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# Image:

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This presentation deals with children exposed to chemicals contaminated in air, soil, dust, food, or water due to emissions or effluents from electrical and electronic waste recycling activities where health care providers are called to play a key role.



When selecting the slides to include in your presentation, please choose only those of relevance to the region and/or interests of your audience.

This training module includes:

- Definitions of e-waste, scale of issues, and geographic routes of exposure.
- Environmental origin of e-waste hazards, informal recycling processes leading to emissions, and overview of exposures in children.
- Mechanisms of action, target organs and systems affected from e-waste exposure.
- Case studies from Guiyu, China; Agbogbloshie, Ghana; and Montevideo, Uruguay.
- Management and prevention, including international initiatives, regulatory measures, and local actions at community level and medical domain).





There is no standard definition of e-waste. The most widely accepted definition of e-waste is per the European Commission: "waste from electrical and electronic equipment (WEEE) and it includes all components of electronic equipment, any subassemblies and consumables which are part of the product at the time it is discarded".

The Solving the E-waste Problem (StEP) initiative defines e-waste as "electrical and electronic equipment (EEE) and its parts that have been discarded by its owner as waste without the intent of re-use".

End of Life Equipment is defined as "individual equipment that is no longer suitable for use, and which is intended for dismantling and recovery of spare parts or is destined for material recovery and recycling or final disposal. It also includes off-specification or new equipment which has been sent for material recovery and recycling, or final disposal".

# **References:**

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• United Nations University/Step Initiative (2014). Solving the e-waste problem (Step) white paper: one global definition of e-waste. Bonn: United Nations University/Step Initiative. (<u>http://www.step-initiative.org/files/\_documents/whitepapers/StEP\_WP\_One%20Global%20Definition%20of%20E-waste\_20140603\_amended.pdf</u>, accessed 23 October 2018).

• Secretariat of the Basel Convention, UNEP (2014). Basel convention on the control of transboundary movements of hazardous wastes and their disposal; protocol on liability and compensation for damage resulting from transboundary movements of hazardous wastes and their disposal: texts and annexes. Geneva: United Nations Environment Programme, Secretariat of the Basel Convention.

(http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx, accessed 23 October 2018).

#### Image:

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Each year millions of electric and electronic devices are discarded as consumers buy new products. The discarded devices are considered electronic waste (e-waste) becoming an environmental and human threat.

The amount of e-waste generated in 2016 was estimated to be 44.7 Mt (million metric tonnes). This is equivalent to 6.1 kg of e-waste per person each year. Furthermore, the amount of e-waste is expected to increase to 52.2 Mt by 2021. Of note, secondary products and waste may be invisible to production statistics.

The United Nations University estimated that in 2016, up to €55 billion in resources could have been retrieved from e-waste if all materials were properly recycled. Thus, it is a valuable commodity and can be the means for individuals' and even communities' livelihoods.

The e-waste trade is complex and international organizations are working on how best to define trade conditions and the difference between donations of usable equipment and export of waste electronics.Despite international regulations targeted to control the transport of e-waste to developing countries, transboundary movements are still unknown. Only 20% of e-waste is documented as being properly collected and recycled. Most of the remaining 80% is likely dumped, traded or recycled under inferior conditions. E-waste transport is a complex task because in some cases electronic equipment are traded in the form of donations to needy communities.

# **References:**

- Lundgren K (2012). The global impact of e-waste: addressing the challenge. Geneva: International Labour Organization. (<u>http://www.ilo.org/sector/Resources/publications/WCMS\_196105/lang--en/index.htm</u>, accessed 23 October 2018).
- Baldé CP, Forti V, Gray V, Kuehr R, Stegmann P (2017). The global e-waste monitor 2017. Bonn, Geneva, Vienna: United Nations University, International Telecommunication Union, International Solid Waste Association. (<u>http://ewastemonitor.info/</u>, accessed 23 October 2018).



The United States of America, countries in Western Europe, China, Japan, and Australia are the majore-waste producers. In the last 10 years e-waste has been increasing in Eastern Europe and Latin America.

Primitive recycling of e-waste has been reported to occur in Asia (China, India, Vietnam) and Africa (Ghana, Nigeria). In other countries (Brazil, Colombia, Kenya, Mexico, Morocco, Peru, Senegal, South Africa, Uganda), there exist small-scale, informal e-waste recycling operations. Recycling activities in developing countries include recovering gold, silver, copper, zinc, iron, tin, and other metals. In Latin American countries, several families live for decades in landfills. Evidence suggests that e-waste recycling and other informal activities represent the largest source of family financial support for economically disadvantaged families.

#### **References:**

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