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Critical View

Controlling corruption in order to improve global health

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Abstract. Corruption can take various forms, including frank bribery and the corruption of knowledge. Prominent in the health field is corruption associated with the pharmaceutical industry. This can impair true freedom to choose optimal therapeutic strategies by misrepresenting less qualified yet more expensive ("pseudo-innovative") products, resulting in increased expenditures without improvement in the quality, efficacy or safety of the health care supplied. Promotion of products is legitimate, but the border to corruption is not easily discernible and is readily violated. Senior management within the pharmaceutical industry has to become aware of the destructive consequences of corruptive and other improper promotional activities and be prepared to fight them through implementing Codes of Conduct.

Medical health care professionals are the main targets for corrupt practices on the part of the pharmaceutical industry. They need to be sensitized against disinformation and material influences which can impede professional care. Professional and self-governing institutions have to develop Codes of Conduct and strategies to guarantee transparency and the independence of advisory functions.

National legislation should be promoted to create or extend anti-corruption law to members of professional medical societies or self-governing bodies in health care. Governments should recognize the need for patients' participation and public control at all levels of health care systems, also in the so-called private sector, and establish the necessary legal framework.

1. Introduction

Health care is vulnerable to political and economic influences including corruption at many levels. The definition of corruption is relevant; it must be considered to include not only bribes and other direct financial inducements to take particular decisions but also what one might call the corruption of truth. Where facts are misrepresented, even by the selective presentation of evidence, the result can be the distortion of health care. In recent years, Transparency International has emerged as a prominent non government organization devoted to identifying and combating corruption in many fields of society, including the provision of health care, and has provided a global documentation of the many abuses which it has encountered and exposed [1]. The present review will survey briefly the problems which have been shown to exist, some of them on a worldwide scale, and the solutions which might be found. Particular attention will be devoted to issues involving the pharmaceutical industry, but problems having their roots in the health care system itself will also be touched on.

2. Areas of occasional corruption in health care

It is not surprising that the pharmaceutical industry employs more lobbying staff (625) in Washington than there are congressmen. It has been estimated that drug companies spend some 100 million US$ annually at the US Congress to influence national or international drug regulation and the acts of legislators, regulators and health administrators. Election campaigns have been supported by up to 85 million US$ in individual cases. The pharmaceutical industry uses its financial means to influence politicians and civil servants not only in developing countries, but also in "corruption-free" industrialised societies, as recently evidenced by an instance in which Johnson & Johnson was reported to have bribed US state health officials, even in state-run prisons and mental hospitals, to write guidelines and to prescribe the company's antipsychotic drug risperidone [2].

There are many areas in health care which on given occasions allow questionable practices including corruption to enter the system. Deficits in scientific, public or administrative controls serve as door openers for corruption, especially if decision-making processes are executed behind closed doors, a practice generally defended by arguing that the public lacks knowledge and qualification for participation and control. Health care professionals indeed appear to have particular problems in accepting public participation and control. On the other hand, medical professionals appear to have few reservations about accepting gifts and other benefits offered by the drug industry, even to the extent of taking bribes for drug prescriptions. It is clearly this lack of resistance which encourages the industry in its marketing to engage in increasingly questionable or frankly corruptive strategies in its advertising and sales promotion for drugs.

Corruption is however also widespread within health care itself. There are a fair number of countries in which patients find it necessary to make out of pocket payments in order to gain access to health care services, even if they are entitled to these services in the framework of government-funded schemes or statutory health insurance systems. More often, governments fail to supply adequate basic health care to patients because of corrupt diversion of health care funds into private channels.

In affluent societies health care providers may exploit patients and/or health insurance systems by carrying out unnecessary diagnostic or therapeutic procedures, thereby increasing costs without conferring additional health benefits. Health care professionals and employees may also exploit administrative loopholes in order to claim costs without supplying any service whatsoever or to bill patients for services which are in fact covered by health care insurance.

