NATIONAL ACADEMIES Sciences Engineering Medicine

Sponsor Influences on the Quality and Independence of Health Research: A Workshop

Speaker Abstracts

SESSION 1 – WELCOME, Do Sponsoring Organizations Influence Research?

Lisa Bero, University of Colorado

Research is a process and sponsor interference can potentially influence every step. I will review meta-research studies that describe industry bias in results and conclusions of research, as well as the diverse types of evidence examining the mechanisms by which this bias can occur. Meta-research studies provide strong evidence of "funding bias," showing that industry sponsored research is more likely to have results and conclusions that favor the sponsor's product than research sponsored by other sources. Meta-research examines all relevant evidence across a topic area, not just individual studies. Meta-research describes the direction and magnitude of industry influence across pharmaceutical, nutrition, tobacco, and other health research. Although meta-research studies identify funding bias, they do not provide information on the mechanism by which the bias occurs. Additional types of research are needed to explain the observation of funding bias. Case studies, qualitative interview studies, and analyses of internal industry documents have shed light on the mechanisms of funding bias. Diverse types of evidence show how sponsors influence research agendas, the way research questions are framed, the design of studies, how studies are actually conducted, and whether study results are published in full or not. Industry sponsors have also attempted to influence the standards by which evidence is evaluated. Multiple mechanisms are needed to minimize or eliminate sponsor influence throughout all stages of the research cycle.

SESSION 2 – Protection of Research Integrity

Patricia Valdez, National Institutes of Health

Daniel Greenbaum, Health effects Institute

The Health Effects Institute is a not for profit research institute funded jointly and equally by US EPA and industry to produce science to inform decisions on air quality and health. This presentation will describe the structure of HEI's scientific programs, the safeguards to ensure independence and credibility, and several examples of successful production of trusted science to inform often controversial decisions in the over 40 years of HEI's existence.

Sponsor Influences on the Quality and Independence of Health Research: A Workshop

Clive Green, AstraZeneca UK

In a talk entitled “Influencing research integrity” Dr. Green will share AstraZeneca’s approach to research integrity through the application of corporate bioethical policies and governance processes. The talk will identify the diverse range of topics that can be influenced by private industry sponsors with a research scope spanning clinical, pre-clinical and drug discovery activities; and highlight key features for clinical research integrity. In addition, the talk will out line AstraZeneca’s approach to ensuring research integrity compliance and the mechanisms available to seek guidance on maintaining research integrity in complex situations.

SESSION 3 – Examples of Sponsor Influence of Health Research

David Michaels, George Washington University

It is now common corporate practice for polluters and manufacturers of dangerous products to implement the disinformation playbook made famous by the tobacco industry. These firms employ “product defense” experts to manufacturing scientific uncertainty to impede public health and environmental protections and defeat claims of compensation for victims. To counter this, we must strengthen the evidence base for public health and environmental protections, including complete disclosure of research funding and control of research by independent scientists, and build a research infrastructure in which corporations pay for the research into the potential harms of their products but do not control any aspect of that research. Further, many laws place the burden on public health agencies to prove the danger before acting to protect the public. The presumption of innocence should not apply to chemicals and other products that might be reasonably predicted to be harmful. Waiting for proof of harm before acting will too often permit harm to occur.

Adrian Hernandez, Duke

Influence on research programs and results come from many directions- sponsors, funders, investigators, and technologies. While most attention is focused on the funding of research or direct financial influence of investigators because of the potential for explicit bias, there are also other forms of potential bias. Likewise, influence of research or results is not limited to industry with direct benefits from the results on their research products. For this presentation, examples of potential implicit bias or influence on research results will be shared for a range of actors in the eco-system including sponsors or funders, vendors, investigators and healthcare systems**.**

Laura Schmidt, University of California, San Francisco

Food industry sponsorship of nutrition science is deeply problematic and should serve as a cautionary tale for other fields of inquiry. I argue that we should prioritize efforts to improve transparency in the sub-field of nutrition research focused on ultraprocessed foods. These foods have the greatest potential to harm health today, and the companies that produce them are already quite influential in setting the research agenda and biasing the evidence base.

Martin McKee, London School of Hygiene and Tropical Medicine

Guidelines on assessing the quality of health-related research typically focus on the content of individual studies, ensuring that the methodology is appropriate, the results are consistent with what is being done, and the interpretation is appropriate. However, the assessor can only go what they have in front of them. But what about the studies that are not available? The phenomenon of publication bias is well-known and is typically sought by means of a funnel plot. But what happens when studies are deliberately suppressed or methodologies designed to get the results that the sponsor wants?

This paper will tell a story of what happened, behind the scenes when the tobacco industry was trying to persuade the world that second-hand smoke was harmless. It begins with a Swedish professor who was managing, arm’s-length, a secret testing plant in Germany for Philip Morris. He was being paid large sums of money to create doubt about the impact of second-hand smoke, something he did very well.

