

Lessons from the California EMF Program

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The California EMF program was a \$7 million policy relevant research program governed by a stakeholder's advisory committee made up of concerned citizens, public interest groups and representatives of electric industry and electric unions. Instead of first deciding if we were certain that there were health effects from power lines and appliances, and only then recommending the most stringent control measures, we started with policy projects that asked the question: "How certain must we be of how much EMF caused disease before we would move from inaction to cheap or expensive EMF avoidance measures?" We discovered that our stakeholders divided into two ethical world views. On the one hand were the duty ethicists who like Moses "honored their mother and father even when it was not cost beneficial to do so". On the other hand were the results ethicists who sought "to do the most good to the most people at the least cost". Our policy analyses on power lines and on schools accordingly paid attention both to the ethical duty perspective and the cost effectiveness and cost benefit perspective. In the latter perspective we paid attention to the cost benefit for different stakeholders, not just the state as a whole. It turns out that even cold blooded economists would move toward moderate cost avoidance measures at a fairly low degree of certainty of disease but would never move to the most expensive measures no matter how certain they were of disease. On the other hand, duty ethicists would adopt the most expensive avoidance measures (a position that the United States often takes with regard to military matters).

With regard to risk assessment we developed an approach different from the usual one taken by USEPA and IARC. We developed a "willingness to certify causality" scale similar in spirit to the one developed for global warming. We developed a framework for explaining the reasons for adopting our degree of certainty. We made explicit that fact that professional judgement was required (just as it is in the law or medicine) and that reasonable people could derive different degrees of the willingness to certify causality from the same evidence. We displayed these differences among the three scientists who did the certification. We were "close to the dividing line between certifying or not certifying that the 99th percentile of EMF exposure in the USA caused some degree of increased rates of childhood leukemia, adult brain cancer, Lou Gehrigs Disease and miscarriage. We then discussed what this added risk might be in terms of the increase to the overall rate of disease in the state, the increased risk to the most exposed and the added lifetime risk to exposed individuals as well as the probability that a highly exposed individual would NOT get the disease. We used these several framings because psychologists have found that they vary as to alarm and reassurance