

**PERSONAL VERSION**

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**Title:**

From «Accident Medicine» to «Factory Medicine»: Spanish Occupational Medicine in the 20<sup>th</sup> Century

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**Abstract**

Occupational Medicine became established as a speciality in Spain through the enactment of related social legislation, beginning with the 1900 Compensation Law, although this competence was not assigned to the National Insurance system introduced in 1942-44. Clinical concerns dominated its first years of existence, following an «Accident Medicine» approach. In the 1930s, leaders of the profession moved towards a wider definition of aims that included psycho-physical, biological and socio-environmental issues, and a small directive agency was established within the National Insurance Institute. The Franco regime created a network of Factory Medical Services in large companies (since 1956), staffed by so-called Factory Doctors. The scheme was supervised by a small technical team who received no support whatsoever from the Work Inspectorate, the Public Health Service or the National Insurance Medical Services. The lack of autonomy, poor funding, inadequate training and technical weaknesses of the Factory Medical Services (repeatedly reformed in the 1970s), alongside the low priority given to scientific research, explain

the low profile of Occupational Medicine in the Spanish medical profession. International links with the former International Permanent Commission and the later ICOH have been maintained largely on a non-institutional basis.

**Keywords**

Accident Medicine, Factory Medical Services, Factory Doctors, professional training.

## 1. Introduction

Notwithstanding the late industrial development of Spain, Occupational Medicine was a widely practised medical speciality by the beginning of the 20<sup>th</sup> century [1]. The newly-won right of injured workers to healthcare, established in legislation on workers' compensation, and a growing culture of social intervention and medical expertise laid the foundations for the development of this new medical speciality. Regular training and teaching in the field was available from the mid-1920s and the first Spanish Society of Occupational Medicine was founded in 1934, although its activities came to an early end with the outbreak of the Spanish Civil War (1936-39).

The National Health Insurance system set up under the Franco regime (1939-1975) excluded the provision of occupational health services, and an alternative scheme was implemented based on the so-called Factory Medical Services (hereafter FMS). A new professional society linked to the FMS was founded in 1956, called the Spanish Society of Occupational Medicine and Safety, which was committed to the professional interests of the so-called Factory Doctors. This society monopolised the development and practice of the speciality in Spain, where university-trained specialists were excluded from the job market until the early 1980s. It did not become a federated member of ICOH until 1984, just a year after a new scientific society, the Spanish Association of Occupational Medicine Specialists, came onto the scene. The poor implementation of the FMS scheme and the duplication of conceptions, institutional settings and (to a lesser extent) training methods and practices of Occupational Medicine in the second half of the 20<sup>th</sup> century contributed to the consolidation of a model of industrial doctors employed by the factory owners and directly subjected to their priorities and interests. These conditions led to an undervaluation of this speciality in Spain.

We will first explore the foundation of the speciality prior to the Spanish Civil War. We will then offer an insight into the orientation of Occupational Medicine under the Franco regime, ending with a brief outline of the development of this branch of medicine in the last quarter of the 20<sup>th</sup> century.

## 2. Industrialisation and «Accident Medicine» in early 20<sup>th</sup> century Spain: The foundation of a new medical speciality

The weak and uneven industrial development of Spain ran parallel to a lack of concern about industrial hygiene among Spanish doctors and politicians until the last quarter of the 19<sup>th</sup> century. Industrial hygiene and medicine became fully incorporated into the political agenda in the first decade of the 20<sup>th</sup> century, when social reform made its presence strongly felt in Spanish public affairs and expert bodies were established within the State administration, including the Social Reform Board (1882-1902), the Institute for Social Reform (1903-1924) and the National Insurance Institute (1908-1977). As in other European countries, these expert bodies acted as observation posts to identify social problems and propose «scientific intervention» to address them. Based on the assumption of scientific neutrality, medical hygienists, among other reformers, claimed expertise that could underwrite their role as impartial arbitrators for reconciling class interests and could provide the scientific basis for reforming legislation [2].

