

# Tools from the new institutional economics for reforming the delivery of veterinary services

D.K. Leonard

Professor of Development Administration and Dean of International and Area Studies, University of California, Berkeley, Berkeley, CA 94720-2300, United States of America

## Summary

The new institutional economics offers a range of analytical tools and insights which can be used in restructuring the animal health services of a country. This paper discusses three of the most important – externalities, transaction costs and asymmetric (unequal) information. These tools can be used to craft a system which is sensitive to the particular institutional heritage of a country and to its political, social and economic realities. Institutions are important in this process and the best way for one society is often not the optimal choice for another.

## Keywords

Asymmetric information – Externalities – Institutional change – New institutional economics – Transaction cost – Veterinary reform.

## Introduction

During the decades of the 1950s, 1960s and 1970s the State was the 'star actor' or principal agent of international development. The role of the State had grown significantly during the Great Depression of the 1930s, the State was presumed to have been the instrument of industrialisation in the Union of Soviet Socialist Republics (USSR), and, most importantly, had been key to the dramatic economic recovery of Western Europe under the Marshall Plan. For a period of thirty years, almost any attempts at economic development involved an expansion in state supervision and services. The same was true of veterinary medicine and, in developing countries which came to independence in this period, animal health services provided by the State typically came to dominate those of the private sector. All of this was brought to a sudden end in 1981 when the World Bank adopted the concept of structural adjustment and began, among other things, to press for privatisation (27). Many countries were deeply opposed to this change in development philosophy and reform has been slow over the last twenty years – particularly in sectors such as Veterinary Services, which concern public health. Nonetheless, there are few effective challengers to the 'Washington Consensus' on neo-liberalism (23) today and all proponents of reform must be able to reason in terms of this approach if they hope to be effective.

In this regard, the new institutional economics (NIE) provides a useful set of tools for those who wish to restructure the animal health services of a given country (13). For, although the NIE accepts the basic premises of neo-classical economics, NIE is

also attentive to those areas in which the assumptions of neo-classical theory are not met, and provides different ways of thinking about them. In addition, the NIE insists that the ways in which an economy functions are heavily influenced by the institutional settings within which this economy is placed. Moreover, the NIE asserts that, in any given country, history has played a strong role in determining the particular combination or 'mix' of institutions with which the economy works (28).

Many of the first order prescriptions of neo-classical economics make assumptions (which are generally unstated) about institutional frameworks (e.g. the existence of an independent judiciary which can enforce contracts impartially). When those assumptions are not met, analysing proposals for reform requires the additional tools provided by the NIE. As a result of the effects of history upon the development of institutions in each country, there can be no single most effective way to organise animal health (or anything else, for that matter). At the same time, in any single social setting, one may well discover a system which is particular to that setting and which works best within it. In this paper, the author describes a few analytical tools provided by the NIE which will help veterinarians to tailor reforms to the particular institutional conditions of their own individual countries.

## Preliminaries

The NIE is a refinement of, not a fundamental challenge to, neo-classical economics. The NIE assumes that markets and the prices which they set are highly efficient mechanisms for

matching supply and demand, when the contracting parties are acting wholly in their own interests under fully competitive conditions, etc. The NIE aids in dealing with a whole variety of 'market imperfections' which exist in the real world, but it does accept that in well-functioning markets the emergent prices are fair and provide the most efficient matching of supply with demand.

Thus, in the following discussion of a variety of situations in which markets do not function properly and should be supplemented or replaced by other institutions, the author nevertheless assumes that the price which would be set by a perfect market is the 'gold standard' against which results should be measured. A new institutional economist accepts that frequently there are good reasons why a perfect market price might not be charged – to collect taxes from the rich or to subsidise the survival of the poor – but this economist would also want to clearly separate these discussions from those concerning optimal economic institutions.

These assumptions about the appropriateness of prices are particularly apt when examining the conditions of animal health in developing countries. People in developing countries raise animals for their economic value and fully accept that a health intervention should be costed against that value. Normally, then, producers can and should be asked to pay for the economic value to them (a qualification which is actually rather important) of the services they receive.

The exception would be a situation in which the livestock of a poor person, combined with a modest (or temporary) subsidy, is the most efficient means of keeping the livelihood of that person at what is considered the minimal morally acceptable level by that society. That calculation is a social welfare one, however, and must be made in comparison with the effectiveness and efficiency of other welfare measures.

