



# Developing good practice antenna policies for mobile networks

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GSM Association

Seminar 1:  
“Health and Infrastructure Development”  
Wednesday 24 April 2013 - Marriott Hotel - Bogota, Colombia

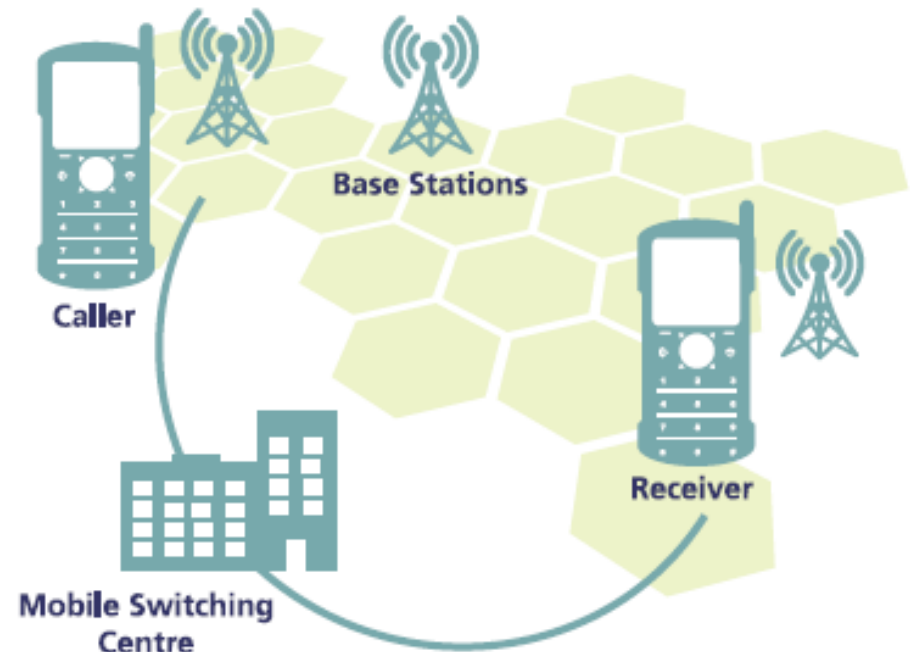
# Demand for Mobile Network Infrastructure

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- More base stations to provide:

- More coverage.
- More capacity.
- Higher data rates.

- Potential public concern.



# Public Concern Can Drive Policy

- Risk perception factors:
  - Perceived uncertainty and lack of knowledge.
  - Personal control versus imposed exposure.
  - Direct versus indirect benefits.
- Health claims as a cover for other concerns.
- Political responses.

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Rojales

## Solicitan a Sanidad un informe para saber si aumentan los casos de cáncer

35

28

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### Rio de Janeiro sets new rules on telecom towers

Posted on 04 November 2011 by Roberta Prescott. Tags: [Anatel](#) [Brazil](#) [Infrastructure](#) [legislation](#) [towers](#)

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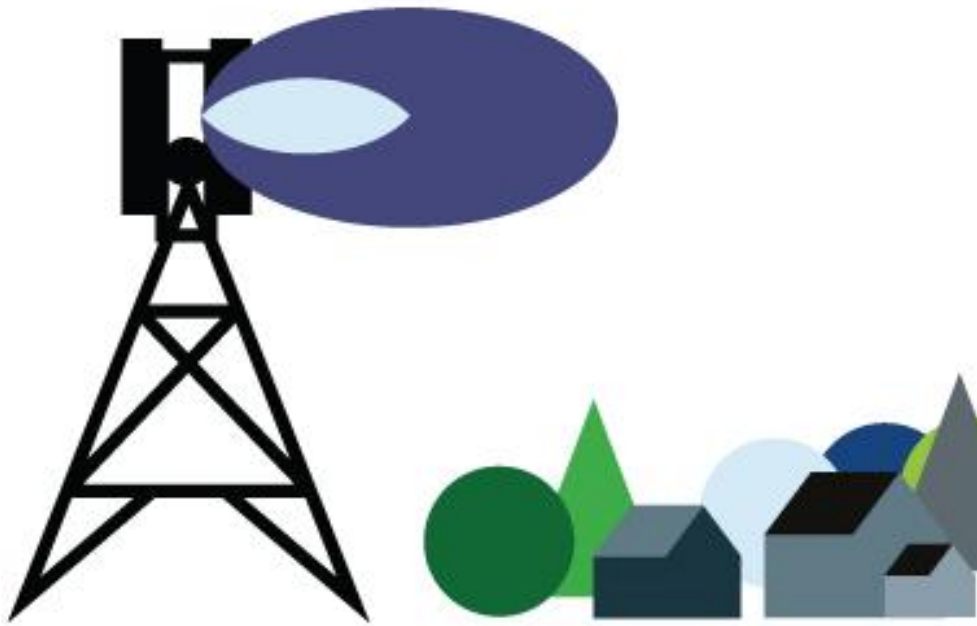
In Brazil, the city of Rio de Janeiro has new rules for installing radio base stations sites. The city is establishing a series of stricter rules for telecoms towers, both in public and private.