The Compensation Law for Work Accidents passed in January 1900 represented a milestone in the development of Spanish Occupational Medicine. The law introduced the principle of professional risk and made employers economically responsible for accidents at work, upholding, as in other European countries [3,4], a compensatory approach to industrial hazards rather than an effective policy of prevention<sup>1</sup>. Besides the payment of compensation, the law forced employers to be responsible for the medical care of their injured workers. Although injured industrial workers were mostly sent to public hospitals (in the same way as rural workers were sent to municipal physicians), this precept and the need to evaluate the residual capacity of workers for the precise calculation of their compensation led to the creation of medical services linked to insurance companies, which flourished after 1900. Between 1900 and 1902, ten new insurance companies emerged, most of them subsidiary branches of European firms [5]. At the same time, the number of health care institutions and factory-employed physicians substantially increased [6].

Private insurance medical services, which aspired to be at the centre of this new medical speciality, played a major role in its adoption of the «Accident Medicine» model (the German term was *Unfallheilkunde*, *Infortunistica* in Italian). As Jaime Guerra Estapé (1860-1947) pointed out in support of this approach, the 1900 law called for a physician to be «the most powerful and most appreciated guide of judges» [7,8]<sup>2</sup>. According to this view, the industrial physician was entrusted with the noblest of missions, and one of greatest importance to the community: the gathering of new clinical, mechanical, anatomical and physiological facts (primarily used for the detection of fraud), and the development of new health care schemes aimed at speeding up the recovery process so that work could be resumed (it was plainly admitted that this was not the case with well-to-do patients). Accident Medicine should, therefore, have a specific Pathology, Therapeutics and Forensic Medicine of its own. The main tasks of this new specialist were declared to be the provision of efficient first aid care, the carrying out of initial and regular medical examinations and the forensic evaluation of workers' residual capacity [7]. This conception of Occupational Medicine exerted its influence until the latter part of the 20<sup>th</sup> century.

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<sup>1</sup> The law was reformed three times before the Civil War, in 1922, 1931 and 1932, each time increasing the range of occupations covered; rural workers were included from 1931. Until 1922, employers were free to cover or not their risks through an insurance company (whether a private one or a mutual benefit society); from that date on, the establishment of mutual benefit societies was enforced (according to the German model). In 1932, accident insurance became compulsory for most economic activities and a National Insurance Fund was set up to protect workers when employers were unable to pay.

<sup>2</sup> Guerra was medical director of an insurance company based in Barcelona (*La Hispania*). After attending the IV International Medical Congress of Work Accidents held in Liège, he fostered in 1906 the creation of the Spanish Commission of the International Association of Insurance Company Doctors, which had its own journal: *Medicina y Jurisprudencia de Accidentes de Trabajo y Seguros de Vida* (Barcelona, 1906-1907).

Public and medical concerns about disability and the rehabilitation of injured workers and invalids strengthened the foundation of the speciality. In 1923, after the passing of the new Accident Law (1922), an Institute for the Professional Rehabilitation of Work Invalids was established in Madrid [9,10]<sup>3</sup>. Its first director was Antonio Oller Martínez (1887-1937), an orthopaedic surgeon who had trained for four years in Switzerland, where he had been an intern under Prof. E. Kocher and acted as a surgeon in different «accident hospitals» for workers [9,11]. He also ran the medical section of the Institute (composed of a surgical ward, several out-patient consulting rooms and out-patient departments of physiotherapy, orthopaedics, among others). Oller was appointed Physician-in-Chief of the National Insurance Institute, where he played a significant role in the further extension of compensation and the general betterment of the law under the provisional Republican Government. As early as 1926, he had been nominated as a member of the Society for Social Progress, an umbrella organisation that brought together the cream of Spanish social reformists [11]<sup>4</sup>. He shouldered the task of organising the National Compensation Fund and subsequently created the Clinic for Industrial Medicine of the National Insurance Institute (*Clinica del Trabajo*), which opened in April 1933. Closer to the German model of healthcare facility than to the research and teaching model of the *Clinica del Lavoro* founded by Devoto, the activity of the Clinic was closely linked to the requirements for specialised care imposed by accident and maternal insurance legislation enacted in the early 1930s.