The NIE, then, obviously brings a different perspective from that which has prevailed in many parts of the world until recent times, which regards animal health as an inherently public and therefore predominantly governmental service. The NIE is open to the use of market institutions instead and indeed evaluates government services against those of the private sector. The NIE tends to view the pressure for reform which has overtaken Veterinary Services in many developing countries as more than just a matter of money, provoked by the fiscal crisis which occurred in so many poor countries from the 1980s onwards.

In principle, one might think that fee recovery would solve the problems created by the economic crisis in the developing world. Fee recovery provides the missing finances while leaving the traditional government structures in place. By now, however, economists know that this alternative has all the negative effects of the market and few of the positive ones – it imposes a price on the producer but does nothing to change the

incentive structure governing the public system and therefore all too often leaves it inefficient and unresponsive. There is a danger that the new funds which the fees provide will be lost in standard government financial procedures or in corruption. Even if these fees do result in adequate stocks of veterinary supplies, functioning transportation and more adequate provider salaries, they leave the management structures of the public sector untouched. Thus, in the worst cases, staff may continue to provide veterinary products to their friends without charge, to use government vehicles for private purposes, to be careless in the use and maintenance of equipment, and to refuse to answer inconvenient calls for service. The imposition of such fees does not create a new set of incentives to government providers to be more efficient and responsive in their duties.

The objections made to the expansion of private veterinary care are as follows:

*a)* That the circumstances of the producers would be improved under the old free or highly subsidised systems which were created in many countries after independence from colonial rule. This is true but irrelevant; the public finances necessary to run these systems no longer exist. Pretending that these finances will return only prolongs the period in which economically crucial veterinary services are denied to livestock producers. It is not even clear that charges will be lowered if the State pays part of the costs for government animal health workers and allows livestock producers to pay the rest in fees. In Kerala and Rajasthan in India, Ahuja found that private practitioners and government-subsidised animal health providers actually charged the same fees, as neo-classical theory predicts (1). Private observations by Woods suggest that the same is occurring in Zimbabwe for many services (24).

*b)* Another objection is that the poor are disadvantaged by the market. At first glance this is plausible, for a market is driven by money and the poor have less of it than others do. In fact, there is now ample evidence that this argument is false. In this sense, the poor are not a special case. The existing studies suggest that the following propositions are true:

- that the poor are less likely to gain access to subsidised government services than the rich, for power and influence are distributed even more unequally than money (1, 9, 11, 26)

- that the poor often gain better access to veterinary care when charges are realistic than when such care is highly subsidised (6, 11)

- that the poor are as willing as the rich to pay for access to the veterinary services which they need (1, 8).

For example, the author found that, when government animal health workers in Kenya stopped offering free services and began to charge, poorer livestock producers were able to get these workers to treat their animals more often and the advantage of the rich in accessing veterinary care decreased (11). Studies in both Uganda and India failed to show the poor making any less use of commercialised animal health services

than the rich (1, 8). The issue for the poor is not whether they pay for veterinary care; it is whether they are able to get it at all.

The one sense in which it is true that the poor are a special case is that different things must be done for geographical areas which are remote and/or rely upon livestock of low commercial value. But targeting poor people does not seem to be feasible or necessary. Even in poorer areas, the challenge is to create the subsidies that will make veterinary practitioners available, not to try to provide special subsidies for the poor who live there. The work of Woods in Zimbabwe demonstrates a very strong decrease in the use of veterinary services as distance from the provider increases (24, 26). Frequently, the costs in time and transport of bringing animal health services to the farm are more important in determining effective demand than the professional fee. Ahuja finds the same in India (1). The NIE economist would say that distance imposes a very heavy transaction cost on private animal health contracts in these remote areas.

Obviously there is moral merit in targeting assistance to the poor but the evidence is that very few organisations, except for some non-governmental organisations (NGOs), can make it work in the real conditions of the rural developing world. The most important thing is to make these services available to the poor at all, even at a price. After all, livestock are valuable as productive assets, not for their own sake. Even the poor will find ways to pay to maintain their economic value.

c) Finally, one might object that the market by itself will not provide for some crucial aspects of animal health, as follows:

- the quality of animal health services
- the prevention of disease
- the promotion of animal health.

This is true and it is to these challenges that the concepts of the NIE are relevant.

