PL APO lambda blue 63X/ 1.4 OIL (with special chromatic correction in the blue range).
- HCX PL APO CS 100X/1.4 OIL.
- HCX PL APO CS 63X/1.3 GLYC 21 ºC (working distance 280 µm for coarse samples and temperature 21 ºC).

Contact staff

The people responsible for the unit are:

- Mª Victoria del Pozo Abejón. vpozo@fjd.es
- Mar González García-Parreño. mmgonzalez@fjd.es

2.6. Cell Cultures

This is an external service under the agreement signed in December 2013 between CIEMAT, through its Division of Innovative Therapies in the Hematopoietic System (DTISH), and IIS-FJD for the establishment of a Joint Unit for Advanced Therapies.

- Overall Unit Objective: To promote high-impact research activity within CIEMAT's DTISH focused on the development and application of advanced therapies targeting diseases that are difficult to treat with current therapeutic tools.
- Activities to be carried out: These include, on the one hand, the research staff available at CIEMAT, as well as the contribution of the IIS-FJD, and, on the other hand, the facilities available in the new DTISH building at CIEMAT. These facilities include the cell culture area, which has a containment II laboratory, a higher security laboratory for the

production of viral vectors, and a GMP room for the production of Advanced Therapy Medicinal Products accredited by the Spanish Agency for Medicines and Health Products (AEMPS). The crop area has 12 biological safety booths, 12 incubators, microscopes, centrifuges, cell counters, electroporators and small equipment. The DTISH culture laboratory has been part of the Community of Madrid Laboratory Network since 2009 (RedLab 262).

Staff

The head of this Unit within the IIS-FJD is:

- Juan Antonio Bueren Roncero. Juan.bueren@ciemat.es

2.7. Biostatistics and Epidemiology Unit

Objective and functions of the Unit

The Biostatistics and Epidemiology Unit provides methodological and statistical support to IIS-FJD research carried out at HUFJD, HURJC, HUIE and HUGV hospitals.

Portfolio of services

The services provided by the Unit are as follows:

Design of studies:

- Calculation of sample size or statistical power.
- Definition of statistical methodology.
- Generation of randomization lists.
- Advice on data collection for further analysis.

Data analysis and dissemination of results:

- Data statistical analysis.
- Interpretation of the results.
- Methodology and results preparation for seminars, conferences, and scientific publications.

Teaching:

- Courses on statistical methodology for professionals from the institution itself or from other centers.
- Statistical Data Analysis Foundations Unit. Master's Degree in Advanced Patient Care in Anesthesia, Resuscitation, and Pain Management. Official master's degree from the UAM.
- Advising on undergraduate final projects, master's final projects, and doctoral theses.

Scientific activity developed

The Epidemiology and Biostatistics Unit of the IIS-FJD actively collaborates with numerous services of the Hospital Universitario Fundación Jiménez Díaz, as well as other hospital centers, mainly in the tasks and activities described above.

As a result of this activity, the Unit has a high scientific output, having published in recent years in journals such as *JAMA internal medicine*, *BMC medicine* and *Trends in cancer*, among others.

Teaching work carried out

The members of the Epidemiology and Biostatistics Unit of the IIS-FJD actively participate in the continuous training of researchers of the Institute, as well as in postgraduate activities. These teaching initiatives are related to biostatistics and research methodology and design.

Contact staff

- Responsible: Ignacio Mahíllo Fernández, MSc, PhD. imahillo@fjd.es
- Collaborator: Rafael Dal-Ré, MD, PhD, MPH.

2.8. Clinical Research and Clinical Trials Unit (UICEC)

The UICEC-FJD is part of the ISCIII Platform for Clinical Research Support, which is funded by the Carlos III Health Institute as part of the 2013-2016 Strategic Action in Health call for proposals, under the State Program for Research Oriented to the Challenges of Society, within the framework of the 2013-2016 State Plan for Scientific and Technical Research and Innovation (PT13/002/0019), which was renewed in 2017 (PT17/0017/0022), in the Call for ISCIII Platforms to support R&D&I in Biomedicine and Health Sciences of the Strategic Action in Health 2017-2020 (PT20/00142), and 2021-2023 (PT23/00119) for the period 2024-2026, meaning that it will continue to form part of the ISCIII Platform for Clinical Research Support.