The distribution system for drugs and medicinal products is open to corruptive practices such as kickbacks, inadequate pricing, bribery or other criminal activities; all these forms of malpractice can flourish where controls are insufficient, ineffective or themselves corrupted. This is especially true in developing countries, where falsified products without active ingredients or with inadequately dosed ingredients may be introduced into the distribution channels unrecognised. Corruptive practices are similarly observed in bidding procedures for tenders in governmental health care supplies.

Administrators in health care systems may be particularly open to corruption if there is insufficient public, political or parliamentary control and no transparency of the decision-making processes. This applies not only to governments in the developing world, but also to self-governed health care institutions or professional societies in industrialised societies, when controls are either ineffective or insufficiently transparent. Lack of transparency in decision-making processes appears to be a general door opener for corruption and illegal influences in all health care systems.

3. Areas of structural corruption in health care

The principal problem of corruption in health care appears, however, to result from the structural decline in the innovative achievements of the pharmaceutical industry which has resulted in a progressive inability of the products to compete between each other on the basis of superior therapeutic quality alone; we return to this point below. Pharma-marketing, the financially most potent player in the field, has therefore turned to other strategies for promoting the sale of products. Being so heavily financed – and the expenditure on marketing now commonly far outweighs that on research – it uses monetary tools to gain the support of scientific experts, medical opinion leaders, and members of medical societies responsible for the guidelines which determine drug prescribing by general practitioners or other health care providers. It has been estimated that at the present day the pharmaceutical industry uses about 50% of its revenue for drug marketing, but only some 10% for research and development of new products. Consequently, a vicious circle has been set up. The pharmaceutical industry is becoming less and less engaged in research capable of delivering new and innovative therapeutic strategies for disorders which have hitherto been treated inadequately or not at all. At the same time, the industry has become increasingly active in selling ever more drugs to the wealthiest section of world society, notably the healthy population of affluent countries, since only these societies can afford to pay the prices which the pharmaceutical industry needs to maintain in order to finance its business, marketing, and shareholder commitments.

Not only are these prices high by any reasonable standard, but the pharmaceutical industry has used political influence and economic pressure, as well as legal or sometimes corruptive strategies, in order to secure and maintain these price levels, even at the risk of denying adequate drug treatment to millions of people in the developing world. The evidence for this is abundant. One needs to recall only the long-term battle of the industry against the principle of "essential drug lists" such as propagated by the World Health Organization, and its efforts to counter generic substitution in national anti-AIDS programmes in South Africa or in poor countries which have no generic drug production within their own borders. Not only the South African Government's policies, but also Brazil's national policy for combating AIDS became the target for harassment, political and economic pressure and even threats by elements in the pharmaceutical industry; such approaches betray a gross lack of respect for the therapeutic needs of HIV victims and for the ethical obligations which devolve on all players in the health care field. The lack of accountability, of responsibility and of ethical sensibility demonstrated by some elements of the pharmaceutical industry are such that they could well be considered as dangerous players in the delicate field of health care.

4. Pharmaceutical industry: deficits of innovative quality

For a series of reasons, some of which are more apparent than others, the pharmaceutical industry has during the last 25 years lost a great deal of the innovative creativity which characterized many large firms in the years following the second world war. Facilities for research have been reduced and the funding of research of a type capable of producing real innovation has been cut. The larger companies have increasingly come to rely on the acquisition of new drug entities from small innovative groups; these are then developed into marketable products by carrying out the formal and standardized studies of safety and efficacy required by the regulatory authorities. Not all these innovative groups are commercially based; the former editors of the New England Journal of Medicine, Angell and Relman, have indeed

calculated that research for 15 out of 16 recent innovations claimed by the pharmaceutical industry was actually performed and financed by government funded institutions, and not by the industry itself [3].

The worldwide annual output of new drug entities is about 30 to 40 per year. Since 1990, about 400 "new" drug entities have been marketed by the pharmaceutical industry. Of these, however, only seven are truly new and innovative therapeutic principles, providing medically significant progress in therapy or resulting in a relevant increase in patient survival. Four of these seven innovations related to new drug classes, developed into licensed products mainly by the drug industry were:

- *Statins* (e.g. simvastatin, 1990): Cholesterol-lowering drugs, reducing cardiovascular morbidity and mortality.
- *$5HT_3$ antagonists* (e.g. ondansetron, 1992): Suppression of vomiting during emetogenic chemotherapy, thus allowing higher dosing and resulting in increased life expectancy in curable cancers.
- *Protease inhibitors* (e.g. indinavir, 1996): Allowing more effective HIV treatment.
- *Tyrosine kinase inhibitor* (imatinib, 2001): Improving treatment of chronic myeloid leukaemia.

