

# Bhopal Disaster

## The Gas Tragedy

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Group 15

# AGENDA

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1. About the Disaster
2. From the Humanitarian Logistics Aspect
3. Specific Actions Taken
4. What Was Right?
5. What Was Wrong?
6. Lessons Learned



# About the Disaster

The disaster occurred on December 3, 1984, in Bhopal, India.

Over 40 tons of toxic methyl isocyanate (MIC) gas was leaked from the Union Carbide's (UCC) pesticide plant.

Gas was spread into a radius of 7 km, affecting 36 wards.

The immediate death toll of 3800 people was recorded.



An aerial photograph of a village with several small houses and a large industrial facility with tall chimneys in the background. A white rectangular box is overlaid on the center of the image, containing a vertical flowchart with three grey boxes and two downward-pointing arrows.

**DISASTERS**

**MAN MADE**

**SUDDEN ONSET  
(chemical attack)**



**Table 1: Health effects of the Bhopal methyl isocyanate gas leak exposure [8, 30-32].**

Early effects (0–6 months)	
Ocular	Chemosis, redness, watering, ulcers, photophobia
Respiratory	Distress, pulmonary edema, pneumonitis, pneumothorax.
Gastrointestinal	Persistent diarrhea, anorexia, persistent abdominal pain.
Genetic	Increased chromosomal abnormalities.
Psychological	Neuroses, anxiety states, adjustment reactions
Neurobehavioral	Impaired audio and visual memory, impaired vigilance attention and response time, Impaired reasoning and spatial ability, impaired psychomotor coordination.
Late effects (6 months onwards)	
Ocular	Persistent watering, corneal opacities, chronic conjunctivitis
Respiratory	Obstructive and restrictive airway disease, decreased lung function.
Reproductive	Increased pregnancy loss, increased infant mortality, decreased placental/fetal weight
Genetic	Increased chromosomal abnormalities
Neurobehavioral	Impaired associate learning, motor speed, precision

# Short term and long term effects of the MIC gas

# Statistics About the Disaster

**500,000**

people were exposed  
to MIC

Death toll rose to the

**10,000**

in the first few days.

It is estimated that

**15,000**

people died due to the  
gas leak

**“15,000 to 20,000**

premature deaths  
occurring in the  
subsequent 2 decades.”





## Precautions (Lack of Them)

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1. The safety valve for the toxic chemical gas was not working
2. 6 crucial safety systems were not functioning.
3. The staff of 12 was cut to 6 to save costs.

# Disaster Management


Self response was quite weak, due to the lack of information, resources, the unexpectedness of the situation.

Doctors didn't know how to treat the patients.


Therefore, autopsy studies were held to understand the effects of the gas.



The quality of health services was quite poor. 4 hospitals in the area were inadequate in terms of resources to cover the scope.



Within two days, only a quarter of the population of the affected area was evacuated, people were transferred to camps







## NGOs Involved:

Generally, NGOs were involved after the disaster, mainly being locals.

13 local NGOs were involved in various purposes, from awareness to legal settlements etc.

International NGOs were involved in spreading the awareness globally.



## NGOs Involved:

- The Other Media
- Delhi Science Forum
- The Bhopal Group for Information and Action (BGIA)
- The Sambhavna Trust

Many of these NGOs have contacts with WHO and other organizations within the United Nations.



## — Specific Actions

1. To mobilize the medical services
2. Relief efforts initiated by the government
3. The Environment Protection Act was passed (1986)
4. The cleanup of the site was neglected



## What was Wrong?

- Lack of information coming from the UCC
- Lack of resources and inadequate response
- False reassurances
- Failure of safety controls
- Regulatory failures
- Corporate negligence
- Wrong placement of pesticide manufacturing plant
- Lack of long term support
- Not providing sufficient shelter area





## What was Right?

- Local Shareholder Requirement
- Legal Settlement and Compensation
- Ongoing activist movements to create awareness.
- Environment Act and policies were passed after the accident.





## Lessons Learned

1. Industrial **safety standards** and safety planning to prevent similar accidents should be reinforced.
2. Placing industrial facilities close to **densely populated** areas should be avoided
3. **Environmental regulations** must be taken into consideration.
4. **Public health infrastructures** should be improved.

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