## Externalities

The author noted above the efficiency of market prices in matching supply and demand when, among other things, the contracting parties are acting wholly in their own interests. This assumption is met reasonably well when an animal health practitioner and a livestock owner form a contract for the provision of curative services to a sick animal. The limiting exception would be a situation in which a practitioner consistently overprescribed antibiotics and therefore created a danger of drug resistance.

However, this assumption is violated quite frequently for preventive interventions. As a result of herd immunity, the fact that one farmer immunises his or her livestock (or dips their livestock for ticks and parasites, etc.) reduces the likelihood that the animals of a neighbouring farmer will catch the disease and

*vice versa*. Thus, at least some portion of the value of the immunisations purchased for a herd, goes to neighbouring herds as well. In the case of infectious diseases, such as foot and mouth disease, the value of preventive measures to neighbouring farmers might be quite high. Thus, it is possible that the decisions of a farmer about what represents an economically optimal decision for his/her own herd might not be economically optimal for all livestock owners taken together. For example, a farmer might have a single animal of low value and decide it is not worth the cost of immunising it against rinderpest. However, in a zone where rinderpest could become endemic, neighbouring farmers would benefit if the first farmer took preventive action.

There are beneficiaries outside (external to) the transaction between the provider and the recipient of the service and this violates the strict assumptions of neo-classical economics, as recognised long ago by seminal economic theorist Adam Smith. When there are external beneficiaries, economists speak of the existence of 'positive externalities' and 'free riders', i.e. those who are receiving something for which they do not pay (18).

A different kind of example in which there are beneficiaries external to the direct transaction is provided by meat inspections. If the danger from improperly inspected animal products involved only the health of the consumer, the benefits would be directly between the contracting parties and one could argue that the consumer alone should identify and pay for that service. Whether or not the consumer has the means to identify well-inspected products is a different kind of problem, which the author will discuss below, under the topic of asymmetric/unequal information.

However, the emergence of severe acute respiratory syndrome (SARS) illustrates a more general danger beyond the risk to the immediate consumer, one where infected meat leads to a disease jumping the animal-human species barrier and threatening the entire population. This risk, then, is known as a 'negative externality' to the transaction.

Neo-classical economics assumes that purely private transactions meet the tests of 'exclusion' and 'rivalry'. Exclusion applies when it is relatively easy to deny access to a service to those who have not paid for it. The rivalry principle operates when two consumers cannot both enjoy a specific benefit at the same time. The most severe externality problems apply when neither of these tests is met. A classic example would be a radio broadcast on improved methods of keeping livestock. An additional listener subtracts nothing from the benefit gained by those who are already listening (rivalry) and it is very difficult to prevent people who have not paid for the broadcast from hearing it, or hearing about it (exclusion). The older economics literature refers to these situations as 'public goods' (20). Any time that exclusion is not possible but rivalry exists (as in a free range in which any herds can graze without restriction), economists speak of a 'collective good' (18).

When de Haan and the author began working on the restructuring of animal health services in Africa in the early 1980s, they both made considerable use of the older distinction between public and private goods (10, 11, 12). For a variety of reasons, the author now believes that it is much better to use the externality concept, an idea that was adopted by Umali *et al.* in a 1992 World Bank discussion paper (22).

Firstly, the categorical reasoning dictated by the distinction between public and private goods is too blunt an instrument for the subtleties of making animal health policy. An externalities approach contrasts the costs and benefits incurred by the immediate parties to a transaction with the costs and benefits of those who are only indirectly affected by this transaction and are therefore external to it. 'Internal' and 'external' benefits can be either positive or negative. The quantification (even if only approximate) encompasses degrees of difference and does not lock one into a restricted set of categories.

Secondly, the externality method leads to a more effective way of evaluating the adequacy of private demand. When the unit of consumption is 'bulky', so that the private purchaser decides 'whether to buy' rather than 'how much to buy', it is perfectly possible for private consumption decisions to be socially optimal as well. For example, one does not decide how much of an immunisation to buy: Koma found in Uganda, as did Tacher in the Central African Republic, that herders considered immunisations against prevalent animal diseases to be so valuable at the market price that they needed no public subsidies (in return for the externalities) to pay for them (8, 21). On the other hand, the private 'benefits' of quarantine are so negative that no amount of public subsidy (except purchase of the sick animal at its healthy price) would induce herders to comply voluntarily. The 'public versus private goods' method of analysis implies that farmers would be more likely to behave in ways that benefitted their neighbours if they were organised in groups that internalised the externalities, i.e. groups that either forced a common action or charged the same price to all group members whether they used the service or not. But this may not be true if the private benefits are large and bulky. Thus, Koma found that collective purchase by a farmer co-operative would not have changed the shape of demand for either immunisation or quarantine (8).

