Veterinary epidemiology in Italy has very deep roots. During the Etruscan times, and possibly before, the Aruspices were using the lesions found in the viscera of animals (see e.g. the Etruscan sheep liver of Piacenza) for their divinations.

In his history of Rome, Titus Livy (60 B.C.-17 A.D.) cited a number of animal epidemics; in particular, he narrated that in the year of Rome 328 (425 B.C.) a skin disease had affected all livestock and their caretakers. Virgil (70-18 B.C.), Ovid (43 B.C.-18 A.D.), and Vegetius (383-450 A.D.) described animal epidemics. Varro (1st century of the Christian Era) suggested to keep herds in small groups since the large ones proved to be more exposed to contagious diseases; he also proposed one of the first governmental regulations on isolation, and his concepts influenced the following agro-zootechnical organisation. In that same period, Columella recognised bovine animals as carriers of contagious pleuropneumonia. Seneca (5 B.C.-65 A.D.) mentioned pestis manufacta, i.e. bacteriological and chemical war.

In the Middle Ages, the Venetian Senate provided for death penalty for those slaughtering and using the meat of anthrax-affected animals.

Hieronymus Fracastorius (1480-1553) described the epidemiology of syphilis in the poem Siphilidis sive de morbo gallico; he also dealt with the epidemiology of rabies and canine infections. Augustinus Gallus (1499-1553) discussed the epidemiology of foot-and-mouth disease and contagious pleuropneumonia.

An important contribution was given between late 1600 and 1700 when an epidemic of cattle plague (the “great mother” of veterinary epidemiology, the same as bubonic plague in human epidemiology) exterminated the European bovine population. Different Italian authors of that time were involved in the issue, and some of them will be cited below.

Giovanni Maria Lancisi, papal archiater, enforced such measures for affected farmers as the isolation of infected herds and especially “stamping-out” which was named “Lancisi’s method” for several years.

Ludovico Antonio Muratori, officially a priest and a librarian, provided a basic contribution for the use of epidemiology in health policy. In his “Annals of Italy” information is found on human and animal epidemics. His greatest contribution to the health sector is found in the book “Del governo della peste, e delle maniere di guardarsene, diviso in Politico, Medico et Ecclesiastico” (About the management of plague and the ways to prevent it, divided into Political, Medical and Ecclesiastical) in which he tackled both human and bovine plagues as reciprocal models, in accordance with the concepts of “one medicine”. He supported the term contagium, already employed by Fracastorius, and
used “modern” adjectives such as epidemic, endemic and sporadic. He discussed socio-economic consequences, and expressed some concepts of urban veterinary hygiene based on a correct co-existence between man and animals. He also stressed the role of trade and of movements of people, animals and goods. He affirmed that politics and animal and human health are closely correlated with one another.

Other authors committed to the study and control of cattle plague, thus attaining significant information, were Berardino Ramazzini (pioneer of occupational medicine), Antonio Vallisneri, Carlo Francesco Cogrossi, Francesco Bonsi, Carlo Giovanni Brugnone, and others.

In 1770, Antonio Zanon wrote the first history of Italian veterinary medicine where he reviewed the most important animal epidemics in Italy and proposed the institution of veterinary schools. Indeed, the first Italian schools were founded after the cattle plague pandemic. In order of foundation, we shall mention Padua (1765), Turin (1769), Bologna (1783), Ferrara (1786), Milan (1790), Modena (1791), Naples (1795), Palermo (1796), Rome (1806), Parma (1815), Pavia (1817), Pisa (1818) and others. Not all these schools are presently active.

Alfonso Corradi described human and animal epidemics occurred in Italy from 1601 to 1800.

Of special interest is the concept of Roberto Fauvet expressed in 1842 in his book “On the epidemic diseases of livestock” in which he spoke of “non-contagious epizootics” referring to non-infectious illnesses affecting several animals at a time.

During the XVIII to XIX centuries, animal infections not aetiologically identified but defined from the clinical and epidemiological viewpoints and with regard to their socio-economic health impact were described in health legislations and regulations of different Italian states along with the prescribed relevant measures. Such laws did not concern only diseases of animals (cattle, swine, sheep and goats, equines) but also foods of animal origin and the presence of animals in urban areas. The sole clearly defined infection (apart from its causative agent) is rabies, subject to detailed, precise rules.

The edicts on the control of animals diseases of both the pre- and post-unitary periods were promulgated by the Health Authority and contained informations on epidemiology, clinical signs and control measures. The “Italian model”, i.e. the assignment of public veterinary activities to the health administration, was taken as a rule; the concept became accepted according to which organised structures monitoring the territory and planning control were required to fight epidemic and endemic diseases in animals.

The bacteriological era led to the aetiological definition of many infections and in several cases to the development of vaccines. This coincided with the constitution of the Unitarian State of the institution of public Veterinary Services.

