



TEHRAN UNIVERSITY  
OF  
MEDICAL SCIENCES

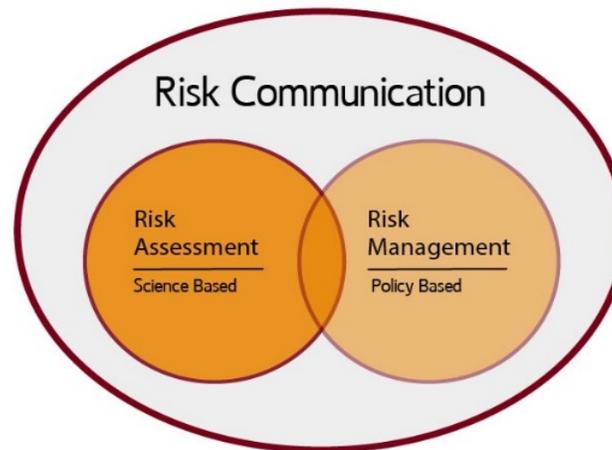
# Risk Communication in Air Pollution

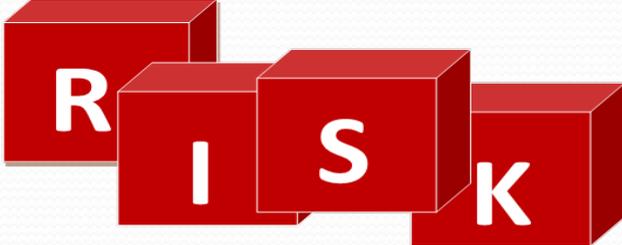
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# Risk communication

- Risk communication is an interactive process of exchange of information and opinion among **risk assessors**, **risk managers** and other **interested parties**.
- The of the coherence of messages
- The only way to be sure that the desired message is both **believed** and **received as desired** is to evaluate whether the desired audience **has gotten and understood** the message.





**RISK**  
**COMMUNICATION**

Good communication:

Creation of a **true and balanced dialogue** between responsible authorities and different stakeholders through **mutual trust and participation** is essential.

## Difference between reporting, informing people and communicating with people

- ▶ **Reporting:** **Submitting** a formal set of data and information to authorities
- ▶ **Informing:** Making information and or data available to whoever is interested in them in both passive and active ways. Informing tend to be **a one way** process.
- ▶ **Communicating:** Information is actively used to inform audience with the ambition to engage **in a dialogue** and/or to influence their knowledge, attitudes and even behaviour. It is a **multi-way** process.

(Informing the audience can be part of a communication campaign but without additional efforts assuring a multi-way flow of information true communication is not established)

# Stakeholders in Risk Communication

- Risk Assessors
- Government policy-makers and those who influence them
- Law enforcers
- Media
- Environmental and health professionals
- Healthcare providers
- The public
- Vulnerable populations
- Industry and transport sectors (pollution source managers and workers)



•The most effective way is to develop separate messages for each audience

## The public as a group of audience

- The public not only suffers from poor air quality, very often the public is also a source of pollution, especially when driving a car



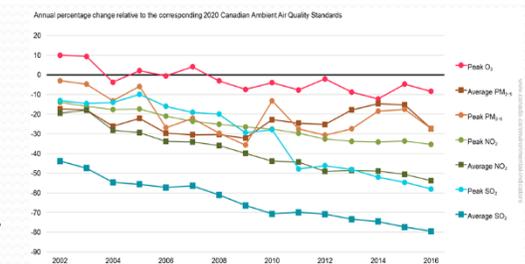
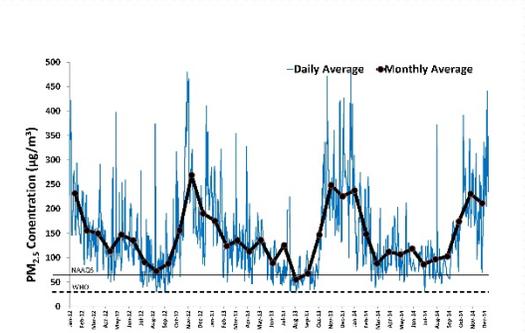
**But**

- Most of the reports only consider the public as an audience while other audiences are important and should not be ignored.

# Types of information

It is useful to determine specifically what type of information one wishes to convey, prior to focusing on the detailed content.