Among the main features, carriers will have to share their towers and maintain a minimum distance of 500 meters between the antennas on the ground. In addition, it has banned the installation of antennas on canopies and facades, as well as within 50 meters of schools hospitals and clinics.



# Summary - environmental levels of radio signals

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- Typically far below WHO recommendations.
- Little change in exposure since the introduction of 3G.
- All mobile technologies resulted in similar exposure.
- Similar to other sources of radio signals.
- Ground level distance does not predict exposure.

# Planning exclusion zone policies

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- Political response.
- Arbitrary distance.
- Unrelated to exposure.
- *‘...there is no scientific basis for establishing minimal distances between base stations and areas of public occupancy... There are many sources of exposure to RF fields, and it would in practice have little impact on people’s overall exposure.’*  
– UK, Health Protection Agency

# Study Methodology

- Technologies:
  - 850 MHz WCDMA.
  - 900 MHz GSM/WCDMA.
  - 1800 MHz GSM/LTE.
  - 2100 MHz WCDMA.
- Pre-schools, schools, hospitals.
- Impacts of different exclusion zone distances.



# Hypothetical Exclusion Zones - Summary

- If 500 m zone applied :
  - across whole urban area would affect >50% of antennas.
  - Rises to ~90% in dense urban area.
- Planning exclusion zones are unworkable.



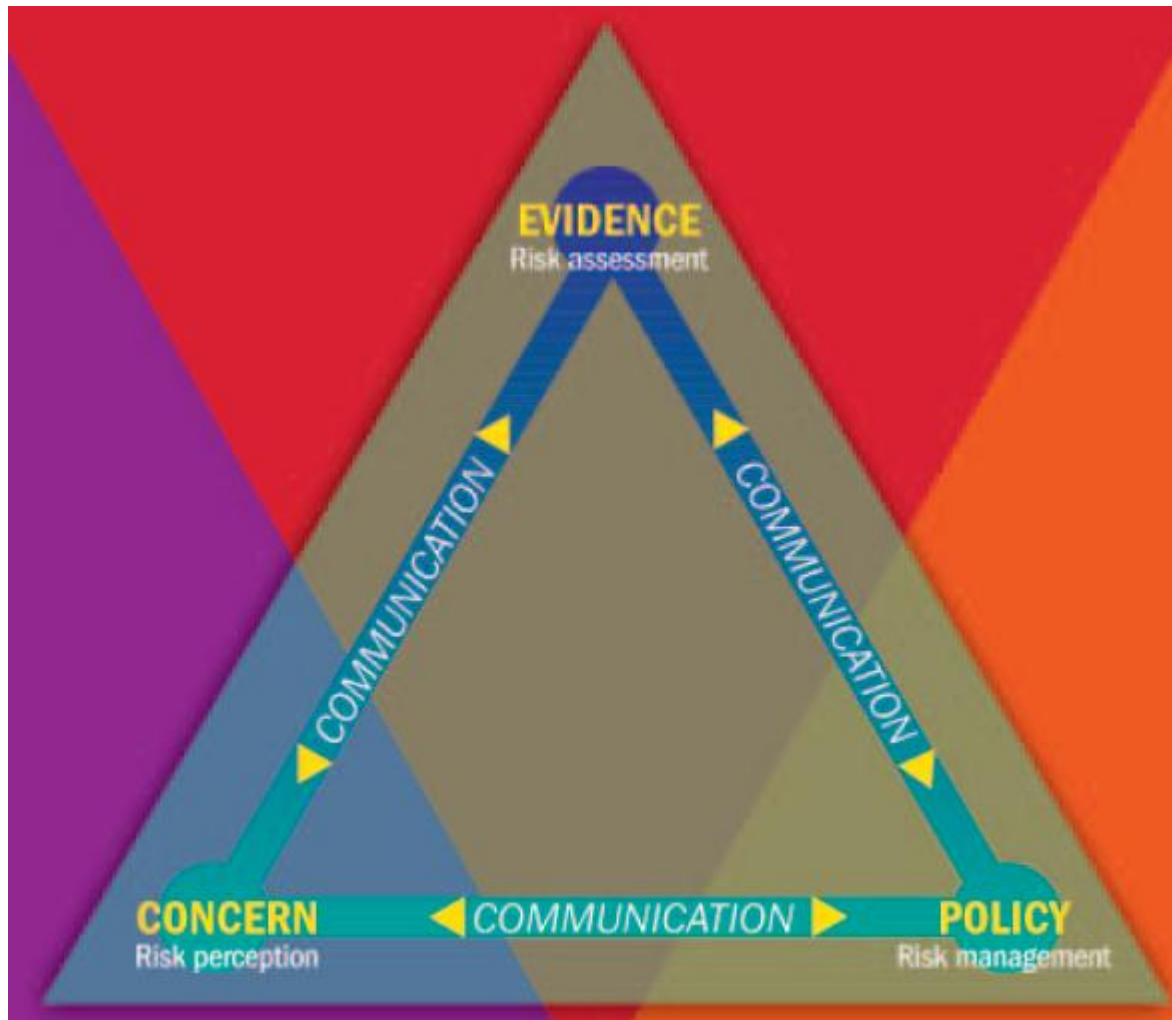
Impact of exclusion zone policies on siting base stations  
Australian case study analysis

Prepared for GSMA by Evans Planning,  
In association with Manildis Roberts and Piconet Consulting  
August 2012





# Responding to EMF Issues





# National Policy for Mobile Networks

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- Mobile networks are national infrastructure deployed locally.
- Consistent policy protects public and supports rollout.
- Comply with national RF exposure limits through assessments.