The other three innovative therapeutic strategies resulted not from industrial but from clinical research, which was taken over and sponsored by the industry only after its economic potential was recognized:

- *ACE inhibitors* (e.g. captopril, 1992): Use in the treatment of heart failure, resulting in increased life expectancy.
- *Proton pump inhibitors* (e.g. omeprazole) *plus antibiotics* (1993): Combined treatment of gastrointestinal ulcers by eradication of *Helicobacter pylori*.
- *Beta-blockers* (e.g. bisoprolol, 1999): Improved treatment and life expectancy of heart failure.

In addition, some one or two further new drug entities introduced each year can be considered capable of improving treatment in small and particular groups of clinical patients, thus providing a limited advance in quality and quantity.

None of the other new drug entities introduced during this period of time – some 400 in all – can be regarded as representing any significant therapeutic gain. Such drugs, the vast majority, can only be characterized as *pseudo-innovations*, marketed only in an attempt to increase income without providing any real therapeutic advance.

5. Corruptive marketing practices

Health care expenditures are largely influenced by the prices of drugs and medicinal products. Even in western countries where there is major health expenditure in other directions – e.g. in the form of high salaries and sophisticated equipment – medicines account for a substantial part of health expenditure, but in developing countries they can account for as much as 60% of the entire health budget. In such a situation one might hope to see prices kept in check and quality stimulated by free market competition and critical consumer choice. In effect however such true competition is largely lacking, and the choice of products is heavily determined by marketing pressures. The prescriber or user is manipulated to ensure the use of the newest and most expensive item, and every effort is made to exclude (or failing that to discredit) whatever alternatives exist.

It is fact that at the present day the number of new innovative drugs is not sufficient for the pharmaceutical industry to earn the revenue needed for its operations, and maintain the high rewards which its shareholders have come to demand. Only a drug which is perceived as a "breakthrough" in therapy is likely to become a financial "blockbuster", providing a return of a billion U.S. dollars or more. The task

which pharma-marketing has to assume is therefore to take, one after another, drug entities which are no more than pseudo-innovations having no real innovative quality or superiority over competitors, and ensure that these uninspiring items are perceived and prescribed as "blockbusters". A series of strategies have been developed to this end:

- General practitioners are induced to prescribe drugs by direct or indirect payments made through drug representatives. Such payments in fact only rarely take the form of direct bribes. Much more commonly the physician is provided with samples which he can prescribe and dispense (often to his own financial advantage) and then rewarded for reporting his impressions of the drug's effects – a so-called "drug use study" which is without scientific value but has the double effect of providing financing inducement and at the same time accustoming the prescriber to the use of the new product.
- "Sponsoring" of scientific experts and medical opinion leaders who are induced to present pseudo-innovations as representing substantial therapeutic advances and superior treatment, even where their conclusions fly in the face of the scientific evidence.
- Securing prescriptions and recommendations from influential hospital units. This can often be ensured by providing poorly-funded hospitals with free supplies of the drugs, and again by sponsoring the participation of clinical staff in congresses or scientific meetings, as speakers in medical education courses or as participants in clinical trials.
- "Sponsoring" entire conferences, symposia and post-graduate training for physicians. The total sponsoring and control of a medium in this way virtually eliminates the risk for the sponsor that alternative products will be discussed or will be commented upon favorably.
- "Sponsoring" professional or scientific societies in order to influence clinical or professional guidelines for drug use. In areas where drug treatment has a high economic relevance (e.g. diabetes mellitus), many authors of therapeutic guidelines have on occasion been found to be on the payroll of drug companies [4].
- Paying opinion leaders for authorship of publications in scientific journals, papers which are often prepared and written by personnel or agents of drug companies, but submitted to the journals under the name of the opinion leader only. Some insiders calculate that up to 20% of publications in clinical journals may result from such activities.
- Influencing scientific results by selective funding. It is well known that studies likely to produce favorable results are heavily supported, whereas work likely to prove critical is highly unlikely to be funded at all, or is deprived of support as soon as the findings appear unwelcome. The over-representation of significant pro-industry findings in clinical studies is well documented [5]. In some instances an investigator will find himself contractually prohibited from publishing negative findings [6,7].
- Manipulating and falsifying scientific and clinical data to favour the product of the sponsor. Various of the techniques sketched above contribute to this trend, but there is also an overall tendency to develop close relationships with pliable clinical experts, scientists and scientific institutions so as to ensure that a product acquires an image of superiority. Only some time after marketing, when a wide range of impartial and uncommitted experts examine a drug, may a more sober and truthful account of its characteristics emerge. The phenomenon is well illustrated by the cases of two new anti-rheumatic agents celecoxib (Celebrex) and rofecoxib (Vioxx). These drugs were claimed to be better tolerated and safer than conventional non-steroidal anti-inflammatory drugs, especially with regard to the gastrointestinal mucosa. The claims were based on two investigations (known as the CLASS study [8] and the VIGOR study [9] respectively). Later on it was reported that in both studies relevant safety data had either been falsified or deleted in order to suggest better tolerability [10,

