

## **Distance Related Effects near Radio and Television Transmitters – A New Perspective - Cyril W. Smith**

The *Study* reported in the paper on, “Cancer Incidence near Radio and Television Transmitters in Great Britain II. All High Power Transmitters”<sup>1</sup> reports on, ‘...findings for adult leukemias, skin melanoma, and bladder cancer near the 20 other high power radio and TV transmitters in Great Britain...’ (*other* than the Sutton Coldfield transmitter previously studied). It concludes that:

“...while there is evidence of a decline in leukemia risk with distance from transmitters, the pattern and magnitude of risk associated with residence near the Sutton Coldfield transmitter do not appear to be replicated around other transmitters. ....”

This *Study* and its findings appear at odds with the ‘gut-feelings’ of local residents communicated to the writer. Here, it is re-examined so far as its published data allows.

### **Population Density**

In England and Wales as a whole, the average population density is 940 persons/square mile which is 363 persons per square kilometre. ‘The total study population was around 3.39 million persons’. ‘The study areas were defined by circles of radius 10 km from each transmitter’. Thus, 3,390,000 persons within 20 areas each of 10 km radius (= 314.2 sq. km) gives an average population density of 539 persons per square kilometre. This is quite consistent with the above estimate since these transmitters serve major centres of population and will be adopted for the following calculations.

### **Cancer Incidence - Expected Number of Cases**

The *Study* used cancer registration data post-coded to the address at diagnosis for the years 1974-1986 (1974-1984 in Wales, 1975-1986 in Scotland). If the overall incidence of leukaemia is approximately 5/100,000 per year<sup>2</sup> then, over a period of 12 years the expected incidence would be 60/100,000 persons.

Table 1 compares the expected incidence of all leukaemias based on an average population density of 539 persons per square kilometre to the *Study*'s observed cases as a function of distance from all transmitters taken from the data given in Table 2 on p.14 of Ref. 1.





