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Application of Precautionary Framework in ELF and RL Fields in Taiwan **Yi-Ping Lin, PhD¹, Tsun-Jen Cheng, MD, ScD², Peter Chang, MD, ScD³**

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We have applied the Precautionary Framework (PF) proposed by the WHO EMF project in analyzing the cases of extremely low frequency (ELF) and radio frequency (RF) fields in Taiwan in the past few years. The major concerns are the possible health risks associated with high-voltage power lines and mobile phone communications in this newly developed country. The application of the WHO PF has been helpful in providing risk management options under the condition of scientific uncertainty and major public concerns.

As one of the most densely populated countries in the world, Taiwan has increased dramatically its usage of electricity over the past decades. Several important population-based epidemiological studies have been conducted in Taiwan on the health effects of ELF. Increased risk of childhood leukemia (Standard Incidence Rates = 1.49, 95% CI = 1.16-1.91), adult leukemia (Relative Risk=2.0, 95% CI = 1.4-2.9), adult tumors, and sleep disturbances among women have been reported. Other than ELF exposure, the general public in Taiwan, however, is also greatly concerned about the height and the shape of wide spreading electric transmission towers or poles throughout the communities. Several civilian groups in Taiwan have used the cultural concept of “Feng-Shui” in protesting the disturbance brought by the electric towers in their communities. Although the government of Taiwan has had long-term plans to move high-voltage power lines undergrounds to prevent the damage of typhoons and earthquakes, as well as to reduce the public concerns, the progress thus far has not met the expectations of those concerned civilians.

On the other hand, the current penetration level of mobile phones in Taiwan is 57%, comparable to those of the most penetrated countries. To reduce possible RF health risk, the Department of Health is in the process of advocating the regular use of hands-free kits by the general public. For the general public, there are however more concerns on the health risks related to the base towers or stations, rather than to the handsets. In order to improve the communication to the public, the Department of Health has been recommended to make its decision making process more transparent.

From previous field experience in exploring environmental health risks in Taiwan, it is advisable that the International Commission on Electromagnetic Safety (ICEMS) and the WHO EMF projects incorporate qualitative methods and harmonize the risk perception of the communities in different culture context in future health risks assessment.

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