

Swine practice: Planning for the 21st century

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Summary

There is potential for pig veterinarians to broaden the range of services they provide into areas that might, initially, appear to be nonveterinary. In order to compete successfully for this market, the veterinarian must be educated in a wide range of ancillary areas and must demonstrate expertise for which the consumer is prepared to pay. Regulatory changes could create new opportunities for veterinary services. Opportunities exist for greater involvement in quality assurance schemes, animal welfare, disease control and eradication programs, biosecurity procedures, environmental programs, and enhancement of food safety. Food safety programs will require close ties among veterinarians, government agencies, producers, meat processors, pharmaceutical manufacturers, consumer associations, and transporters. Because the veterinary consultant will need to play an active role in developing programs designed to improve food safety and the consumer's image of pork, food-safety-related veterinary services, laboratory services, consultancy, and quality assurance practices are likely to expand in the future. Consumer pressure could radically influence systems of intensive pig production in the future, particularly the confinement of sows, the use of totally slatted floors, and the use of farrowing crates for lactating sows. The pig veterinarian will play a key role in developing and advising about alternative systems of housing that both satisfy welfare requirements under commercial conditions and allow pork to be produced profitably. The demand for laboratory procedures is increasing. The support of a laboratory not only enhances the quality of professional services, but could also increase client satisfaction, and broaden the range of services provided by the consultant.

Keywords: swine, practice, industry

Received: July 8, 1997

Accepted: April 30, 1998

As the global swine industry evolves, swine practitioners must consider their changing opportunities. The world pig meat market is expanding (Figure 1);¹ so, however, is the average herd size. The larger multiherd corporations may employ in-house veterinarians, reducing the need for pig consultants. BeVier² estimated that only 500 swine veterinarians were practicing in the United States

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This article is available online at <http://www.aasp.org/shap.html>

swine industry, servicing an annual production of about 90,000,000 slaughter pigs (Figure 2). He further notes that 20 veterinarians were employed by the 20 largest producers with an annual production of 10 million slaughter pigs. Veterinarians employed by the largest producers serviced approximately three times the number of pigs than that serviced by practicing veterinarians.

In the United Kingdom, the veterinarian:sow ratio is 1:15,000 sows.³ In Ireland, there are currently eight veterinary consultants to service the pig industry of 175,000 sows,⁴ a ratio of 1:22,000 sows. The structure of the Irish pig industry has also changed markedly in the past 15 years. As the pig industry has intensified, fewer units have been producing pigs, and mean herd size has increased. The consolidation of the Irish processing industry was accompanied by a 60% expansion of the national sow herd, which created an expanding market for pig consultancy and laboratory services (Figure 3).

New challenges confront the pig consultant as the 21st century approaches. The continued expansion of corporate herds may create opportunities for veterinarians to work with swine; however, this could prove costly to private practitioners if a substantial portion of their practice is lost to corporate veterinarians. This paper examines the