The specialised training and the scientific and clinical activities carried out at the Institute for Professional Rehabilitation and especially at the Clinic for Industrial Medicine were the driving forces behind the formal establishment of Occupational Medicine in Spain. Oller organised annual courses on «Accident Medicine» (1928, 1929) or «Industrial Medicine» (1930-36), which were later extended to the National Public Health School under the title of «Industrial Hygiene» (1931-36). The training programme, which included clinical sessions, seminars, research guidance for doctoral theses, and visits to major industrial and mining complexes, was consolidated with the starting up of the Clinic of Industrial Medicine. The scope of the training widened, and the Industrial Medicine courses given at the Clinic after 1933 included Physiology of Work, Professional Guidance, Scientific Organisation of Work, Hygiene, Work Diseases, Work Accidents, Legislation, Insurance, Work Inspectorate and Forensic Medicine for work accidents and diseases [9].

The first graduates of this course at the newly opened Clinic formed the membership of the Spanish Society of Occupational Medicine, which was set up in January 1934 and chaired by Oller [12,13]. Because Society membership was restricted to physicians who had passed these Industrial Medicine courses, these became considered the official training in the speciality [9]. At the same time, the courses were regarded as a preferential condition for gaining a position

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<sup>3</sup> In 1920 in Bilbao and 1922 in Barcelona, two other similar centres for the rehabilitation of invalids had been founded by two private charity organisations.

<sup>4</sup> The Spanish Section of the International Association for Legal Protection of Workers, the Society for the Study of Unemployment and the Spanish Committee for International Congresses of Social Insurances all joined under the label of «Social Progress» and the leadership of Viscount Eza, a Liberal minister.

in the Medical Inspectorate of Work, founded in August 1934. The Medical Inspectorate, suppressed in 1939 by the Franco regime, was a further attempt to establish a specialised medical branch within the Work Inspectorate that would enhance the preventive dimension of the speciality, after the short-lived (1926-1930) and poorly-financed establishment of a Medical Inspectorate of Mines, supported by the International Health Board of the Rockefeller Foundation [14].

Oller's active international participation did not compensate for the erratic or non-existent institutional support given by Spain to the International Permanent Commission on Occupational Diseases in the 1910s. This Commission, founded in Milan in 1906 [15], was created around a comprehensive conception of work disease, closely linked to a broad-based «Medicine of Labour» in which hygienists, toxicologists and clinicians were of prime importance. It was far less concerned with medico-legal concepts of accidents or injuries. Differences with the Liège Committee (pro-Accident Medicine) were gradually overcome in the late 1920s [16]. Spanish contacts with the International Permanent Commission had started in 1910, when D. Glibert promoted the appointment of a Spanish delegation to the II International Congress on Occupational Diseases. The delegation, chaired by former General Director of Health Francisco Cortajarena Aldevó (1835-1919), also included José Ubeda Correal (1857-1918), a military pharmacist and very active member of the Institute for Social Reform in industrial matters, and José Codina Castellvi (1864-1934), Professor at the University of Madrid and an expert in ancylostomiasis, one of the topics addressed at the congress. In the aftermath of the congress, they were appointed members of the International Permanent Commission [17,18]. The disappearance of the Institute for Social Reform in 1924 — the institution responsible for industrial hygiene matters — and the lack of any official agency in Spain involved in this field, meant that those engaged in Accident Medicine became the main Spanish participants in the Commission. Oller and other colleagues from the Institute for the Professional Rehabilitation attended the three international congresses on work accidents and occupational diseases held between 1925 and 1931. At all these conferences, the Spanish participants focussed on accidents and to a lesser extent on psycho-technical orientation, paying minimal attention to the field of occupational diseases<sup>5</sup>. The premature death of Oller in 1937 (when his activity at the Clinic for Industrial Medicine was benefiting from a wider concept of the speciality) and the outbreak of the Civil War, followed by the international isolation of the Franco regime in the 1940s, delayed further institutional contact with the International Permanent Commission and relationships with this body were maintained on a personal basis.

### 3. The «Spanish way» to Occupational Health Services: Factory Medicine as «applied» Industrial Medicine

The new state born after the Civil War prompted a radical rupture with the past and a denial of any historical continuity with the previous political Republican order. Nevertheless, recent historiography has pointed out

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<sup>5</sup> The proceedings and reports of the seven international congresses held prior to the Spanish Civil War have been reviewed.

elements of continuity between Republican and Francoist health administrations [19], including in occupational health.