11]. The scientific fraud, if that is the correct term for it, was quite successful from the economic point of view, since both drugs yielded a total return of some 11 billion US$ for Pharmacia/Pfizer and MSD/Merck US in 2001 and 2002. To judge from the results of some later independent studies, celecoxib and rofecoxib are surely classical examples of pseudo-innovations as defined above, drugs which represent no true advance in terms of efficacy or safety but which are marketed in such a manner that they come to be preferred despite the fact that the costs involved are many times higher than those of the drugs which they supplant. In line with such activities, companies on occasion seek to suppress information which would reveal their techniques by threatening critics or journalists with court injunctions. In 2004, the Merck subsidiary MSD-Spain attempted to block independent information with respect to the scientific fraud involving rofecoxib by court action against the author of an independent drug bulletin, demanding withdrawal and rectification [12]. The Madrid court however dismissed the case in view of the fact that there were prior reports of the facts in other drug bulletins [13].

– Creating new markets for drugs by inventing diseases – with the help of insufficiently objective medical experts ("disease mongering"). An approach which has become familiar in its various forms is to interpret normal laboratory data or physiological changes related to aging in such a manner that they can be seen as symptoms of diseases needing drug treatment. The most successful activity of "drug mongers" from the pharmaceutical industry was the conversion of physiological symptoms of the female menopause into the need for hormone replacement therapy from 1960 onwards. This recommendation was promoted by the industry, by industry-sponsored "Foundations" and partial opinion leaders in gynaecology despite the lack of adequate long-term clinical studies to determine the ultimate effects and safety of long-term hormonal substitution in women after the climacteric. Only much later, after more than two decades of publicly funded research, did adequate evidence begin to emerge that hormone replacement therapy in women over 50 years of age actually costs lives due to increased rates of stroke, myocardial infarction and breast cancer. The rate of breast cancer is in all probability approximately increased by 33% in women receiving hormone replacement therapy. Any impartial observer might today put it succinctly and simply: industrial disease mongering, supported by lobbying and meeting a largely uncritical response, succeeded in promoting the use of carcinogenic and disease-inducing agents by healthy women for more than two decades. Oestrogen deprivation in the post-menopause was for many women a disease created by marketing.
– Another recent example of disease mongering is the attempt of Pfizer's marketing to sell sildenafil (Viagra) to women by devising – with the help of uncritical experts – the "Female Sexual Dysfunction" syndrome [14]. About 40% of all women aged 18 to 59 years are said to be suffering from the syndrome in affluent societies, a profitable additional market for the drug. Only recently has Pfizer ceased to fund this work, after the disease mongering involved had been broadly discussed in the mass media.
– A further activity of the pharmaceutical industry aims at creating a need for "life style drugs" in healthy people of affluent societies in areas such as wellness, fitness, anti-aging and obesity. The temptation to tailor-made products for this audience is evident, since they are the largest fraction of the population, and customers in affluent societies have an income sufficient to pay prices profitable to the drug industry. Life style drugs are not indicated for treating diseases, but only for influencing feelings such as dissatisfaction or discomfort. Corrupted medical experts are needed in order to convince consumers that their discontent signals a problem which only can be solved by drug treatment, and perhaps indeed must be so treated if one is to avoid more serious sequels or health hazards. The sales strategy here is to create a troubled conscience in consumers, and the anxiety