Functions

The Clinical Research and Clinical Trials Unit (UICEC-FJD) has the following main functions:

- Collaborate with any researcher of the Institute who requests it in the development of independent research projects or non-commercial Promoter. To this end, scientific, methodological, ethical-legal, clinical (medical and nursing) and logistical support services are made available to the applicant according to the needs identified and the resources available in each project.
- To support Commercial Research, mainly clinical trials, but also studies with other designs, with the aim of speeding up and facilitating their development in the Institution, so that the results of the research are always of the highest quality and in the shortest possible time.

Recent activities

The Unit's activity continues to grow during 2024. Support has been provided to 160 studies (47 of them new):

- 123 from commercial promoters, depending on requirements, in start-up tasks, study coordination, data entry, nursing procedures, and biological sample management.
- 37 from independent promoters, depending on requirements, in scientific advisory tasks, project management and development, and monitoring.

Among the 160 studies that have received support, 66 belong to the Hematology Department (41.3%), 26 to the Nephrology Department (16.3%), 14 to the Ophthalmology Department (8.8%), 11 to the Rheumatology Department (6.9%), 9 to the Pulmonology Department (5.6%), 6 to the General Surgery/ Advanced Therapies Department (3.8%), 5 to the Gastroenterology Department (3.1%), 5 to the Dermatology Department (3.1%), 4 to the Pediatrics Department (2.5%), 3 to the Cardiology Department (1.9%) and 3 to the Internal Medicine Department (1.9%).

Shorter methodological support has also been provided in approximately 36 independent research projects, in consultation and advisory activities in different aspects of the approach and design of the study, drafting of the protocol, submission to the Ethics Committee, support in the response to the requested clarifications, as well as in the drafting of projects for their submission of applications to public and private calls for funding.

UICEC is also actively involved in other IIS-FJD research activities, including:

- Scientific advice to the groups associated with the IIS-FJD.
- Member of the IIS-FJD Research Committee.
- Head of the CEIm/CEI-FJD Technical Secretariat.
- Secretariat of the IIS-FJD Scientific Integrity Committee.
- User registration management for study registration at www.clinicaltrials.gov
- Biennial organization and participation as a lecturer in the IISFJD Course on Best Practices in Research.

- Other courses and workshops related to its field of activity.

Scientific activities

From the Unit itself, various scientific activities are carried out:

- International congresses.
- National congresses.
- Scientific publications.
- Research projects.
- Commercial and independent clinical studies.

A more comprehensive breakdown of the Unit's activity can be found in the annual activity reports.

Contact staff

- Unit management and institutional head: Dra. Carmen Ayuso García.
- Head of Unit: Dra. Lucía Llanos Jiménez (lucia.llanos@fjd.es).
- Coordinator (project manager/senior supervisor): Dña. Mireia Arcas Tomeo.
- Project management and monitoring: Isabel Villalba Juárez and Eva Cerezo Martín.
- Study Coordinators/data entry: Rocío Cortés García and Andrea Martínez Ramas.
- Clinical Research Nurses: Gloria Aranaz López, Iris Moreno Viera and Sarai Urbiola Sarasola.

2.9. Bioinformatics Unit (joint with Structural and Molecular Analysis service)

The Bioinformatics Unit offers collaborative support to IIS-FJD and external research groups in the analysis of data from omics technologies and integration into clinical Big Data. Its experience

focuses on the bioinformatics treatment of genomic, transcriptomic and other large-scale molecular experiments and the functional characterization of results.

Support activity and service portfolio

The Bioinformatics Unit develops and maintains: 1) bioinformatics protocols (pipelines) for DNASeq and RNASeq analysis; 2) a genomic database of patients with genetic diseases; software for filtering and prioritizing genomic variants and predicting gene-disease associations. It has also participated in the development of resources for the study and analysis of post-translational regulation (https://ptmcode.embl.de). It is involved in various initiatives to establish standards and guidelines for good practice in bioinformatics analysis in the clinical environment (CIBERER, TransBioNet) and in the evaluation of projects using Artificial Intelligence (ANCEI). It belongs to the TransBioNet network (https://inb-elixir.es/transbionet), a joint initiative of the Carlos III Health Institute and the National Institute of Bioinformatics to organize the translation of bioinformatics to the healthcare environment and participates in the IMPACT-Data and IMPACT-Genomics projects, as well as in the mirror group (NMG5) of the B1MG project. It has participated in the design of the IIS-FJD Omics Data Management Plan (https://bit.ly/IIS-FJD_RRI2200005) and participates in training activities.