Thirdly, the public versus private goods method tempts the analyst to move too mechanically from diagnosis to prescription and to preclude a full consideration of the institutional alternatives that may exist for a particular country. The author observed practitioners and policy-makers use this method at an Africa-wide conference on animal health in Kenya in 2002 and found that, once these participants had observed aspects of public goods in a particular function, they immediately formed the conclusion that this function should be provided by the public sector, i.e. government. In doing so, these decision-makers failed to consider whether the function might be better provided by co-operatives of producers, or by

government contracts with private providers. Moreover, the decision-makers did not examine whether private demand was so strong that government subsidy or activity (other than monitoring) would be unnecessary. These decision-makers would have been less likely to form such hasty conclusions if they had used the externality method.

There will be services, however, for which externalities are high. The private market, left to itself, will not provide the optimal solution for society, and the State must intervene – not necessarily to provide these services itself but to regulate them, subsidise them or even make contracts for their provision. The choice of mechanism will depend on the range of institutional options of the country in question.

## Transaction costs

The concept of transaction costs is fundamental to the NIE. Not all the costs of a service are revealed by its price. Other factors may intervene to make the transaction between the provider and the consumer inefficient, so that some of the value surrendered by one party to the sale is not fully captured by the other. These are transaction costs. Such inefficiencies are 'dead weight losses', in that neither party derives any benefit from them and both buyer and seller would gain if these costs could be reduced.

If an animal health service is structured so that its explicit prices are very low but its transaction costs are very high, it would be providing illusory savings to the consumer. This is precisely what occurred in many countries when the fiscal capacity of their States collapsed in the 1980s – official prices remained low but drugs were frequently unavailable and grossly underpaid staff were erratic in attendance. A livestock owner could travel a long distance to a government animal health practitioner only to find him/her absent or the relevant drug supply exhausted – very high transaction costs indeed.

The most prominent transaction cost in animal health services, particularly in developing countries, is distance. It is extremely difficult for a smallholder to transport a large animal, so the veterinarian must travel to the animal. This imposes a double cost on the herder. The herder must pay in time and money to travel to the practitioner to state his/her need for service and then must pay again for the practitioner to travel to the farm. In Uganda and Zimbabwe, Koma and Woods found that greater distance to animal health providers noticeably reduces demand for their services (8, 24). Njiru reported that, in central Kenya, over half the business for private animal health practitioners came from requests for service by farmers once the veterinarian had come into the neighbourhood on call for another farmer, a further confirmation of the importance of this particular transaction cost (14).

The government of socialist Sweden contracts with private veterinarians across the country to provide disease prevention and surveillance measures – services with strong externalities (7). A major advantage to this practice is that it keeps veterinarians present and accessible in the more remote areas of the country and therefore reduces the transaction costs for private curative practice.

State policy regarding pharmaceutical supplies is another area where urban-based regulators impose unintentional transaction costs on rural producers. Woods reported that, in Zimbabwe, para-professional animal health practitioners were not permitted to sell drugs in the field and farmers had to travel back to their offices again to make their purchases. This added a huge transaction cost with the apparent intent of protecting some of the business of full veterinarians, who were under no such restriction. Woods further found that government-supplied drugs had to be sold in bulk containers and not in the small-dose units required by smallholders, further reducing farmer demand (24). Veterinary medicine employs controlled substances and the regulation of their use is a legitimate and important function of the State. But do the rules governing the use of such drugs by full veterinarians, para-professionals, pharmacies and rural general stores (or whatever combination of these facilities is available in a particular country) reduce or promote unnecessary transaction costs?

In general, any restructuring of the animal health services in a particular country should pay attention to the 'dead weight losses' imposed by transaction costs in the current system, to ensure that the public function that these costs serve does indeed justify the ensuing reduction in supply or demand. There is one area in which the State, however, often has a positive role to play in reducing transaction costs – assurances of quality.