Figure 1

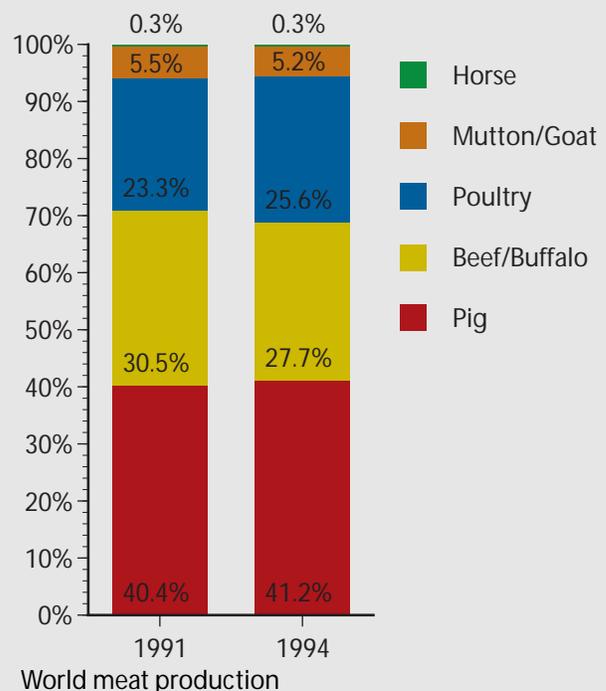
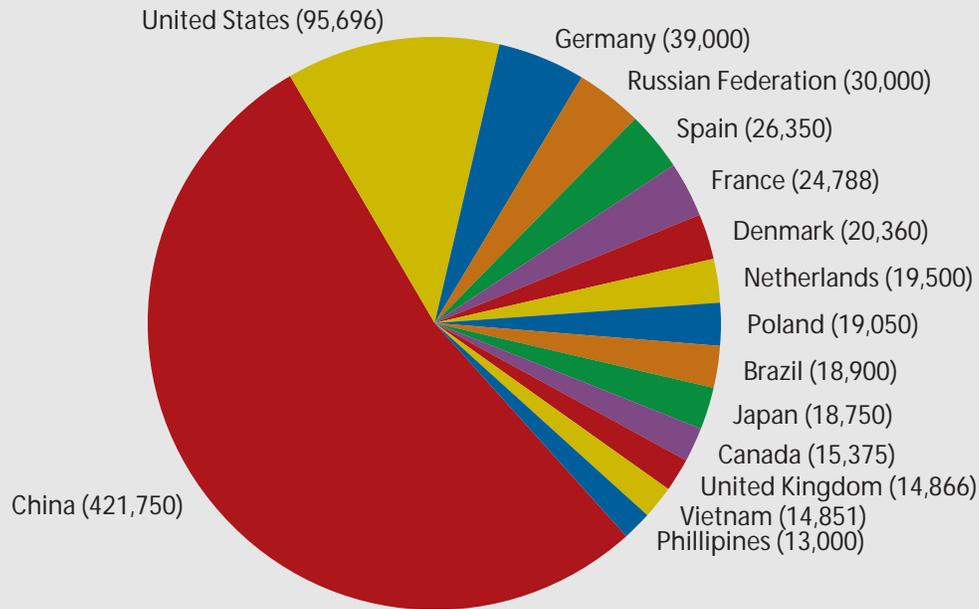
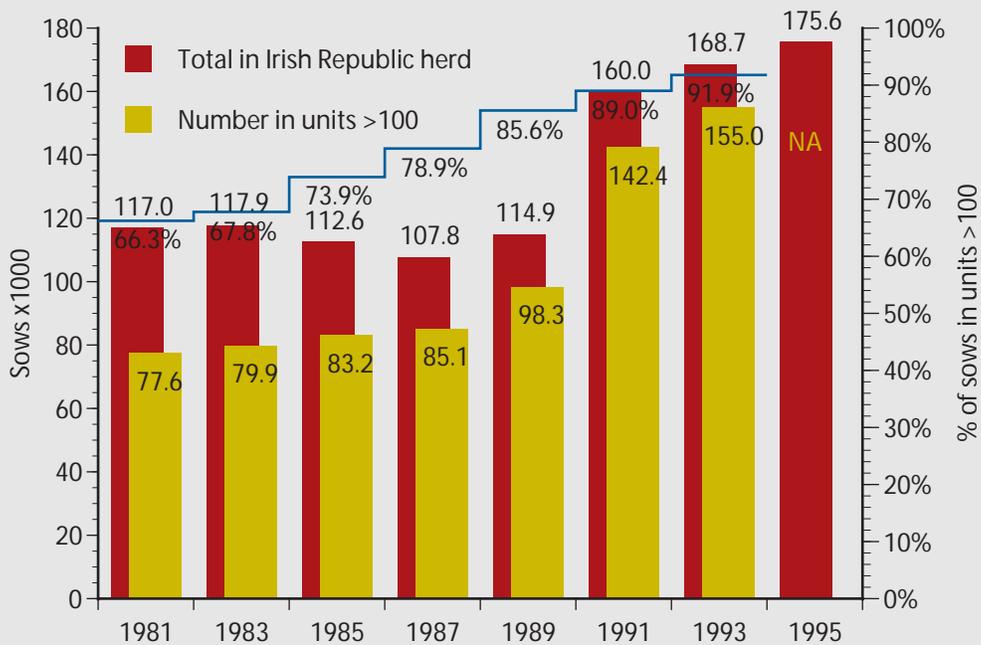