Specifically, it offers technical, scientific and consulting support in:

- Experimental design including subsequent bioinformatics analysis.
- Bioinformatics, statistical and functional analysis of large-scale experiments, including transcriptomic (RNASeq), genomic (DNASeq of short and long sequences), proteomic and others.
- Development of *ad hoc* bioinformatics methods.
- Interpretation of analysis results, writing methods and analysis results for scientific publications.
- Support in applications for scientific projects to public and private calls for proposals that require bioinformatics analysis.
- Advice and support in the management plan and sharing of omics data.
- Training activities.

Equipment available

The Unit relies on the High-Performance Computing resources of the so-called bio node of the Scientific Computing Center of the Autonomous University of Madrid (CCC-UAM), which has 4 Intel Xeon Gold 6138F servers, 384GB of RAM, and a total of 160 processors (320 cores). It also benefits from:

- A shared virtual machine server in Telefónica SA, 64GB of RAM and 16 cores.
- 1 workstation (5x32GB RAM and 1x16GB RAM).
- 24TB shared storage capacity at Telefónica SA.

Contact staff

- Pablo Mínguez Paniagua (scientific coordinator). pablo.minguez@quironsalud.es
- Yolanda Benítez Quesada (bioinformatics).

2.10. Hospital Pharmacy Service

Medicines undergoing clinical trials must be distributed through Hospital Pharmacy Services. Therefore, this Service is responsible for the custody, storage, and dispensing of medicines undergoing clinical trials.

The Pharmacy Service has the necessary means to ensure compliance with GCP standards regarding the storage, handling, and records of dispensing and return of samples for clinical research, which are kept separate from other pharmaceutical products. The Clinical Trials area is restricted access.

Main services offered

The unit not only provides storage and dispensing services, but also performs the following activities:

- Sample control and database management, including IVRS, IWRS, Clinphone, ALMAC, ICON, PPD, Perceptives, etc.
- Monitoring visits.
- Sample handling and preparation.
- Sample accounting and dispensing forms.
- Pharmacist available from 8 a.m. to 10 p.m., Monday through Friday, and Saturdays from 9 a.m. to 3 p.m.
- Re-labelling.
- Expiration date management.
- Sample destruction.

Equipment and procedures

The Pharmacy Service has the following facilities for storing research samples:

- Restricted-access cabinets for research samples stored at room temperature.
- 4 restricted-access refrigerators.
- 2 freezers, one with a temperature range of -20 to -25 °C, and one with a temperature range of -75 to -80 °C.

The ambient temperature and the temperature of refrigerators and freezers are monitored by an automatic, continuous device. There are temperature deviation alarm devices and back-up thermometers in case of incidents with the main thermometers.

Standard operating procedures are in place at all points in the process of managing research samples and monitoring clinical trials.

Projects, contracts and observational studies

The activity carried out by the Pharmacy Service in the field of research is mainly funded by private projects (competitive and non-competitive) and other research activities.

Contact staff

- Javier Bécares Martínez (Head of Hospital Pharmacy Service). He holds the presidency of the CEIm of the IIS-FJD. jbecares@fjd.es
- Macarena Bonilla Porras (Optional Specialist Hospital Pharmacy). She holds the vice-presidency of the CEIm of the IIS-FJD.
- Laura García Jiménez (Facultative Hospital Pharmacy Specialist).
- Mónica González Pulido (Pharmacy Technician).
- Mirentxu Olatz Jimeno Hierro (Pharmaceutical Technician).

2.11. Imaging Unit

The Medical Imaging Department at the Hospital Universitario Fundación Jiménez Díaz collaborates with the Instituto de Investigación de la FJD (FJD Research Institute), facilitating all actions that contribute to the implementation of research projects by the Institute's various groups. It integrates Diagnostic Imaging and Nuclear Medicine Services.