Two main trends became evident. a “vertical” one privileging the knowledge of causative agents and developing tools to combat them, chiefly through diagnostic techniques and vaccinations. The other “horizontal” trend, linked to the already existing organisational models complemented by information on aetiological agents and vaccines, contrasted infections by organising services and control means (veterinary police). Both tendencies had important supporters in the academic and professional worlds. Of course, there were also positions recommending a combination of both approaches.

Most States presently constituting Italy, in the pre-unitary period had their own regulations concerning veterinary matters, implemented by the Health authority. The
legislation of the Kingdom of Sardinia was basically adopted after the unity. Gradually, the public veterinary services were organized at the national, regional, provincial and municipal levels. A network of ten Istituti Zooprofilattici Sperimentali was constituted in the first half of the 20th Century. A section of veterinary medicine was constituted at the Istituto Superiore di Sanità on the same period. This organization, which required some decades, has permitted the construction of an extended surveillance system. The concept of prevention has prevailed, and control programs have been organized. Important animal infections such as foot-and-mouth disease, dourine, glanders, rabies (urban and sylvatic), swine trichinellosis; bovine trichomoniasis, classic and african swine fever (still present in Sardinia) have been eliminated from the national territory. Partial success has been obtained in the control of brucellosis, bovine tuberculosis and leucosis. The control of cystic echinococcosis has presented problems and failures. An important success has been the elimination of bovine spongiform encephalitis which has posed, together with avian influenza, the problem of the pressure by mass-media.

The bacteriological era had first focused attention on transmissible diseases of animals, and then gradually expanded its interests. Increasing importance, because of both sanitary and economic implications, was attached to food safety, that was initially called food inspection, later on food hygiene, and was eventually given the present denomination thanks also to the contribution of epidemiology. More and more obvious risks stemmed from mass production and from national and international exchanges. Growing need for consumers’ safeguard called for continuing surveillance based on laboratory and epidemiological competences as well as for exchange of information on quality and biological characteristics (drugs, endocrine disrupters, and other xenobiotic products).

Other emerging sectors were the management of populations of income-producing animals (e.g. cattle registration), pets (e.g. dog registration), unwanted species (e.g. stray dogs and pigeons), and wildlife. Another issue requiring epidemiological surveillance was veterinary action in non-epidemic emergencies.

Epidemiological surveys centred on risk analysis and economic evaluations were and still are a basis for a prophylactic-therapeutic approach and for the choice of most appropriate drugs. Drug-resistance and economic problems (costs of drugs, interventions and products of animal origin) emerged gradually and influenced the choices. This process (which determines prophylactic and treatment protocols) also includes the evaluation of residues in products of animal origin and in the environment.

The globalisation widened contacts (trade, migrations, tourism) and, as a consequence, the risks linked to infectious factors and to the presence of pollutants and drug residues in foods of animal origin. The Europen Union, in turn, has imposed and is imposing the necessity of updating objectives and methods, and is demanding efficiency and continuity of prevention activities. Requirements have grown in the field of international surveillance because Italy is a country both importing and exporting animals and animal products.

The Italian Veterinary Services have been collaborating for years with FAO, OIE and WHO which co-ordinate surveillance and information exchange worldwide. The collaboration with the WHO Mediterranean Zoonoses Control Centre of Athens has received strong attention from its foundation in 1978. Such a relationship was strengthened by the institution of two Collaborating Centres in Rome and Teramo.

The law which in 1978 reformed the National Health Services confirmed the loction of public veterinary services in the Health administration. In the Local Health Agencies they
were located in the Department of Prevention, and organized in three working areas: animal diseases, food safety and environment. A chain of responsibility has been created, starting from the European Union to the Nation, the Regions and finally the Local Health Units. The system is supported by the network of the Istituti Zoopofilattici Sperimentali and by the Istituto Superiore di Sanità which recently has reorganized its Department of Nutrition and Veterinary Public Health.

Veterinary School, which presently in Italy are 14, shows different attitudes towards epidemiology. In some school it is an autonomous subject, in some other it is inserted in others (biomathematics, infectious and parasitic diseases, food hygiene), and finally in others it is neglected.

The training of veterinarians in epidemiology (involving both public veterinarians and those working in private sectors requiring such skills) is often insufficient.

Actions able to eliminate such infections as foot-and-mouth disease, swine fever and rabies have now turned into measures keeping the country infection-free; this same need for maintaining the infection-free condition is extended also to situations in which problems such as the control of dog straying or pigeon overpopulation have been solved.

Food safety implies a continuing revision of possible pollutants, because the “contamination industry” is sometimes “quicker” than the control capacity of veterinary services. Also environmental pollutants such as dioxins or PCBs constitute risks for foods of animal origin and command growing attention.

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