Figure 2



Pork production by nation (x1000 pigs slaughtered)

Figure 3



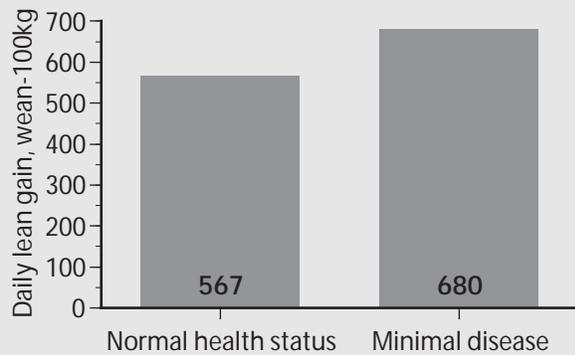
Consolidation of the Irish processing industry

effects that global changes in the pig industry have had on swine practice, and suggests ways for practitioners to take advantage of new opportunities.

High health and biosecurity

The ability of a pig to reach its genetic potential is influenced by its health status. Under Irish conditions, a minimal-disease herd can out-

perform a more typical herd with endemic disease by approximately US\$9.50 per pig (Figure 4). Depopulation/repopulation strategies require strict biosecurity programs to maintain minimal disease health status. The cost of a depopulation-repopulation program under Irish conditions is approximately US\$350,000–US\$400,000 per 1000-sow unit, making it likely that producers who choose this strategy will be interested in protecting their investment by hiring a veterinarian to play

Figure 4

Productivity gain associated with high health status

a role in monitoring and advising on biosecurity procedures.

Food safety

Veterinary advisory services to the intensive livestock industries have been influenced by regulatory changes. In Ireland, the Animal Remedies Regulations⁴ require veterinarians who service intensive pig farms to visit the farm at least every 60 days; otherwise, the practitioner cannot prescribe medications or issue prescriptions for medicated feedstuffs. The regulations define an “intensive unit” as one in which animals are kept in such numbers or density that their health and welfare are dependent on frequent human attention. This increases the involvement of the veterinarian in the herd and creates an opportunity to become more closely involved in developing quality assurance schemes geared towards satisfying consumer demands in relation to food safety and animal welfare. Food safety is a highly political issue that can be used by individual states to enhance their image with the consumer to the detriment of their competitors. Food safety scares are most commonly associated with disease outbreaks, particularly food poisoning, in humans.

In 1991, the Royal College of Veterinary Surgeons issued a report stating that the health and welfare of animals and their impact on public health and the environment should be a priority for the veterinary profession.⁶ Food safety programs will require close ties among veterinarians, government agencies, producers, meat processors, consumer associations, and transporters. Because the veterinary consultant will need to play an active role in developing programs designed to improve food safety and the consumer’s image of pork, food-safety-related veterinary services, laboratory services, consultancy, and quality assurance activities are likely to expand in the future. Food safety codes and/or regulations will create an expanding need for analyzing feed, poultry offal, and meat for *Salmonella*. Quality assurance programs will require the veterinarian to closely supervise the use of medicinal products on-farm and to design and organize on-farm systems to minimize the risk of producing carcasses that contain violative tissue residues.

Welfare

In the EU, animal welfare is high on the political agenda. Consumer pressure could radically influence systems of intensive pig production in the future, particularly the confinement of sows, the use of totally slatted floors, and the use of farrowing crates for lactating sows. As of January 1999, the use of stalls and tethers are banned in the United Kingdom. As early as mid-1998, major supermarket chains are responding to the influence of consumer pressures on these welfare policies by banning the import of pig meat from systems that fail to satisfy the new regulations. This could have a marked impact on the potential of some countries to export pig meat into the United Kingdom in the future. The policies of the major supermarket chains appear to be driven primarily by consumer preference for housing that they perceive to be welfare friendly; however, alternative systems of housing nonlactating sows, such as those involving large dynamic groups, may also experience welfare problems. The involvement of the major supermarket chains in farm-level pig production is currently being expanded to include such topics as food safety.