that one does not do enough to support or maintain one's health. The era of hormone replacement therapy in women now threatens to be followed by an attempt to introduce wide use of testosterone and other androgenic agents as anti-aging drugs in men, again without prior clinical data on efficacy or on carcinogenic or other risks. Once again, one sees the pharmaceutical industry investing marketing money to create disease awareness and to find pliable medical experts who will be prepared to support and promote these activities.

6. Patients and parents

Since the early nineties the pharmaceutical industry has made intensive use of grass root "nonprofit" organizations of patients and lay groups to support their aims and marketing purposes. The group "Us too! International" lobbied and pressured politicians for measures to introduce PSA-testing for prostate cancer in the elderly male population, even though evidence is still lacking that such testing reduces mortality in prostate cancer. It was found that the so-called nonprofit organization was financed to the extent of 95% (800,000 US$) by pharmaceutical companies engaged in drug treatment in urology. The US Attorney General described the campaign as false, unfair and deceptive [15]. Nevertheless, one must note that the German Federal Council introduced at the same time legislation forcing the statutory sickness fond to pay for PSA-testing. The PSA case is by no means the only example of this technique of patient manipulation; in the USA, the massive use of methylphenidate (Ritalin) for the so-called Attention Deficit Hyperactivity Disorder (ADHD) has been heavily influenced through industrial subsidies to parent groups which have been induced to lobby for the use of the drug in their children [16]. This has happened despite grave doubts as to the existence of ADHD as a neurological disorder justifying the use of a stimulant drug [17].

7. Health care professionals as targets of corruption

The pharmaceutical industry needs medical professionals to ensure the prescribing of its products. In hospitals and other medical institutions, the respective administrative structures determine who is the prime target to be approached, the medical directors or the chief administrators. Pharmacists are also needed, but mainly with respect to the marketing of free-sale (OTC) products. However within the medical profession the industry has sought to create particular links with those physicians who also function as opinion leaders, advisers, referees and researchers. These special groups are therefore more likely to be subjected to influence, pressure and in some instances frankly corrupt practices than are general practitioners or average practicing or hospital doctors. Corruption is therefore particularly likely to enter into the industrial relationship with leading members of professional medical societies and especially in members of self-governing medical bodies within health care systems.

It is evident that there are justifiable grounds for genuine scientific contact between the drug industry and medical or clinical experts, since the industry has no direct access to therapeutic experience or to patients. Some of that contact is healthy and balanced. However, there is in the literature a striking difference between the volume of industry-dependent or industry-influenced product evaluation and the much smaller volume of truly independent drug assessment reaching the printed page. The scarcity of critical drug information in the journals is a harsh reminder of the extent to which the pharmaceutical industry has succeeded in influencing much of the institutionalized medical profession (and in some instances the professional media as well) in their favor. The explanation is once more to be found largely

in finance; the resources available for industry-sponsored clinical evaluation of drugs may well be a thousand fold greater than those which can be secured for independent research and critical analyses. With those vast resources, research projects, travel and meetings can be financed, favors can commonly be granted, sympathy won and lucrative advisory roles can be created. In that complex of influence, direct financial corruption may be secondary since industry can commonly secure its objectives without resorting to it.

8. Consequences of corruption in health care systems

Corruptive practices of one form or another in the marketing of drugs and/or medicinal products can and do interfere with therapeutic strategies in diseases. They have become an essential threat to the freedom of choice for optimal treatment in industrialized as well as in developing countries, since if one's objectivity is deranged one is no longer fully capable of proper choice. It is evident that such trends adversely affect the quality of health care. In addition, the costs of these corruptive activities have to be paid by patients and consumers, since they are ultimately financed from sales. In brief, corruption renders health care more expensive and less effective.