**USA:** *‘No State or local government or instrumentality thereof may regulate the placement, construction, or modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission’s regulations concerning such emissions.’*

# National Planning Policy for Networks

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- Consistent policy protects public and supports rollout.
- Comply with national RF exposure limits through assessments.

**UK:** *‘if a proposed mobile phone base station meets the...ICNIRP guidelines...it should not be necessary for a local planning authority...to consider further the health aspects and concerns about them.’*

# National Planning Policy for Networks

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- Mobile networks are national infrastructure deployed locally.
- Consistent policy protects public and supports rollout.
- Comply with national RF exposure limits through assessments.
- Mandatory decision period for site applications.

**USA:** 'shot clock' specifies 90 days for collocation applications and 150 days for siting applications other than collocations.

**UK:** 56 days for masts below 15 metres and some rooftop developments.

# National Planning Policy for Networks

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- Mobile networks are national infrastructure deployed locally.
- Consistent policy protects public and supports rollout.
- Comply with national RF exposure limits through assessments.
- Mandatory decision period for site applications.
- Simplify procedures for small antennas, low power and modifications.

**Ireland** – antennas smaller than 2m on rooftops do not require permits.

**Italy** – sites less than 20W transmit power do not require permits.

**Netherlands** – most upgrades are permit free.

# National Planning Policy for Networks

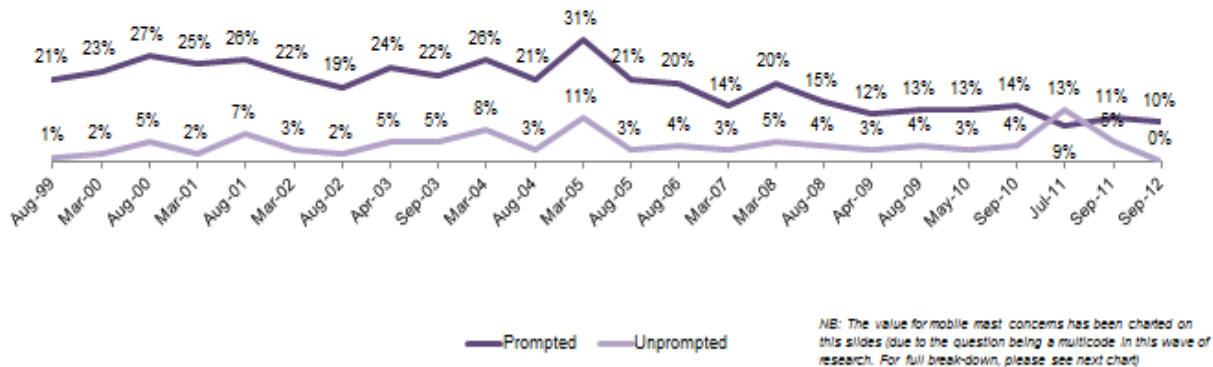
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- Mobile networks are national infrastructure deployed locally.
- Consistent policy protects public and supports rollout.
- Comply with national RF exposure limits through assessments.
- Mandatory decision period for site applications.
- Simplify procedures for small antennas, low power and modifications.
- Allow site sharing where technically and commercially feasible.

# Good policy reduces concern

The proportion of respondents mentioning handsets/ masts as a concern is gradually decreasing

Percentage mentioning handsets/ masts as a concern



Base: All GB adults (1963)  
P10Q1: What, if any, health-related dangers concern you most nowadays? Please type in the box below.  
P15Q1: And which other health-related dangers are you also seriously concerned about? Please tick all that apply.

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## UK Strategy

- International limits
- National mast policy
- Code of practice
- Sample audits
- Information
- Research support



# mHealth Requires Network Coverage and Capacity

**public**TECHNOLOGY.NET

Published on PublicTechnology.net (<http://www.publictechnology.net>)

## Dropped signals stymie NHS mobile trials

Created 2011-09-12 09:22



Poor connectivity is hampering efforts in the NHS to exploit mobile technology that, if done properly, could deliver annual savings of at least £3,000 per doctor.



# Summary

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- Adopt evidence based RF policy harmonised with international recommendations.
- Adopt a national policy for deployment of mobile network infrastructure that protects public and supports services.
- Avoid policies that increase concern.

# Established Risk



# Thank You

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## Resources

July 2012 – GSMA Health & Environment Newsletter

July 31, 2012