## Asymmetric information

A farmer who enters the market to purchase animal health services does so at a distinct disadvantage. He or she cannot be sure of the quality of the product that he or she is buying. The farmer would be able to observe the medicines which were provided and the various tests that were undertaken ('observable'). Furthermore, the farmer might be able to discover the formal qualifications which are held by the practitioner. However, the farmer cannot be certain of the skill with which that formal training is used; nor can he or she know the amount of serious effort the practitioner is putting into the diagnosis. Eventually the farmer will know whether the animal recovers (or, if vaccinated, fails to become sick), but some animals will die, even when treated appropriately, and some will recover, even when handled badly. Thus, what the farmer knows is only imperfectly related to what he or she is trying to purchase. The practitioner knows the quality of effort that he or

she is providing but the farmer does not. The information available to the farmer in this transaction is imperfect and unequal, i.e. asymmetric (3, 19).

One might think that the asymmetry in information is all to the advantage of the veterinarian/para-veterinarian, rather than to that of the farmer. But this is not so. Since the farmer cannot know the quality of the medical service which he or she is purchasing, the farmer will be unwilling to pay for more than average quality. If the veterinarian/para-veterinarian is providing, or wants to provide, a high-quality service, then the transaction cost of asymmetric information means that the practitioner is unable to charge the appropriate price. Thus, the high-quality veterinarian/para-veterinarian will either leave this particular market or reduce the quality of his or her service.

If there is a farmer who wants quality animal health services and a veterinarian or para-veterinarian who wishes to provide them, some institution is needed to intervene in this 'free market' to overcome the asymmetric information problem. If the institution does so effectively, both parties to the transaction will benefit (2, 3, 19).

The observations made by Koma on the competition between doctors of veterinary medicine (DVMs) and para-veterinarians in Uganda are typical throughout Africa. It is true that when a DVM conducts surgery on an animal the differences in training and skill from those of a para-veterinarian are visible and the evidence suggests that even traditional producers will pay for this service (8). Much of the extra quality provided by the better practitioner is diagnostic, however, increasing the likelihood that hard-to-discern diseases are identified and that the medications prescribed are appropriate. The producers may know that the DVM has studied more than the para-veterinarian, but they may not know how experienced or skilled the DVM is and they certainly do not know the extent or honesty of the efforts made by that DVM. As most of the diseases affecting African livestock are fairly easy for para-veterinarians to diagnose and treat, and as most non-pastoralists have small herds, relevant experience with DVMs is very hard for the producer to accumulate. The result is that producers are unwilling to pay DVMs more than para-professionals, unless surgery is indicated or some institutional mechanism exists to overcome their distrust.

### **Eight mechanisms for resolving information asymmetry**

There are at least eight mechanisms that can be used to solve the information asymmetry problem in animal health. No single mechanism is best, for the way each one works depends on the particular institutional history of the country in question.

The first mechanism is the most universal: long-term association (2). If a veterinarian, para-veterinarian or meat

inspector has established a reputation for providing high-quality service through a very long-term association with a given farmer or community, this practitioner will be able to charge higher prices (or capture a larger share of the market) and will therefore be unwilling to lose this advantage. Once a long association is established, limited monitoring by the farmer or consumer is more effective, for it increases the value of the threat to cut future connections if something is found to be wrong. On the other hand, it can take a very long time for a practitioner to establish a reputation for high-quality service. Since the progress of infection and disease is highly stochastic, it takes a great many observations to make one confident that one is seeing genuine quality (even more so in disease control inspections and prevention than in curative care). A high-quality practitioner is likely to become discouraged and move on before his or her reputation is established, particularly if the members of the community are not very good at sharing their observations about animal health-related results or 'outcomes'.

The second, third and fourth mechanisms also concern reputation. However, in these instances, the reputation is held not by an individual but by an organisation, which regulates its employees in their provision of service. An organisation is often in a better position than an individual to invest in providing high-quality services over a significant period of time and a wide range of territory, while its reputation is being established. To be effective, however, such an organisation must have the following:

- a) a method for detecting and punishing poor-quality work among its employees while also rewarding high performers
- b) a well-institutionalised set of values which place a high priority on quality
- c) something to lose as an organisation if its reputation for quality declines.

Thus, the second mechanism uses government organisations to establish quality, the third uses private organisations and the fourth employs value-based NGOs (which are rooted in shared religious or social values).