Developments such as these have created a demand for a close liaison between pig industry experts with representatives of the major supermarket chains. In Ireland, this relationship has been achieved by setting up a technical committee—representing the pig industry and the supermarkets—to draw up new policies. The committee will also improve relations with consumers, with a view to assisting them in molding their opinions on the basis of scientific and factual information rather than media-promoted “perceived” welfare issues.

The pig veterinarian has a key role to play in developing and advising about systems of housing that both satisfy welfare requirements under commercial conditions and allow pork to be produced profitably.

Environment

The impact of pork production on the environment is another area where regulatory changes have also created opportunities in laboratory services to agriculture. The integrated pollution control license, which is administered by the Irish Department of the Environment, stipulates that regular environmental impact assessments and spreadland soil analysis be conducted. The EU Rural Environment Protection Scheme (REPS) is aimed at protecting the rural environment. Both these programs place a strong emphasis on controlling nutrient use—especially phosphates—in agriculture, and therefore require regular analysis of the soil, and surface and ground water. The more progressive farmers require soil and fertilizer analysis as part of their slurry disposal program to maximize the economic efficiency of grass and crop production. Water and effluent analysis services are required by food processors in addition to antibiotic residue and *Salmonella* testing of meat samples by pork butchers and pig producers.

Laboratory services

Diagnostic laboratory services are primarily geared towards pig producers; however, veterinarians in general practice seem to be using diagnostic laboratories increasingly frequently to support their

diagnosis.⁷ Newly available commercial diagnostic tests using enzyme-linked immunosorbent assay (ELISA) and polymerase chain reaction (PCR) technology provide an opportunity for diagnostic laboratories to expand and develop a wider range of services (Figure 5).

State laboratories have enhanced their profits by introducing fees for diagnostic tests that in the past were supplied free of charge to the agricultural industry. Laboratory services are likely to continue to expand as

- new tests become available,
- state laboratories introduce charges, and
- regulatory testing increases.

The practitioner planning for the future should carefully consider the potential benefits of expanding into laboratory services that could support and complement the services and image of the practice.

Autogenous vaccine production

Some practices manufacture autogenous vaccine from isolates obtained from pigs in the herd of origin for use in that specific herd. These autogenous vaccines provide a useful tool to the veterinarian when suitable commercial vaccines are not available. When combined with sound management and husbandry techniques, these vaccines can control disease outbreaks and reduce the need for medicated feedstuffs. Although autogenous vaccines can play a role in the control of certain diseases, this role is unlikely to expand, because new technology is continuously producing commercial vaccines that cover a wider range of diseases and strains of organism.

Manufacture of intermediate products

Under EU regulations, intermediate products are defined as products that are manufactured from a licensed product. Intermediate products are particularly useful where licensed medicated premixes are too concentrated for top dressing of feed. Although top dressing is a relatively crude form of medication, it reduces the risk of cross contamination and thus has become a popular strategy in residue avoidance programs, particularly where wet feed mixers are used. This system, however, is not legal in the United States.