Functions and objectives

The fundamental objective of the Medical Imaging Department of the Hospital Universitario Fundación Jiménez Díaz is to satisfy the demand for imaging scans of the Hospital, both in its diagnostic and therapeutic facet, in the most efficient way and with the highest possible quality and safety for patients.

Portfolio of services

From a strict healthcare perspective, the mission of the Medical Imaging Department is to provide diagnostic and therapeutic support through imaging to clinicians in order to facilitate correct diagnosis and treatment.

Its main functions are:

- Diagnosis and staging.
- Monitoring progress.
- Displaying images of the injury.
- Demonstrating the absence of pathology.
- Taking tissue samples for analysis.
- Treatment when indicated.
- Teaching function.
- Research function.
- Quality control.
- Other functions inherent to a Central Service.

Equipment available

The Imaging Unit has the following technological resources:

General equipment: Nine direct digital radiology rooms (two located in the emergency department), one direct digital chest radiology room, one direct digital remote control, fifteen high-performance ultrasound machines, one portable bedside ultrasound system, one portable ultrasound machine, three surgical arches, and two portable radiology units.

High-tech equipment: Seven 1.5 Tesla MRI scanners (one intraoperative), two 3 Tesla MRI scanners (one with HIFU), four multidetector CT scanners (three of them spectral CT), two high-performance interventional radiology rooms (one of them biplane), two hybrid operating rooms with interventional radiology arches, four direct digital mammography machines (three with 3D tomosynthesis) and one direct 3D digital mammography machine with a prone table for biopsies.

Nuclear Medicine Equipment: one digital PET-TC, one SPECT-TC, one portable gamma camera.

3. Other material resources: 1 digital PET-CT, 1 SPECT-CT, 1 portable gamma camera.

Other material resources: Electronic medical records, RIS-Casiopea, Carestream PACS, ACI (archive of cases of interest), Report rooms, two medical consultation rooms, workstations with advanced centralized display systems (Syngo and Intellispace Portal).

Contact staff

The Service consists of two heads of department, 4 associate heads and 33 deputies, including 5 section coordinators and 11 residents.

The sections are organized according to an organ-system structure: general, vascular and interventional radiology, interventional neuroradiology, osteoarticular imaging, female breast and pelvis imaging, chest and abdomen imaging, cardiac imaging, pediatric imaging, and nuclear medicine.

2.12. Radioisotope laboratory

The radioisotope laboratory is a second-category radioactive facility, authorized and commonly used throughout the IIS-FJD, for performing all techniques involving the use of unencapsulated radioactive isotopes authorized in research projects and small animal X-ray densitometry.

Functions/service portfolio

The activities authorized to be carried out at the facility are those involving the use of non-encapsulated radioactive material for research purposes.

The main function is to ensure that all activities involving ionizing radiation carried out at the IIS-FJD, which involve the use of ionizing radiation, are carried out with adequate control of radioactivity.

Its main objective is to plan the activities according to the ALARA principle, i.e. optimizing techniques to minimize doses, including responsibility for compliance with current regulations.

Evaluations and reports:

- Planning of the different activities.

- Advice on construction design and modification of the radioactive installation.
- Estimation of radiological consequences during normal operations and in the event of an accident.
- Assessment of radiological risk arising from the operation of the installation.
- Preparation and maintenance of the required documentation.
- Daily completion of the operations log.
- Development of radiation protection standards for handling and use of equipment emitting ionizing radiation, radioactive products.
- Use of X-ray emitting equipment for research purposes.
- Mandatory annual report following inspection by the Nuclear Safety Council.
- Control of radioactive material: request/reception: rules and procedures.
- Hermeticity control of encapsulated sources of the FJD.
- Verification of radiation detection systems and measurements: contamination and irradiation.

Radioactive material. A procedure has been established for the standards and control of the request/reception of radioactive material. Acquisition is controlled by the Radiological Protection Department, in accordance with the specific procedure (P.E.02). Comprehensive management of radioactive waste generated by authorized activities is carried out (P.E.08). Technical support is provided for the ancillary equipment necessary for carrying out techniques with radioactive material (counters, refrigerators, stoves, security cameras, screens, protectors, protective material, etc.), as well as advice on its correct use. Advice is also provided on the use of ionizing radiation-emitting equipment under appropriate safety conditions.

