

# Are Medical Conferences Useful? And for Whom?

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CONFERENCES ORGANIZED BY MEDICAL SOCIETIES and related organizations are a dominant feature of the academic, professional, and social life of all health-related disciplines. These events come in all sizes, from relatively small, local gatherings, workshops, and symposia to large international mega-congresses that mobilize tens of thousands of clinicians, researchers, exhibitors, and staff to build small-sized towns for a few days. The total number of medical conferences is unknown. One source<sup>1</sup> lists 2012 health-related conferences that took place in 2011, including 259 that were online webinars and others that occurred in physical locations around the globe. Clearly, this list is incomplete and represents a fraction of such conferences. An estimate of more than 100 000 medical meetings per year may not be unrealistic, when local meetings are also counted. The cumulative cost of these events worldwide is not possible to fathom.

Do medical conferences serve any purpose? In theory, these meetings aim to disseminate and advance research, train, educate, and set evidence-based policy. Although these are worthy goals, there is virtually no evidence supporting the utility of most conferences. Conversely, some accumulating evidence suggests that medical congresses may serve a specific system of questionable values that may be harmful to medicine and health care.

Problems start with the travel needed to attend a conference. The fuel waste caused by participants traveling to various destinations across the country and around the globe is immense, corresponding to an estimated environmental burden of more than 10 000 tons of carbon per each mid-sized international conference.<sup>2</sup>

The availability of a plethora of conferences promotes a mode of scientific citizenship in which a bulk production of abstracts, with no or superficial peer review, leads to mediocre curriculum vita building. Even though most research conferences have adopted peer-review processes, the ability to judge an abstract of 150 to 400 words is limited and the process is more of sentimental value. Reviewers may screen primarily the names and affiliations to inform an opinion about the work.<sup>3</sup> Such peer review differs from that used at equivalent meetings in

engineering or computer science, at which full proceedings papers are presented, reviewed, and published. Moreover, in these sciences postpublication review benefits from the immediate demonstration that the technology works or does not work—as opposed to the nebulous or nonexistent validation of many biomedical findings.

Moreover, many abstracts reported at the medical meetings are never published as full-text articles,<sup>4</sup> even though abstract presentations can nevertheless communicate to wide audiences premature and sometimes inaccurate results. It has long been documented that several findings change when research reports undergo more extensive peer review and are published as completed articles.<sup>5</sup> Late-breaker sessions in particular have become extremely attractive prominent venues within medical conferences because seemingly they represent the most notable latest research news. However, it is unclear why these data cannot be released immediately when they are ready and it is unclear why attending a meeting far from home is necessary to hear them. A virtual online late-breaker portal could be established for the timely dissemination of important findings.

Meetings may also create a branding system that builds the reputations of scientists working in the field and promotes herding after elevated prestigious opinion leaders.<sup>6</sup> Opinion leaders are experts whose valued utterances can exercise wide influence regardless of, in the absence of, or even against evidence. Gaining the podium for the plenary presentation or important sessions at a major meeting confers prestige, even though there is little safeguard that what these featured speakers say has any value and quality. Each professional society and organization creates its cadre of leaders, with meetings making these leaders visible to the members who usually participate passively by listening. Given the dynamics of large professional societies and conferences, leadership is sometimes judged not on scientific merit, hard work, and originality of thought but rather on the ability to navigate power circles. Some young scientists may be even discouraged to think that merit, hard work, and originality

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of thought is what counts. Instead, they may struggle to become better positioned within influential societies, with the hope that they will some day gain a spot on the podium of the specialty arena.

Power and influence appear plentiful in many of these meetings. Not surprisingly, the drug, device, biotechnology, and health care–related industries make full use of such opportunities to engage thousands of practicing physicians. Lush exhibitions and infiltration of the scientific program through satellite meetings or even core sessions are common avenues of engagement. Although many meetings require all speakers to disclose all potential conflicts, the majority of speakers often have numerous conflicts, as is also demonstrated in empirical evaluations of similar groups of experts named on authorship lists of influential professional society guidelines.<sup>7,8</sup> Disclosure is certainly worthwhile, but it is unclear what objective information can be obtained from meetings at which many speakers have conflicts, even if those conflicts are disclosed. Moreover, it seems difficult for a scientific program to be objective and impartial when the leadership of some professional societies consists of individuals who have extensive conflicts. This is even worse if those individuals have become leaders of these organizations because, at least in part, they have these relationships and conflicts.

In the electronic age in which information can be shared around the world instantly, the contribution of large medical conferences to the dissemination and advancement of science is unclear. Education and training can also happen outside of such venues. A portion of the resources spent on congresses and their accompanying extravaganzas could be better spent developing more efficient educational modes. As for social networking, it is implausible that physicians should visit these artificial cities in 2012, when so many other virtual and real options abound to connect and brainstorm with colleagues. For smaller, focused groups of researchers, in-person meetings may be indeed helpful and indispensable. These small meetings and brainstorming workshops for and by scientists with specific, well-defined aims are likely to require a tiny fraction of the resources currently needed for mega-conferences. Some of the substantial resources for mega-conferences may be better directed toward more scientifically productive research workshops.

Are medical congresses dinosaurs doomed to become extinct? The future will tell. Medical conferences will disappear if physicians stop paying attention to them, if they do not give them value, and if they do not attend them; and, of course, if funders do not fund them. One option is to let evolution and history run its course. However, many interests favor the maintenance of professional meetings that promote the massive sovietization of medical disci-

plines. Thus, natural selection may not be able to operate effectively.

Eventually, some evidence should be accrued on whether specific types of current conferences offer advantages compared with other means of serving the same needs, including social networking tools, remote conferencing, and repurposed meetings. For example, repurposed conferences could be designed to be entirely committed to academic detailing.<sup>8</sup> All their exhibitions and satellite symposia would deal with how to prescribe specific interventions appropriately and how to favor interventions that are inexpensive, well tested, and safe. Such repurposed conferences could also focus on how to use fewer tests and fewer interventions or even no tests and no interventions, when they are not clearly needed.

Another experiment may involve application of more stringent criteria for selecting who organizes medical congresses. For example, one option is to exclude from the organization committees (and also from the leadership of professional medical societies) all investigators with any ties to the industry in the last 3 years.

Large professional meetings, as they are currently run, may really be the best there is in modern medicine—as many sales departments of the pharmaceutical and biotechnology industry and most hotel managers would argue. However, if there is uncertainty and equipoise about the utility or lack thereof of medical congresses, it may be time to perform formal studies to assess what types of meetings or other methods for research dissemination and education work best in training excellent physicians, improving medical care, and controlling cost. The next step probably would be to randomize the first meeting.

**Conflict of Interest Disclosures:** The author has completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

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