- Pollutant emissions
- Ambient air quality data,
- Ambient air monitoring observations,
- Integrated/modeled emissions and ambient air data,
- Suspected or observed health impacts,
- Indicators (or combined summary measures), and
- The statistical uncertainties for each of these measures.



*Most information seems to answer questions nobody has asked*

## **Vehicles through which to convey information**

**Communications should include a variety of vehicles, including**

- Complete and summary scientific reports,
- Peer-reviewed scientific papers,
- Brochures with a policy focus,
- Brochures for public,
- PowerPoint presentations with a scientific focus,
- PowerPoint presentations with a policy focus,
- Q&As/FAQs with a scientific focus,
- Q&As/FAQs with a policy focus,
- . . . . .

## Factors that are important for creating the message

- **Determination of the audience:**
  - **Risk Managers, Government agencies, Industry, Public, . . . .**
- **Duration of exposure**
  - short or long
- **Type of pollutants**
  - Gaseous or particulate
  - Course or fine particles
  - Chemical property
  - . . . .
- **Level of air pollution**

## Short (episodes) vs long-term (persistent)

Risk communication (the messages, media and the audiences) may be quite different for short term (episodes) of air pollution and long term (persistent) elevation of pollutants.

For **short term**, avoidance of exposure by general population may be effective (beside other measures), but **for persistent** situations this does not work and efforts should be directed on reducing production of pollutants.

## Examples of messages depending on the pollutants

### On Days when High **Ozone** Levels are Expected, Take these Extra Steps to Reduce Pollution:

- Choose a cleaner commute - share a ride to work or use public transportation.
- Combine errands and reduce trips. Walk to errands when possible.
- Avoid excessive idling of your automobile.
- Refuel your car in the evening when its cooler.
- Conserve electricity and set air conditioners no lower than 78 degrees.
- Defer lawn and gardening chores that use gasoline-powered equipment, or wait until evening.

### On Days when High **Particle** Levels are Expected, Take these Extra Steps to Reduce Pollution:

- Reduce the number of trips you take in your car.
- Reduce or eliminate fireplace and wood stove use.
- Avoid burning leaves, trash, and other materials.
- Avoid using gas-powered lawn and garden equipment.

# Fine particles vs. coarse ones

- When PM<sub>2.5</sub> is our problem, asking people to produce less pollution may work:
  - Using public transportation
  - Do not make fire
  - Avoid unnecessary transportation
- But when we tackle Dust Storm, the message should be different
  - Can we ask people to avoid physical activity or stay at home?
  - Is it reasonable to close schools?
    - What should their parents do with their children? Leave them alone in the home or take them to their work environment?

# **There is no generic solution for air pollution risk communication:**

- Air quality problems are different
- The relative importance of air quality to other problems might also be different
- So each city needs its own strategy (audiences, content of message(s), media, etc.)

| <b>audience</b> \ <b>Messages</b> | Reduce physical activity | Development of public transportation | Using public transportation | Providing/using clean fuel | Moving industries | Phasing out old vehicles | Using electronic cars | Walk or use the bike | ... |
|-----------------------------------|--------------------------|--------------------------------------|-----------------------------|----------------------------|-------------------|--------------------------|-----------------------|----------------------|-----|
| Government policy-makers          |                          |                                      |                             |                            |                   |                          |                       |                      |     |
| Media                             |                          |                                      |                             |                            |                   |                          |                       |                      |     |
| Environmental professionals       |                          |                                      |                             |                            |                   |                          |                       |                      |     |
| Industry and transport sectors    |                          |                                      |                             |                            |                   |                          |                       |                      |     |
| Healthcare providers              |                          |                                      |                             |                            |                   |                          |                       |                      |     |
| The public                        |                          |                                      |                             |                            |                   |                          |                       |                      |     |
| Vulnerable populations            |                          |                                      |                             |                            |                   |                          |                       |                      |     |

messages

Short or long term air pollution

Type of pollutants (gaseous or particulate)

## Awareness of public; Yes or No?

- In some situations **public announcement** may have no benefit, specially when there is no effective measure of prevention.

... An airplane that is in the air, both of its engines suddenly stop working, what should the pilot say and to which audiences?

Is it reasonable to aware passengers?

What they can do to manage this situation?





Thank you for your attention