Operational radiation monitoring. Daily monitoring of contamination and radiation levels in different work areas, using:

- Verification of the absence of contamination/irradiation after each application.
- Dosimetric control of exposed workers.
- Area dosimetry.

- Classification and marking of areas.

In case of incidents:

- Application of the rules of conduct set out in the Radiological Protection Service (SPR in Spanish) procedures manual.
- Application of emergency plans set out in the SPR procedures manual.
- Decontamination, in accordance with the instructions in the SPR procedures manual.

Radiation protection training:

- The Radiological Protection Service organizes training courses at intervals that are tailored to the needs of the sector. Generally, one course is held per year.
- Assistants. Mandatory for all personnel joining the various research laboratories who cannot provide proof of prior training at other centers (radioactive facility operator course).
- Course development: consists of at least six hours of theory and four hours of practical training. A certificate is awarded at the end of the course.
- Ongoing advice on the practice to be carried out by the Facility Supervisor from 8 a.m. to 3 p.m.

Equipment available / facilities

The radioisotope laboratory consists of the following premises:

- Cold Room 4ºC: for the storage of radioactive material with the appropriate safety measures.
- Gamma emitter handling laboratory. Equipped with: HPLC equipment; Electrophoresis equipment; Protective screens with shielding suitable for I 125; Extraction pumps to suitable waste tanks.
- Beta Emitter Manipulation Laboratory. Instrumentation room. Equipped with: Four protective screens with adequate shielding for phosphorus-32; Two hybridisation ovens; Five cuvettes with electrodes and sources for P-32 techniques (EMSA, Southern Blot);

Stirring platforms; Thermoblock; Baths; Containers suitable for depositing liquid and solid waste.

- Low-energy beta emitter handling room and metabolic studies. This facility is equipped with all the necessary resources for working with low-energy beta emitters with long half-lives (hydrogen-3 and carbon-14), with surfaces that are easy to decontaminate. All the necessary equipment is available for conducting metabolic studies on cell cultures with radioisotopes: Biological safety cabinet; Oven; Centrifuge; Shaking baths; Suction pumps; Beta counter; Extraction hood with filter; Two semi-automatic cell harvesters with their corresponding suction pumps; Appropriate containers for the liquid and solid waste generated.
- Thermocycler Zone: Four thermocyclers are available for PCR studies.
- Counter Room: this room houses the gamma counter, densitometer for small animals (mice), Secageles with vacuum pump, and hybridization ovens.
- Radioactive Waste Storage: Access is restricted to the facility supervisor who manages the entire storage, registration, and disposal process during the periods established by current regulations.

Contact staff

- Head of Radiation Protection Service: Julio Valverde, Radiophysicist. jvalverde@fjd.es
- Supervisor of the radioactive facility: Mar González García-Parreño, Biologist. mmgonzalez@fjd.es

2.13. IT Service

The activity of the Information Systems and Technologies Department focuses on providing solutions that meet the research and healthcare needs of the IIS-FJD and the hospitals that form part of it, in line with the strategic objectives set out: patient health, patient experience and efficiency, which have been the priority during 2023. The IT Service has the following main functions and objectives:

- Support users.
- Maintain and evolve technological infrastructure and information systems.
- Manage the Electronic Medical History.
- Maintain and develop different applications.
- Manage integration with Primary Care.
- Carry out strategic planning and project governance.
- Maintain documentation and generate key metrics in project management.