The adverse consequences of these various forms of corruption are however much broader than their direct effects on choice and prescribing. Having created a highly lucrative market within affluent societies, industry proceeds to attune its creative skills, such as they are, to that market; development is concentrated on the provision of new drug entities for the treatment of disorders common in those wealthy communities, even where these diseases are already well catered for, since research following well-known trails is easier, less expensive and less risky than true innovation. Diseases in patients of affluent societies allow much higher returns of investment than do disorders prevalent in developing countries. For such reasons, the global pharmaceutical industry has largely ceased to invest in research and development of drugs for tropical diseases such as malaria or HIV-associated tuberculosis. Virtually all companies have abandoned projects for the development of new antibiotics, especially for tropical infections, because of the insufficient return on investment. On the other hand, new drug entities are still being developed for the chemotherapy of solid cancers, even though it has been shown for at least 30 years that the introduction of these agents did not prolong life expectancy for more than a few weeks. Solid cancers are however primarily a disease of elderly people in wealthy countries, and for such a group industry continues its unhelpful programs of pseudo-innovation.

9. Prospects for change?

Trends in the development of the pharmaceutical industry follow in part the course of economic globalization, but it is tragic that on the way there has been a genuine decline in the quality of new drug development and that its direction has deviated so far from the genuine needs of world society. The consequence can only be a dearth of therapeutic gains and a slowing of progress in health care. In the long run these things will affect not only the health of society but also the standing and reputation of industry itself. The exercise of excessive and improper influence on opinion leaders, the medical profession, health care administrators or politicians may be a stopgap means of maintaining profits, but it is no proper substitute for the flow of genuinely new therapeutic agents which characterized much of the 'fifties and 'sixties of the last century. Merger of companies to expand the pipeline for new drug development serves to maintain efficiency and reduce costs; it can however only temporarily substitute for lack

of genuine innovative capacity and may in fact reduce it, since a merger tends to result in a "streamlining" of the research apparatus, with economies on scientific staff and facilities. Nor does the acquisition of new drug entities from small external groups (largely in the field of biotechnology) promise an answer since one sees little creativity in the biochemical modelling of molecules and receptors, and such biochemical fantasies as do emerge often appear to be too remote from the reality of diseases and their treatment. Biochemical modeling has only proven in a few cases to be a realistic and successful approach in drug development.

Leadership in the pharmaceutical industry as well as in academic circles is needed if one is to restructure drug research, restore its innovative qualities and stop the deviation into the ineffective realm of pseudo-innovation, which binds research capacity for nothing with respect to therapeutic gain. Trying to use intensified marketing as a substitute for true innovation is a recipe for disaster, as exemplified by the case of cerivastatin (Baychol, Lipobay) by Germany's Bayer [18]. The marketing in the US claimed – with assertions of support from opinion leaders – that the drug was more effective than the products offered by competitors. To ensure sufficient effect to support that claim, the dosage of the tablets was doubled, even though Bayer scientists had warned that safety studies in animals documented decreased tolerability at the higher dose. The company's management failed to comprehend the data concerned and allowed the marketing to continue, resulting in a disaster which nearly ruined the company. Despite the lesson which could have been learnt from this experience, the same management tolerated the same form of marketing once more, involving falsification of clinical data in the case of acarbose (Glucobay) in order to be able to claim efficacy [19]. With such experiences on record, it would seem that external and independent control is vital if one is to recognize and correct dangerous deficits in decision-making in the pharmaceutical industry. Openness of decision-making processes appears to be the only way to improve the quality of decisions in the industry, since internal quality controls fail as a result of the hierarchical structures involved.

10. Measures to fight corruption in the pharmaceutical industry

Awareness has to be created in the leadership of the pharmaceutical industry of the damage produced by corruptive strategies employed to influence scientific opinion and practice and the abuse of marketing techniques. Money invested to buy influence destroys the conditions under which sound choices can be made in therapy, and under which health care can benefit optimally from current knowledge. There is a loss of true competition to advance health care and an ever greater financial burden is imposed by the cost of corruptive activities.

