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Transparency in medical research: Time for a paradigm shift☆,☆☆

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Transparency is now recognized to play a crucial role in increasing accountability in health care [1]. For this reason, stringent disclosure requirements have been developed by universities, hospitals and medical journals to document potential conflicts of interest [2], and voluntary codes of conduct have been adopted by industry organizations [3]. Indeed, medical research is very highly regulated. National authorities are appointed in almost every country worldwide to oversee and monitor medical research. In North America, the National Institutes of Health [4] and the Food and Drug Administration regulations oversee new drug development [5]. Similarly, in Europe, the European Medicines Agency [6], and, in Japan, the Ministry of Health, Labour and Welfare [7] have issued significant laws covering financial ties in research.

Nevertheless, these worldwide efforts are said to lack consistency, and the disclosure and transparency system is considered still incomplete [8]. A possible reason lies in the evidence that industry support can skew research in favor of company products. Some years ago, a review of >300 randomized investigations found that the 122 industry-supported trials were more likely to report pro-industry results than the trials whose authors declared other funding sources [9]. Because of this, on September 30, 2014, the Centers for Medicare & Medicaid Services released the Open Payment Program database which constitutes the first systematic nationwide effort to report the financial interactions between health product manufacturers and physicians and teaching hospitals [10].

The public disclosure of individual physician payment data has been advocated as a powerful tool to control health care costs and improve the delivery of care. However, this novel form of transparency suffers from multiple limitations that must be underscored [11].

Apart from the criticism of invading clinicians' privacy, the true value of the database remains unproven given, among other reasons, uncertainty about who the intended recipients are and their ability to use the disclosed information effectively [10]. Limited data exist concerning the effects of financial conflicts in health care decision-making generally and it remains subject to conflicting interpretations [11]. Lessons learned from comparable state-based and manufacturer databases would suggest that interest could well be limited and utilization challenging [12,13]. Evidence from similar disclosure efforts by the states of Maine and West Virginia argues against this possibility when noting "negligible to small effects" on prescribing trends [14].

By far the biggest concern raised about the Open Payment Program's data is how they will be reported to and interpreted

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by the public [15]. Will a payment database permit patients to make better informed decisions when choosing health care professionals and making treatment decisions? As a matter of fact, the number of patients accessing the newly released data is growing with time [16]. A 2013 study from Germany reported that 32% of individuals were aware of physician rating sites and 25% had ever used them [17]. Similarly, a North American study has reported 65% awareness and 23% usage [15]. Rating sites that treat reviews of physicians like reviews of movies or mechanics may be useful to the public but the implications should be considered because the stakes are higher.

If patients are the intended recipients, legitimate questions arise whether they will appreciate the overall research context to distinguish appropriately between beneficial and problematic financial relationships. Reported payment amounts that are large might, at first blush, seem most significant to a research subject even though they cover a clinical trial's legitimate operating expenses. Because the aggregated funds represent payments in their entirety over a given reporting period, principal investigators could be viewed simply as having "received a ton of money" [8]. In other words, expert physicians who are leading investigators in the most important clinical trials can be eventually seen as having the most significant conflicts of interest. On the basis of these observations, it must be recognized that the public cannot truly benefit from a website, unless the format is user-friendly with distinct sections for data access by researchers, regulators, patients, and physicians.

One should also consider that concern about financial ties crowds out consideration of other influences that may bias research conduct [18]. Non-financial interests include considerations other than direct economic gain that investigators still highly value, such as career advancement. Recruiting subjects and completing published studies are essential to an academic researcher's retention, tenure, and promotion. Along with career advancement, investigators may be swayed by the prospects of enhanced reputation, professional honors and prestige [19]. Social relationships formed in the research process also create pressures and can compromise the actions of investigators, journal editors, peer reviewers, and other key stakeholders [20]. In addition, intellectual or political predispositions can bias research conduct [21].

A further obstacle to transparency is constituted by the fact that any financial relationship may be hard to determine, especially when the financial ties are indirect, contingent on future events, or when the Institution/investigator has recourse to alternative sources of funding. Money from external sources, such as industry payments to an academic medical center, frequently gets blended with other revenue streams before reaching an individual department or specific investigator. Not surprisingly, given all these complicated dynamics at play, institutional conflict of interest committees report enormous difficulties in making sense of the actual economic relationships and tracking how the money flows [22].

A major pitfall of the current approach to conflict of interest disclosure lies in the fact that it takes into consideration only economic relationships between manufacturers and physicians. For instance, pharmaceutical or medical device companies may sponsor or provide payments for meetings or conferences, provided they are organized by third-parties who remain responsible for the content, selection of speakers and distribution of monies [13]. The question therefore arises as if the so-called third-parties can influence physicians and investigators. Indeed, research funding in many countries derives often from not-for-profit organizations receiving donations from industry. But also government-funded biomedical research is linked to possible compromising incentives. Even in the highly constricted scenario of an Institution that declines direct payments from private sponsors instead seeking research support from governmental grants, investigators realize that the Institution's continued ability to pay them depends in large part on the Institution's future likelihood of receiving governmental grants, and this in turn increases pressures on investigators to recruit subjects into trials and complete studies with results that are of interest to medical journals [21].

What are potential solutions to the problem? There are no clear solutions to the conflicts' problem, as financial and non financial interests cannot be addressed by regulations alone [23]. The proposals of reforms favoring independent entities overseen by government agencies entirely taking over the design and conduct of clinical trials [20] do not seem to be politically sustainable in the current environment that favors industry collaboration in research and protection of proprietary interests. Optimal regulation in this area proves challenging due to many factors beyond the insufficiency of transparency. To this end, a paradigm shift from the previous era of individuals working alone on resolving problem situations to the newer era of collaborative problem solving is therefore needed [24], as regulations alone may have limited effectiveness in the absence of a culture of professionalism and other incentives that are aligned to promote professional behavior [25]. Therefore, it remains important to reframe the legislative framework. To this end, a coordinated law and professional norm approach appears the most reliable way to effectively warrant transparency and therefore is urgently needed.

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