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## Deaths Due to Hazardous Chemical

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### Why in News

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According to latest estimates by the **World Health Organization (WHO)**, **deaths due to exposure to hazardous chemicals worldwide rose 29% in 2019** from what they were in 2016.

- **Two million people died** due to exposure to hazardous chemicals in **2019**, compared to **1.56 million in 2016**. Between **4,270 and 5,400 people died every day** due to unintentional exposure to chemicals.
- The estimates were released by WHO Director-General, during the Ministerial Dialogue held at the Berlin Forum on **Chemicals and Sustainability: Ambition and Action towards 2030**.

### Key Points

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- **Hazardous Chemical:**
  - A hazardous chemical is a chemical that has **properties with the potential to do harm** to human or animal health, the environment, or capable of damaging property.
  - They are frequently used in the **workplace as raw materials, solvents, cleaning agents, catalysts**, and for a number of other functions.
  - These are normally classified according to the risk they pose to health and property. Hazardous chemicals are categorized as follows:
    - **Flammable or explosive** (e.g. petroleum, TNT, plastic explosives)
    - **Irritating or corrosive to skin, lungs, and eyes** (e.g. acids, alkali, paints, fumes)
    - **Toxic chemicals** (e.g. carbon monoxide, hydrogen sulfide, cyanide, **heavy metals**)
  - These are present in **the air, in consumer products, at the workplace, in water, or in the soil**.
  - They **can cause several diseases** including mental, behavioural and neurological disorders, cataracts, or asthma.

- **Chemicals Causing Most Deaths:**

- **Lead Poisoning:**

- It was responsible for **nearly half of the deaths in 2019**.
- Lead exposure causes **cardiovascular diseases (CVD)**, **chronic kidney diseases** and **idiopathic intellectual disability**.
- Lead is **added to paints** for various reasons, including enhancing the colour, reducing corrosion and decreasing the drying time.
- Just 41% of countries including India, have legally binding controls on the production, import, sale and use of lead paints.
- In 2020, **UNICEF** too had raised concerns on the impact of lead pollution on the health of children.

Approximately 800 million globally have blood lead levels at or above the permissible quantity (5 micrograms per decilitre (µg/dL)).

- **Particulates and Carcinogens:**

**Chronic obstructive pulmonary disease (COPD)** from occupational exposure to **particulates (dust, fumes and gas)** and **cancers** from occupational exposure to **carcinogens (arsenic, asbestos and benzene)**, too accounted for a substantial share of the preventable deaths.

- **Disability-adjusted Life-years Lost**

- In 2019, **53 million disability-adjusted life-years were lost**. This is an increase by over 19% since 2016.
- There has been a 56% increase in disability-adjusted life-years lost due to exposure to lead since 2016.
- **Disability-Adjusted Life Years (DALYs)** is the sum of the number of years of life lost due to premature death and a weighted measure of the years lived with disability due to a disease or injury.

The use of DALYs to track disease burden is recommended by India's **National Health Policy of 2017**.

## Steps Taken

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There are many international chemical conventions restricting or even banning the production, use, and trade of certain hazardous chemicals.

- **Stockholm Convention on Persistent Organic Pollutants (POPs)**: To protect human health and the environment from the harmful effects of POPs (i.e. toxic chemicals).  
**India has ratified and acceded** to the convention.
- **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade**.  
**India ratified** the Convention in 2005.
- **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal**.  
**India** ratified the Convention.

- **The Chemical Weapons Convention (CWC)** is an arms control treaty prohibiting the development, production, acquisition, stockpiling, retention, transfer or use of chemical weapons by States Parties.  
**India is a signatory and party** to the Convention.
- **The Minamata Convention on Mercury** is a global treaty to protect human health and the environment from the adverse effects of mercury and its compounds.  
 More than 140 countries including India have ratified the Convention.
- **The United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances** provides comprehensive measures against drug trafficking, including provisions against money laundering and the diversion of precursor chemicals.  
**India** is one among the signatories.
- The **Chemicals Convention concerning Safety in the use of Chemicals at Work** was promulgated by the International Labor Organization (ILO) in 1990 and entered into force on 4<sup>th</sup> Nov 1993.
- **The Strategic Approach to International Chemicals Management (SAICM)** is a policy framework to promote chemical safety around the world.  
 The first Conference and the process to develop the strategic approach were co-convened by the **United Nations Environment Programme (UN Environment)** along with other stakeholders.

## Way Forward

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- **Need For Comprehensive Law:** There is a need for a comprehensive law in the countries to regulate chemical use, production and safety.
- In this context, India must take note as the country's **national chemical policy has been pending** since 2012.
- **Reducing or Removing Chemical Exposure:** Extreme cautions are to be taken when **handling, storing, transporting, and using hazardous chemicals.**  
 The user needs to wear protective clothing and personal protective equipment to protect themselves from hazardous chemicals.

**Source: DTE**