A series of complementary approaches are clearly needed if these trends and influences are to be countered effectively. They have been proposed and discussed in various circles but they can be summarized as follows:

- The establishment and introduction of *Codes of Conduct* within the pharmaceutical industry; these may be helpful in developing recognized standards to which firms can and must adhere, with each firm maintaining vigilance with regard to its own ethics and those of its competitors. Codes of Marketing already exist in a number of countries, though largely limited to promotion in the narrow sense of advertising texts.
- Control of relationships between pharmaceutical firms and the health professions could well be attained through *Integrity Pacts* in which industrial management would participate on equal terms with the leadership of scientific and professional organizations and the self-governing bodies of

health care institutions; in such Pacts, the parties would pledge not to engage in either the offering or receipt of bribes, or in other illegal and improper practices.
- The establishment of independent external *Corruption Ombudsmen* or *Controllers*, who would be authorized to perform internal inspections on all sides, ensuring compliance with anti-corruption measures and adherence to Codes of Conduct.
- *Transparency* should be established as to the funding and sponsoring of scientific or professional societies or self-governing bodies, institutions, congresses and conferences as well as meetings of continuous medical education. The financial extent of funding should be documented as well as the beneficiaries of all payments.
- The provision of *any form of benefit* should be permitted only if beneficiaries agree to documentation and publication of their names, the names of sponsors and the form and extent of the benefit enjoyed.
- *Sanctions* should be applicable if any party fails to adhere to agreed and established standards.
- *Blacklisting* of pharmaceutical companies should be possible where they fail to comply with agreed and established standards. To be influential, such listing should be publicly available and should result in the exclusion of the companies concerned from sponsoring of scientific or educational meetings.

Other measures to insure compliance should be considered.

11. Combating corruption in scientific and professional organizations

As noted above, there is today an urgent and growing need for serious cooperation between the pharmaceutical industry and scientific or medical experts in developing innovative new therapeutic strategies and new drug entities. It is also the case that the time and effort devoted by scientific or medical experts collaborating with the pharmaceutical industry will often have to be paid for.

On the other hand, scientific and medical professions, societies as well as self-governing bodies in health care have to understand that no positive value can be attributed to cooperation with pharma-marketing. Marketing violates the ethics of health care professionals when abusing them for the promotion of products by corruptive or other illegal activities or unduly influencing the prescribing of drugs by using false statements elicited from corrupt or uncritical opinion leaders.

To counter corruption in contacts with the pharmaceutical industry, the professions and health institutions have as much a need for a *Code of Conduct* as does industry itself; such a code might be embodied in the various professional and institutional standards which commonly exist already, though rarely dealing specifically with this issue as such. With such a code in place, any professional institution issuing professional statements or recommendations with respect to a drug would be under an obligation to disclose current and past conflicts of interest, the existence of any material or professional connection with the sponsor concerned and the nature and extent of any financial or other benefit received. That particular standard is already imposed by the major journals on authors and peer reviewers but such a Code would render it similarly applicable to verbal presentations, educational tasks, the authorship of guidelines or textbooks, functions as referee and similar tasks.

Finally, as with industrial Codes of Conduct, it should be possible to blacklist particular institutions or professionals who have failed to adhere to proper standards.

12. Other measures to combat corruption

Measures of the nature outlined above are in part attainable by voluntary action on the part of those entities concerned, but they need to be backed in certain respects by the force of the law. National legislation should for example be promoted to create or extend anti-corruption law to members of professional medical societies or self-governing bodies in health care. At the same time, governments should recognize the need for patients' participation and public control at all levels of health care systems, also in the so-called private sector, and establish the necessary legal framework to ensure that in combating corruption, as in other fields, the voice of the patient – the ultimate subject of health care and the ultimate victim of malpractice – is heard.

All the above proposals are provisional and they are ambitious, but they could provide a starting point for radical change in the present unsatisfactory situation.

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