Currently, the IT Service consists of:

Responsible: Alberto Pinto Romero – Systems Director HUFJD

Staff:

Director of Information Systems
Alberto Pinto Romero

Departmental Integrations and Applications Coordinator
Nazareth Aurora Hernández Muñoz

Clinical Object Coordinator and Casiopea
Juan Carlos Jiménez Ibáñez

BI Coordinator
Juan José Serrano García-Ortega

Support Coordinator
Luis Alberto Blázquez Cañas

Functional team coordinator
Elena Martín Rodrigo

Project Office
Sonia Gámez Gámez

Security Officer
César Sendarrubias García

Systems Manager
Consuelo Sánchez Gil

Care Support Team
Isabel Clara Izquierdo Delgado

Data Analysts/BI
Ana Isabel Cortés Martínez
Beatriz Chocano Peña
Raúl Ceballos Sánchez
Aitziber García Alonso

Functional team and project management
Julián Checa Aceituno
Javier Árbex de Miguel
Alicia Rivera Alonso
Paula Orayen Russo
Ana María Díaz García
Óscar Calvo Escobar
Rocío López García
Alba Caballero Echeverría
Angie Correa Acosta
Carla Parra Collado

Systems Analysts
Guillermo García Martín-Camuñas
Saul Bravo Villamudria
Diego Domínguez Pérez

Equipment Clinical Objects and Casiopea
Juan Carlos Adrian Pradillo
Miguel Ángel Morales Coca
Victor Fabio López Pinteño
Roberto Carrasco Fernández

Departmental Integrations and Applications Team
Oak Square Conception
Alberto González Aranda
Álvaro Pascual Rodríguez
Fernando Zapatero Díaz

Support Team

Pablo Lorenzo Martín
Mario Navazo Ariza
Diego Domínguez Pérez
Alfonso Díaz Marcos
Shukria Saud Kokab
Alba Villafranca Martínez
Rubén Damián Bastante Rodríguez
Juan Ruiz Prieto
Eduardo Rodríguez Prieto
Josué Ugarte Mérida

Location: the IT service is located at c/Hilarión Eslava 55, building attached to the Fundación Jiménez Díaz.

2.14. Library

The library provides services to healthcare professionals at the Hospital Universitario Fundación Jiménez Díaz, as well as to the other three affiliated healthcare centers. The number of subscriptions includes those taken out by the hospital itself and those taken out by the virtual library of the Madrid Regional Health Ministry, to which all users are given individual access via their own passwords. All resources can be accessed remotely, and resources or documents not available through subscription can be requested.

Portfolio of services

The library's main services are requests for full-text articles and bibliographic searches for different purposes: supporting ongoing research, updating knowledge, preparing presentations for conferences or clinical sessions.

Additionally, the following services are offered:

- Bibliographic searches to locate bibliography in PubMed. Calculation of researchers' H-index.
- Advice for the publication of manuscripts, including a pre-review and selection of journals for submission.

- Calculation of the impact factor.
- Creation or update of the ORCID profile.
- Guidance to users on information management tools and topics related to publication.
- Sending a monthly newsletter to all library users.

Teaching work carried out

From the IIS-FJD Library, 40 hours of training have been carried out in 2024 for the professionals of the Institute, with workshops and courses related to bibliographic searches, reference managers, visibility of research, introduction to artificial intelligence, writing, publication and critical reading of scientific articles, training of users in library services, etc.

Subscriptions

Resource	Resource type	Subscription type
International Journal of Gynecological Cancer	Journal	In-house (hospital)
American Journal of Sports Medicine	Journal	In-house (hospital)
Minerva Médica	Set of 10 journal titles	In-house (hospital)
Annals of Internal Medicine	Journal	In-house (hospital)
Harrison Online; Access Medicine; Cases Files Collection (Harrison)	Books and learning platform	Madrid Virtual Library
Radiology & Radiographics	Journal	Madrid Virtual Library
Annals of Pharmacotherapy	Journal	Madrid Virtual Library
Pediatrics	Journal	Madrid Virtual Library
Journal of Rheumatology	Journal	Madrid Virtual Library
American Journal of Respiratory and Critical Care Medicine	Magazine	Madrid Virtual Library
European Respiratory Journal	Journal	Madrid Virtual Library
CINAHL Complete: Specialized resource in Care	Database	Madrid Virtual Library
Blood	Journal	Madrid Virtual Library
The Bone and Joint Journal	Journal	Madrid Virtual Library

Wiley's Medical & Nursing Collection	Journal platform	Madrid Virtual Library
Springer Collection	Journal platform	Madrid Virtual Library
Journal of Clinical Oncology	Journal	Madrid Virtual Library
Library management software	Software	In-house (hospital)

Contact staff

- Librarian: Dña. María García-Puente. info@alterbiblio.com

2.15. English Language Translation Service

Functions and objectives

The IIS-FJD has the services of the AdHoc professional translation agency, whose purpose is to translate and/or review scientific texts in different formats. Access to these services is available via the following link:

https://www.fjd.es/iis-fjd/es/unidadesapoyo/unidades-apoyo-investigación/servicio-traducción-lengua-inglesa

All clinical and basic researchers at the IIS-FJD are offered the option of requesting this service, which aims to promote the production of articles, book chapters, presentations, conferences, etc.