### Government organisations

Some government organisations which provide animal health services have very high reputations for integrity and quality, but these tend to be concentrated in the industrialised world. Many other government animal health organisations:

- have ineffective mechanisms for detecting, disciplining and dismissing shoddy workers
- do not promote quality
- have values which are politicised by patronage or a political party
- no longer have a reputation to lose.

Unfortunately, this latter, dysfunctional type of government organisation tends to predominate in the developing world. Thus, government organisations in the developing world may well decide to seek out other partners to provide services in areas where quality matters, even while retaining overall responsibility for policy and some degree of financing.

### Private corporations

A private corporation has a great deal of flexibility in disciplining and rewarding its workforce, but it has no inherent reason to seek quality, unless this corporation detects the existence of a market niche in which it will be well rewarded. For that very reason, once such a corporation has a reputation for integrity and quality, it could lose a great deal of business if its reputation were compromised.

In Bolivia, the State lacked disease control and inspection services of sufficient quality and integrity to meet the demands of importers belonging to the Organisation for Economic Co-operation and Development. Over the last twenty years, some private firms have become established to provide this certification service and have gained a good reputation in the export markets. In a country like Bolivia, it might be possible for the State to form contracts with firms which have 'reputations to lose' to provide domestic food-quality inspections as well as export inspections.

### Non-governmental animal health organisations

In some parts of the world, value-based NGOs have a very strong reputation for quality. For example, in terms of human health, Mliga found conclusive evidence in Tanzania that church clinics provided better care than government ones and that the quality increased if the facility controlled its own personnel decisions and had staff salaries linked to fee revenues. This occurred despite the fact that all staff were local and had been trained at the same schools and universities in Tanzania (16).

In Senegal, Ly found that the use of curative animal health services doubled and the purchase of preventive measures increased between two-fold and four-fold, when producers were served by a (Lutheran) mission NGO in which the (Muslim) locals had confidence (15). Such NGOs are not available everywhere in the developing world and only a few of them have the capacity to work on animal health. It takes strong values and considerable financial commitment from an NGO to establish these quality services. A 'start-up' or beginning NGO, using only donor money, might have mixed motives and would have little to lose from a disappointing reputation. However, where successful value-based NGOs are well-established and willing to work on animal health, they are another part of the institutional heritage upon which a country can draw.

### Other mechanisms

The fifth mechanism for assuring quality is one of several in which the veterinarian/para-veterinarian/inspector is threatened with the loss of a very large stock of value if he or she engages in sub-standard practice. In malpractice suits, the penalty is a substantial fine which is paid by the faculty practitioner to the aggrieved farmer/customer. Since the farmer (and his or her legal representative) keeps the fine, they have a strong incentive to prosecute. Furthermore, the transaction is economically 'conservative' (in the sense that no value is lost between the contracting parties). This mechanism has three important prerequisites, however, which mean that it is of limited use to most developing countries, as follows:

- a) the courts must be free of political influence and act with integrity
- b) the courts must give their judgements in a timely manner
- c) the legal process must be accessible to farmers and consumers who may have limited education and resources.

The sixth mechanism, i.e. the threat of removal of the licence to practise by a State regulatory board, is therefore more common in the developing world. There is a large stock of value to be lost here (the licence and the income which it permits). But the regulatory transaction is 'non-conservative' in economic terms, in the sense that value is simply lost to the system if this penalty is imposed and neither the farmer/consumer nor the regulatory board has anything to gain. The fact that the penalty is so large that it should not have to be imposed very often does make it economically somewhat more efficient (19). In many societies, however, the lack of incentive for the farmer/consumer or the regulatory board to file complaints makes the procedure less effective. Moreover, if the board is politicised or corrupt in any way, it becomes useless in ensuring quality. As North remarks, 'one cannot take enforcement for granted. It is (and always has been) the critical obstacle to increasing specialisation and division of labour' (17).

In the French-speaking world, the State usually regulates the professions directly. In English-speaking countries, this function tends to be delegated by the State to professional associations, which have the power to grant and revoke licences to practise. Since this authority comes from the State, the professional association is expected to exercise its regulatory powers on behalf of both the consumer and the general public, thus helping to resolve the externalities problem (4, 22). This is the seventh mechanism and it has most of the attributes of the sixth, with two exceptions. As regulation is provided by fellow professionals, it is possible that they will band together to protect their own. On the other hand, they might feel a strong incentive to patrol the behaviour of their peers vigilantly. The better-quality practitioners dominate most professional associations. If they gradually exclude their worst quality peers, they will raise the average quality of the profession and cause their own fees to rise. Which outcome then will prevail, the

negative or the positive? By and large, the evidence suggests that professionals are aggressive at excluding poor-quality practitioners only when the State or society in general is particularly attentive and demanding. These conditions are not widely observed (5, 15).