The institutional core of the new occupational health organisation was the National Institute for Medicine and Safety at Work (hereafter NIMSW), set up in 1944 and attached, as before, to the National Insurance Institute. The NIMSW was responsible for research, professional training, healthcare assistance and rehabilitation and popularisation campaigns. The well-equipped clinic attached to the NIMSW, as in the case of the pre-Civil War Clinic for Industrial Medicine, was not restricted to occupational matters but rather covered the whole range of specialised care required by the National Insurance system [20].

Training and research in medical matters were entrusted to the National School of Industrial Medicine, established within the NIMSW in 1948. The School, linked to the University of Madrid, was considered as a postgraduate centre for the specialised training of Orthopaedists, Surgeons, Rehabilitation specialists and, primarily, Factory Doctors, who were to form the professional basis of the new occupational health scheme. Company or Factory Medicine was defined as «applied» Industrial Medicine and was acclaimed by its supporters as a genuine Spanish alternative for the provision of specialised care and expertise at the workplace — after occupational health had been excluded from the competences of the newly established National Health Insurance system [21,22].

Narciso Perales Herrero (1914-1993), head of the Industrial Hygiene Service of the NIMSW and a distinguished member of the dissident faction of Phalange, the fascist party, played a leading role in the establishment and development of the new scheme. In 1956, the establishment of an FMS became compulsory for companies employing more than 500 workers, later extended to those employing more than 100. In 1959, the Factory Medical Services Organisation (hereafter FMSO) was set up within the NIMSW and given the task of supervising the FMS. The FMSO also controlled access to the new specialised job market, which was restricted to practitioners who qualified as Factory Doctors after an intensive six-month training course, mainly theoretical [23].

The main duties of the FMS were as follows: clinical examination of newly employed workers and periodical examination of those exposed to certain risks; monitoring of absenteeism and sick leave; professional orientation and selection; supervising hygienic conditions in the workplace; recording of accident and occupational disease statistics; and administration of first aid in the case of accidents or disease at work. Their competence in safety and prevention became limited to formal investigation of the cause of work accidents and occupational diseases, although attempts were made to compile a so-called «hygienic diagnosis of the factory» [21]. This is a pompous definition of a task that was virtually unachievable, given the lack of expertise and means in the FMS and the lack of support from the understaffed Industrial Hygiene Service of the NIMSW.

A steady rise in work accidents in Spain during the 1960s, a period characterised by industrial growth, revealed the weakness of the industrial safety and occupational health scheme. From 1955 to 1967, the number of recorded accidents at work (excluding workers without insurance) more than doubled (522 350 in 1955 to 1 099 637 in 1967, with 2639 fatal accidents in 1969). Occupational disease statistics ran in parallel to those for accidents,

although at a lower scale [24]. Indeed, the slow and limited implementation of the FMS meant that most factories and workers were not covered by the scheme. In 1969, only one in five (21.5%) of the 8.5 million insured workers were employed in factories with FMS [24]. Public concerns and a desire to extend the scheme to smaller companies prompted the adoption in 1971 of a National Plan for Work Safety and Hygiene and the creation in 1976 within the Ministry of Labour of a Social Agency for Hygiene and Safety at Work. All services dealing with occupational health and safety were integrated into this Agency, including the FMSO. Both measures were ineffective in terms of the coverage gained, because of the failure of most small companies to join the scheme and the growing submerged economy [23,25]<sup>6</sup>. In 1978, all competences on safety were transferred to a newly created National Institute of Hygiene and Safety at Work, which promoted the establishment of a network of Provincial Departments of Hygiene and Work Safety with the necessary technical expertise [23].

In 1970, Perales himself summarised the main obstacles to the activities of the FMSO as being: the employers' reluctance to implement the FMS; the atomisation of the work force; the difficulties of supervising FMS in the absence of support from the Work Inspectorate, National Insurance Institute or NIMSW; the poor training of the Factory Doctors (initially factory-paid physicians already responsible for the care of workers who received an abridged one-month course at the National School of Industrial Medicine); and the lack of regulation of their appointments, salary and conditions of work [24].

