# Wireless Communication: Health, Science and Policy

## MoH Perspective

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# Decision making in Public Health

- Evidence-Based data (epidemiological evidence)
- Economical evaluation
  - Cost-benefit
  - Cost-effectiveness
- Legal considerations
- Ethical issues
- Cultural-political aspects
- Global environment (what do others do?)
- Time restraints/windows of opportunity

# Data collection to determine policy

- **Data → Information → Evidence**

**Data and information are needed to:**

1. **Estimate the magnitude of the problem**
2. **Evaluate the suggested policy**
3. **Assess the decisions that determine the policy**

# The true value of data

- **The possibility to reach a better decision**
- **The chance that this decision will lead to a better policy**

**BUT…**

- **Can we distinguish between a data-based decision and an intuitive one?**

- **What are the "BEST PRACTICES"? Is it enough to do a literature search?**

# *Sir Austin Bradford Hill, 1965*

- **All scientific work is incomplete – whether it be observational or experimental.**
- **All scientific work is liable to be upset or modified by advanced knowledge.**
- **That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time."**

# Philosophies of regulation

- Regulation of only proven toxicants: “count the bodies”
- Best available technology (BAT) approach: engineering solutions
- Protect all citizens with equal effectiveness: uniform risk/equal rights
- Cost-effectiveness or cost-benefit
- If any evidence suggests harm, estimate hazard: “Delaney” approach

# Policy making under uncertain conditions

- **PRECAUTIONARY PRINCIPLE**
- **PRUDENT AVOIDANCE**
- **ALARA (As Low As Reasonably Achievable )**

# PRECAUTIONARY PRINCIPLE

- **Act decisively against possible risk, even though the scientific evidence is lacking. Do not await for the final results of research.**

- **Used by British government to deal with the BSE epidemic to prevent risk of transmission to people. At the cost of ~ 27,000,000,000$!**

# PRUDENT AVOIDANCE

- **This is a risk management policy.**
- **Steps, that will decrease the public's exposure to a risk factor (pollution), even in the absence of the scientific proof of a negative health effect.**
- **<u>Prudent</u> - refers to the expenditure, not the risk.**

# ALARA
# (As Low As Reasonably Achievable )

- **Cutoff values based on acceptable risk, not on scientific threshold.**

- **Make sure that there will be the lowest possible exposure, considering the costs, technology, public health and safety.**

# Cell phones and Public Health

- **Inseparable part of the modern day-to-day routine**
- **In Israel:**
  - **№ of cell phones higher than the total population**
  - **Among the highest rates of usage in the world**
- **The public, the scientific community, and the decision makers are worried about the possible health effects of the new technology**

# Cell phones and Public Health
# Why worry?

- The antenna is very close to my ear (and brain)
- This electro-magnetic energy may permeate into the adjacent tissue (brain) and cause damage.
- Local heating may injure cellular metabolism
- A single cell injury may be the first step, that leads towards a neoplastic change

# Cell phones and Public Health cancer research

- **Findings are not final (yet?)**
- **Mainly retrospective approach.**
- **Latent period >10 years.**
- **Few studies (including in Israel) reported of a weak association, among "heavy speakers"**
- **Possible relation with distance from antennas**

# Cell phones and Public Health

- **Driver's reaction time:**
  **during 1 second at 80 km/h, the vehicle passes 22.2 meters.**

- **Use of cell phones during driving is an important risk for accidents**

# Cell phones and Public Health application of prudent avoidance

- Increase distance from target organs (eg. – use earphones)
- Talk less in an area of low signal
- Special precautions among children
- No talking during driving

- Build more antennas?


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# “Too many”? Advisory boards/scientific committees - CANCER

- MoH: National council for treatment and prevention of cancer
- MoH: Advisory committee on epidemiology of cancer
- Inter-governmental committee on carcinogens, mutagens and teratogens
- NGO(?): Advisory committee on environmental carcinogens
- MoITAL: The committee for “dangerous dust”

# MoH-MoE collaboration

- “Traditional” collaboration
- The forum for Environmental Health (+EHF and others)
- Clean air low

- Common objectives Vs. Conflicts

- HIA as an example

# HIA

**Health Impact Assessment – a methodology which enables the identification, prediction and evaluation of the likely changes in health risk, both positive and negative, single or collective of a policy program plan or development action on a defined population. These changes may be direct and immediate or indirect an delayed.**

**Health Impact Assessment – any combination of procedures or methods by which a proposed policy or program may be judged as t the effects it may have on the health of a population.**