Research in the United States of America suggests that professionals actually regulate themselves more informally through an eighth mechanism: referral networks. Practitioners across their special fields categorise themselves into networks at different levels of quality. For example, high, medium and low quality general practitioners will refer their patients to comparably high, medium and low quality surgeons, respectively.

Medical doctors have much less of an asymmetric information problem in observing the work of their colleagues and are able to use what they learn quickly and flexibly. Thus, when patients find a general practitioner of a quality which suits their tastes and means (a somewhat easy task), these patients can be confident that they will be referred by that general practitioner to specialists (about whom it is much harder to get good information) of comparable quality. Since volume and sometimes price vary across these segmented networks, high-quality practice is rewarded and encouraged (5). Such referral networks have not been common in developing countries, even less so in animal health than in human medicine. The gap between para-professionals and professionals is larger than that between generalists and specialists. Furthermore, those working in government settings have tended to pay little attention to who made the referral and to send back little if any information about outcomes. Veterinary practice is also much less hospital-based than human health, so it is harder for practitioners to observe the work of their colleagues. Thus, effective referral networks have rarely been built in the animal health systems of developing countries. Perhaps they should be encouraged, however.

In most developing countries, DVMs have a distant and sometimes competitive relationship with the para-veterinarians who work in the same areas. If, following the Swedish model, DVMs were contracted to supervise the occurrence of disease outbreaks, ensure certain preventive measures, and, it is to be hoped, have a meaningful effect on the quality of animal health care in their areas, they must develop an actual relationship with the para-professionals in the same region (beyond that of simply selling them controlled drugs). Unless the State prohibits para-professionals from practising outside the supervision of a DVM (something that, in Africa, seems to occur effectively only south of the Zambezi River), the relationship of the DVM and the para-professional would have to be one of mutual convenience, implying strong referral relationships occurring in both directions.

Except where surgery is concerned, DVMs have a problem selling their special expertise, as much of their work is subject

to severe problems of asymmetric information; that is, much of the value of what they have uniquely to offer is invisible to the livestock producer. These DVMs will be more successful in building viable practices if they have relationships with para-veterinarians who provide regular, simple services and who have therefore had the chance to establish reputations for credibility with the producers (15); these para-veterinarians can then refer the producers to the DVMs. The returns to both DVMs and para-veterinarians from measures that build confidence among livestock owners in the quality and honesty of their work are substantial. As mentioned above, in Senegal, Ly found that the use of curative services doubled and the purchase of preventive measures increased by two to four times when producers were served by a para-veterinarian who had strong links with a DVM employed by an NGO in which local farmers had confidence (15). Woods observed a similar effect for links between DVMs and para-veterinarians in Zimbabwe (25).

## Transitions

Everyday veterinary practice is shaped by the interaction of incentives and professional and governmental institutions (that is, rules, roles and norms that have come to be valued for their own sake). The incentives offered by clients, suppliers, supervisors and so on are powerful motivators but they are interpreted and constrained by the institutional context (i.e. organisational and social values). In the short and the medium term, institutions can create behaviour that rejects immediate incentives. For example, a veterinarian may notify authorities of an OIE (World organisation for animal health) listed disease and condemn a carcass, even though the owner offers a bribe for not doing so. Over the long run, however, institutions will be sustained and effective only if they are compatible with the incentive which society provides. Thus, the veterinarian in the previous example will accept the bribe if accepting bribes is not punished and if society provides few rewards to 'good and responsible' veterinarians (i.e. those who do not take bribes). Over the long term, institutions will evolve in the direction of (public and private) incentives. A society which is willing to invest heavily in efficiency and the public interest will develop and sustain institutions which meet those ends. But, when attention to the public good breaks down (either because of a change in values or a lack of resources), institutions (the actual rules, roles and norms validated by a society) will change, making it very difficult to conduct business effectively or in the public interest. Corruption becomes endemic and expected, so societal welfare is neglected and transactions which require trust are very hard to make.