Despite the consolidation of a new professional market, Factory Doctors were generally underpaid, part-time (holding more than one job), and wholly dependent on the factory owner. At any rate, the FMSO monopolised the specialised job market and denied entry to Occupational Medicine specialists trained at Professional Schools of Occupational Medicine. These schools had been set up in the 1960s and 1970s at different Spanish universities (Granada, Barcelona and Madrid) under 1955 legislation issued by the Ministry of Education on the teaching and practice of medical specialities. The teaching programme of the speciality spanned two academic years and remained over-theoretical, although some clinical and experimental training was included. Among the wide range of issues addressed, industrial toxicology and medico-legal matters received particular attention, because the schools were attached to university departments of Forensic Medicine and Toxicology [26].

The duplication in training and qualifications was reflected in the creation of two professional associations. In 1956, the first graduates in Factory Medicine from the National School of Industrial Medicine founded the Spanish Society of Occupational Medicine and Safety, chaired by Alfonso de la Fuente Chaos (born 1908), Professor of Surgery at the University of Madrid and Director of the NIMSW at that time. The Society was strongly committed to the professional and scientific interests of Factory Doctors, who were enrolled on a massive scale. An important role in the Society was also played by a small number of civil engineers and technicians, mainly members of the Industrial

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<sup>6</sup> In 1988, the number of companies with FMS became stagnant at around 5500, with some 2 million workers covered.



Hygiene Service of the NIMSW, and by Factory Nurses trained at the School of Industrial Medicine. In 1957, a Catalanian branch was established, later called the Catalanian Society of Occupational Medicine and Safety. Catalonia, Spain's most industrialised region, traditionally contained the largest number of specialists, and the branch membership quickly rose to over 600. In the 1970s, new regional branches were set up, and the Society was transformed into a federation of autonomous societies with a total of some 3000 members [27].

The Society held national scientific congresses on an irregular basis and was responsible for the organisation of the XIV International Congress of Occupational Medicine in 1963. Until 1985, the meetings included a section on industrial hygiene promoted by the active technicians enrolled in the Society. *Medicina y Seguridad del Trabajo*, the scientific journal published by the NIMSW since 1952, acted as a semi-official journal of the Society. Regional societies later lengthened the list of specialised journals in the field. The international contacts of the Society remained on a personal basis, as before the Civil War. Many members of the numerous Spanish delegation led by De la Fuente and Perales at the IX International Congress became individually affiliated to the ICOH in 1948 [28]. After running the XIV International Congress held in Madrid in 1963, Perales became Vice-president of ICOH (1963-1966). Nevertheless, the Society did not become a federated member of ICOH until 1984, when its president successfully made the proposal to L. Parmeggiani during the XXI International Congress held in Dublin [29, 27]<sup>7</sup>. However, this membership was only effective until 1990, when the Spanish society failed to maintain its subscription.

Scientometric analysis of Spanish scientific production in this field during 1965-1976 shows the scant productivity on the topic and the rather clinical orientation of the speciality. Only 2.3% of the Spanish medical articles recorded in the main Spanish medical catalogue dealt with occupational health matters. Particularly striking was the lack of a core group of researchers in the speciality and the very small proportion of basic or experimental research carried out (only 1 out of 4 articles). «Occupational diseases» ranked fourth among issues addressed by Spanish researchers, after «Medical examination and professional orientation», «Factory Medicine», and «Safety, prevention and first aid» [30].

The activity of the university departments that governed the Professional Schools of Occupational Medicine did not significantly improve this poor scientific panorama, because occupational medicine never became a priority on their research agendas. Nevertheless, their graduates became more successful in the job market in the late 1970s and 1980s, after the Spanish High Court ruled that their exclusion from FMS was illegal, and after the training was strengthened by new legislation on medical specialisation (in 1984 and 1988) and by the entry of Spain into the European Union [31]. In 1983, the foundation of the Spanish Association of Occupational Medicine Specialists, open only to holders of this qualification, endorsed the changing situation and pointed towards a renewal of scientific and professional activities [32].

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<sup>7</sup> In March 1985, Parmeggiani was invited to the Spanish National Congress held in Barcelona where he was granted Honorary Membership of the Society.

The two societies came closer together after the role of medical professionals in occupational health matters was challenged by the 1995 Law on Prevention of Occupational Risks. This legislation expanded the professional market for Occupational Medicine specialists, by giving a leading role to mutual benefit societies for occupational diseases and work accidents. However, the new law appears to have missed an opportunity to widen the scope of Occupational Medicine in Spain.

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