The testing plant undertake a large amount of work, only small amount of which was published. Based on its publications, it seemed that most of its work was not on tobacco, the opposite of the reality. Some of this research was designed to manufacture doubt, for example, about the methods used to measure exposure to second-hand smoke. But other studies were designed to find the designs and conditions under which studies would yield the desired results. This information could then be used to develop a protocol for independent researchers to use.

This information only came to light because of a series of fortunate coincidences and the availability of internal tobacco industry documents. It challenges the argument, sometimes put forward, research findings should be judged purely on the quality of the methods used.

Adam Dunn, University of Sydney

There is strong evidence that funding from certain sources leads to differences in the design, reporting, synthesis, and communication of health research. These differences can produce research outputs that are marketing masquerading as robust research. Recognizing this problem, funding disclosures are now expected for most health research reporting. The challenge is that even if disclosure practices were perfect, readers have no tools to quickly decide what to do with a disclosure when they encounter one—should they ignore industry-funded research, scrutinize the research because of risks, or implicitly trust it because the author must be an expert?

Assuming we do not want to simply throw out the results of research funded by certain sources or undertaken by people who have conflicts of interest, most solutions require better data. Calls for public records of funding and conflicts of interest for individual researchers for at least 15 years, but the real value of having publicly accessible information is the potential to build predictive models that can quantify risks to design, reporting, synthesis, and communication of health research. These models can then be used in tools that could flag high risk research protocols, manuscripts, and communications, or even statistically adjust for confidence in the results and conclusions.

Dean Schillinger, University of California, San Francisco

Dr. Schillinger will provide a first person-narrative case study about the influence of the beverage industry on published public health research related to the type 2 diabetes epidemic.

SESSION 4 – MODELS, PROCESSES, AND PRINCIPLES USED TO PROTECT THE INDEPENDENCE AND QUALITY OF RESEARCH

Sunita Sah, Cornell

Professionalism is often viewed as a desirable and sought-after trait. However, a potential dark side of professionalism exists: a high self-concept of professionalism often coexists with a shallow notion of the concept and paradoxically can lead to detrimental outcomes, such as greater unethical behavior and increased vulnerability to conflicts of interest. In this presentation, I will describe the circumstances in which this outcome is likely to occur and how workplace policies that rely solely on cultivating such intrinsic values at the expense of extrinsic controls may have a contrary effect. I will introduce the concept of deep vs. shallow professionalism and I will discuss several proposed policy solutions to manage conflicts of interest, such as education and training, sanctions, second opinions, and disclosure policies. These proposed solutions for dealing with conflicts of interest are largely based on inaccurate intuitions regarding the psychological processes that underlie them; consequently these policies tend to fail or have unintended consequences. In the absence of eliminating conflicts of interest, solutions that are more likely to be successful consist of identifying and changing professional norms that exert powerful influences on behavior. The best policies to address conflicts of interest are those that integrate both intrinsic and extrinsic approaches, and I recommend redefining professionalism as a deeper concept that includes a set of consistently repeated practices rather than merely a character trait.

Rita Redberg, University of California, San Francisco

Industry funding for medical research is growing and accounts for the majority of medical research worldwide. This presentation discusses the importance of maintaining the independence of investigators

in all research, to produce the highest quality science and protect patients. I will discuss the role of the funder in research, including principles of the relationship should be between funders and investigators to promote academic integrity, and how policy and action can protect investigators' independence in completing research. I will also discuss the role of journals in promoting high quality and ethical research.

Quinn Grundy, University of Toronto

Meta-research has established evidence that industry sponsorship of research is associated with research agendas, results, and conclusions that are favourable to the sponsor. Currently, the majority of pharmaceutical clinical trials globally are funded, conducted, and disseminated by industry. Sponsor influence over the conduct and dissemination of clinical trials poses risks that stem from lack of public access to proprietary data, inequities in access to patented treatments, and the unethical treatment of research participants. While disclosure can make these impacts visible, we urgently require new models for biopharmaceutical research that create and promote independence from commercial sponsors. I will discuss recent research and policy projects that offer insights into alternative models for conducting and disseminating biopharmaceutical research, that emphasize independence, open science practices, equitable access to health technologies, and public health agendas.

Vincent Cogliano, California EPA Office of Environmental Health Hazard Assessment

Special interests can threaten the quality and independence of scientific committees just as sponsors can influence the underlying research. The International Agency for Research on Cancer (IARC) developed principles and processes that protect the scientific integrity of the work produced by its invited committees. These principles recognize that the most-informed experts sometimes have a conflicting interest. IARC resolves this tension by strictly limiting the role of conflicted experts. Experts with conflicting interests do not perform critical functions such as chairing a meeting or subgroup, drafting text that summarizes or interprets cancer data, or developing conclusions. IARC requires a full declaration of interests before it invites experts and uses objective criteria to elicit this information. In addition, even with an impartial expert panel, there is still potential for tampering by special interests, and IARC takes measures to reduce this potential. IARC’s processes can serve as a model for other public health agencies.