2.16. Clinical Documentation Service

The Clinical Documentation Service of the Hospital Universitario Fundación Jiménez Díaz collaborates with the IIS-FJD by facilitating all actions that contribute to promoting the research projects of the different IIS-FJD research groups in the field of clinical research support (development, maintenance and review of the HUFJD clinical database, preparation of reports related to the publication of articles, conferences and congresses, doctoral theses, etc.).

Portfolio of services

Clinical Documentation Activity

- Maintenance of the patient master file.
- Maintenance of electronic records (digitalization of clinical documentation).
- Preparation of clinical documentation for Legal Advice.
- Clinical documentation for patients.
- Management of clinical documentation from other hospitals.
- Quality control of medical records.

Clinical Coding Activity

- CIE-10-ES Clinical Coding.
- APR-GRD grouping.
- Review of clinical databases: Hospitalization, Major Outpatient Surgery (CMA in Spanish) and Day Hospital (HD in Spanish).
- Coding quality control.

Clinical Documentation Audit Activity

- Admission criteria check.
- Non-performed procedures check.
- Trial check.
- Transfer check.
- Accident check.
- Non-reported incidents check.
- Quality reports check (hospitalization, surgical, emergency).
- Audit activity claims check.

Clinical Information Activity

- Minimum Basic Data Set (CMBD in Spanish) check.
- MBDS submission to the Community of Madrid and the National Statistics Institute (INE in Spanish).
- Clinical Commission support: mortality, complications, and readmissions, Functional Health Risk Management Unit, and Clinical Documentation.
- Clinical information check: hospitalization cases, CMA, and HD.
- Complexity indicators, hospitalization management, mortality, complications, and readmissions.
- Clinical management support for Medical Services: clinical management reports and healthcare quality review for medical services.
- Hospital management support: clinical management reports and hospital care quality.
- Clinical research support and data for publications.
- Healthcare quality and patient safety reports.
- Quality Observatory and AHRQ indicator review.
- Pre-audits of healthcare activity.

Medical Audit Activity

- Implementation of NEWS2 in HUFJD (hospitalization setting).
- Automation of secondary diagnoses of malnutrition (hospitalization setting).
- Weight recording for hospitalized patients.
- Nutritional screening using the CONUT scale (hospitalization setting).
- Kidney transplantation at HUFJD: donation process.
- Kidney transplantation at HUFJD: transplantation process.

Certificates / projects / studies

- ISO 9001:2008 Quality Certification for Clinical Documentation Service.
- Clinical documentation standardization as the basis for a multicenter information system for clinical management.
- APR-DRG evaluation as a system for managing and coordinating hospitalisation activity at the HUFJD.
- Capitation system study with risk adjustment based on diagnoses..
- Methodological tool design for improving healthcare quality.
- Natural Language Processing (PLN in Spanish) tool evaluation to assist with ICD-10-ES coding.
- Predictive complication model development.
- Clinical information for accreditation and medical service awards.
- Service training for clinical documentation improvement.

Scientific outreach

The Service also produces publications in collaboration with various medical services, providing medical databases obtained from the coding of diagnoses and procedures in the HUFJD medical records from 1991 to the present.

Contact staff

- Heads of service: Catalina Martín Cleary and Blanca Rodríguez Alonso
- Two associate heads: Milagros Polo Ordoqui and Antonio Robles Albarrán.
- Two deputy doctors: María José Andrés Prado and Pilar Mielgo Bellver.
- Section Head: Mónica Díaz Herrero
- Other staff: DUE (10), Document Technicians (24), Administrative Staff (5), and Orderlies (1).