In many developing countries, the institutions in which veterinary practices are embedded have declined in a way that is detrimental to society. The previous sections of this article have offered ways to think about those institutions and build a

new and productive type better suited to social realities. The nature of the institutions selected should be developed for the particular society in question, as institutions are dependent upon values and must be built on the actual rules, roles and norms which are already sanctioned by the central participants in that society.

It is easy to see when the institutions (rules, roles and norms) of a particular sector or society are serving it poorly and that a very different set would serve it better. Moreover, since institutions tend to reinforce one another, it is tempting to argue for a 'clean break' with the past and try to start everything anew. Institutions involve values, however. Even negative values do not disappear by decree and new ones cannot be legislated into existence. They change gradually. The economic historian and Nobel laureate, North, has concluded that almost all change in economic institutions occurs incrementally (gradually), not in dramatic, disjointed steps (17). Thus, in moving from a government veterinary system that no longer works to one with a prominent role for the private sector, one should not expect to make a clean, sudden break with the past. The transformation approach did not work for peasant agriculture in the Tanzania of the 1960s and it did not work for the transition of the Russian economy of the 1990s. Deep institutional change will take hold gradually.

The important thing is not to achieve the entire set of changes all at once but to put in place a new set of incentives which will promote movement in the desired direction. North is clear that it is long-term pressure from the new incentives created by technological, economic and political change which achieves institutional change (17). The problem then is to devise a set of changes that will produce such altered incentives. Furthermore, for these changes to last long enough to also produce institutional change in the veterinary sector, they must be sufficiently compatible with the existing general institutions (rules, roles and norms) of the society in which they will take effect.

In considering the incentives being created, it is important to think of the sector as a whole. Not only should the efficiencies of purely private transactions be promoted but there must also be incentives to sustain the publicly orientated institutions within which society will expect the private practices to be embedded. If the process of change promotes only the incentives of private transactions, it will be difficult to establish public-interest institutions (rules, roles and norms) later.

## Conclusions

The NIE offers a range of analytical tools and insights that can be used in restructuring the animal health services of a country. In this paper, the author has given extensive attention to three of the most important – externalities, transaction costs and

asymmetric (unequal) information. There are other tools as well. For example, the concept of asset specificity (i.e. what to do when an investment can be used for only one purpose and is not easily reassigned to another purpose when a contract fails) is useful when it comes to the details of designing government contracts with private animal health practitioners. For a discussion of this concept as it relates to Veterinary Services, see the observations of the author on local monopolies

in animal health (12, 14). The important point, however, is that these tools can be used to craft a system that is sensitive to the particular institutional heritage of a country and to its political, social and economic realities. Institutions are important and the best way for one society is often not the optimal choice for another. ■

## Contribution des outils de la nouvelle économie institutionnelle à la réforme des prestations de services vétérinaires

D.K. Leonard

### Résumé

La nouvelle économie institutionnelle propose une palette d'outils d'analyse et des pistes de réflexion adaptés à la restructuration des services de santé animale d'un pays. L'auteur présente trois outils, parmi les plus importants, à savoir les externalités, les coûts de transaction et l'information asymétrique (inégalité face à l'information). Ces outils permettent de concevoir un système en prenant en considération l'héritage institutionnel spécifique du pays, de même que ses réalités politiques, sociales et économiques. Les institutions jouent un rôle prépondérant dans ce processus. L'auteur montre que le choix le meilleur pour une société donnée l'est rarement pour une autre.

### Mots-clés

Changement institutionnel – Coût de transaction – Externalité – Information asymétrique – Nouvelle économie institutionnelle – Réforme vétérinaire.

■

## Herramientas de la nueva economía institucional para reformar la prestación de servicios veterinarios

D.K. Leonard

### Resumen

La nueva economía institucional proporciona un gran surtido de herramientas y conceptos analíticos que pueden utilizarse a la hora de reestructurar los servicios zoonosológicos de un país. El autor examina tres de los más importantes: las externalidades, los costos de transacción y la asimetría de la información (desigualdad). Estas herramientas conceptuales pueden utilizarse para crear un

sistema que sea sensible al pasado institucional de cada país y a su realidad política, social y económica. Las instituciones son importantes en este proceso, y lo que es idóneo para una sociedad no suele serlo para otra.

#### Palabras clave

Cambio institucional – Costo de transacción – Externalidad – Información asimétrica – Nueva economía institucional – Reforma de los servicios veterinarios.



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