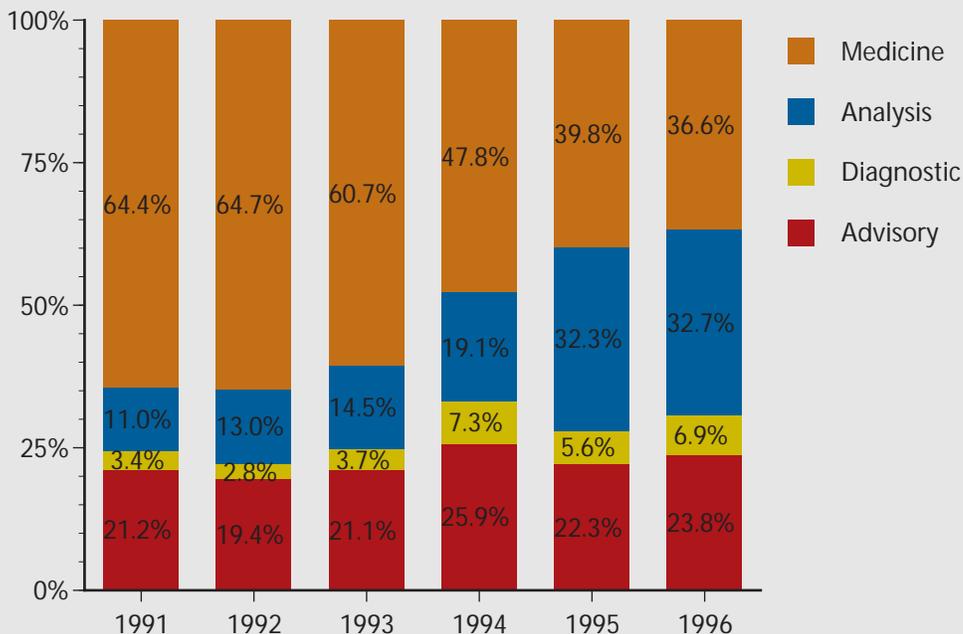
Services to pharmaceutical companies

Practitioners can participate in clinical trials with pharmaceutical companies as they develop new products. In the EU, there is a demand for veterinary laboratories to maintain a stock of bacterial cultures and to conduct minimum inhibitory concentration (MIC) testing of pharmaceutical products against such bacterial isolates. The veterinarian may also be required to write clinical expert reports as part of the process of product registration under EU regulations.

Feed compounder consultancy

Most feed compounders in Ireland do not employ an in-house veterinarian. Feed complaint investigations, if not resolved, can lead to product liability claims that require expert witnesses. Consultancy services to feed compounders can act as a catalyst, generating a demand for feed analysis and the sale of antibiotic premixes to the feed compounder.

Figure 5



Increase in percent of gross practitioner revenue derived from analytical (laboratory) services

Educational opportunities

There is a growing demand in large, corporate, multiple-herd breeding organizations for veterinary services geared towards educating managers and stockpeople. Pharmaceutical companies and feed millers often organize joint conferences and ask practitioners to present one or more of the presentations. The practitioner can make a valuable contribution to undergraduate education at universities and colleges by presenting a series of papers on the general theme of maximizing production efficiency in intensive pig production systems. Technical expertise must be marketed to clients. This can best be done through lecturing, in-house training, newsletters, publishing research studies, and developing communication and marketing skills.

Continuing professional development

As pork producers become more knowledgeable, so must we. Continued professional development will play a very important role in our future as practitioners. The global pork industry of today requires specialists in pig medicine who are familiar with the technical, practical management, and financial problems of intensive pig production systems. In the United States, postgraduate courses are available at the University of Minnesota and the University of Illinois. A swine health management specialty was set up by the American Board of Veterinary Practitioners (ABVP) to recognize practitioners with at least 5 years of clinical experience. They initially sit a qualifying exam, after which the successful candidates are mentored by a diplomate to do further study, and write two case reports and a refereed paper before sitting a certifying exam consisting of essays, problems, and oral questions. Successful candidates qualify as a Diplomate in Swine Health Management.

The Royal College of Veterinary Surgeons (UK) has established a two-

tier postgraduate examination in pig medicine. The first tier—the certificate in pig medicine (Cert PM)—is designed for practitioners with at least 2 years experience in pig medicine. Candidates for the Cert PM are required to submit three case reports, and to sit a written, a practical, and an oral examination. Candidates for the Diploma in Pig Medicine (DPM) are required to submit five case reports; write a dissertation; and sit a written, practical, and oral examination. The DPM carries full specialist status. Currently, within the veterinary schools in Europe (excluding the United Kingdom) there are no specialist courses in pig medicine that would suitably qualify the pig consultant.

Implications

- As the international swine industry evolves, more pigs will be produced by fewer herds, decreasing the number of practitioners needed to service the industry.
- Practitioners can take advantage of growing opportunities to provide other services to support the swine industry.

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