



Lead Poisoning: Culturally Sensitive Communication

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What Is Lead?

- Lead is a naturally occurring toxic metal found in the Earth's crust



Lead Properties

- Lead is a very soft, dense, ductile metal
- Relatively easy to mine and work with
- Cannot be easily destroyed
- Other properties: kills mold and mildew, blocks Radiation, blocks Sound and drying agent

Where and How was it Used?

- Fossil fuels
- Mining
- Manufacturing
- Paints
- Batteries
- Ammunition
- Metal products (solder and pipes)
- Devices used to shield X-rays

Lead from gasoline, paints and ceramic products, and pipe solder has been dramatically reduced in recent years

What is the Problem?



- Lead Poisoning!
- There is no known safe blood lead concentration
- Young children particularly vulnerable (absorb 4-5 times as much ingested lead as adults)
- As lead exposure increases, the range and severity of symptoms and effects also increases.



- 4 million households have children living in them that are being exposed to high levels of lead
- Approximately half a million U.S. children ages 1-5 have a blood lead level higher than $5 \mu\text{g}/\text{dL}$

Health Problems?

- Low levels → May result in decreased intelligence, behavioral difficulties and learning problems
- High Levels → Severe tummy ache, mental retardation, developmental issues and multiple organ problems

Sources of Lead

Sources in the house??

- Deteriorating lead-based paint; lead dust
- Water pipes
- Some stoneware and vinyl products.
- Lead can also leach into the soil around your home.
- Unusual sources

Unusual Sources

- Traditional items – sindoor
- Make up products – kajal/surma
- Food items and accessories – spices, candies and food additives
- Special pots, pans and utensils
- Folk remedies and medications
- Cosmetic items
- Ornaments/jewelries



OUR Workplace Introduction:

Rajanwali, Subsidiary Health
Center, Abohar
Punjab, India

Background

- “Rajanwaali” – rural north India (border of Punjab and Rajasthan)
- Poor community
- Strong culture and religious norms
- Income less than \$15 per month
- Farmers, shepherds, potters

Clinic Details

- Upgraded subsidiary health center
- Primary healthcare facility
- Covered 3-4 villages (Approx. 10,000 population)
- CHC: Covered 20 villages (approximately 80,000 population)
- Services offered:
 - Immunizations
 - Well baby clinic
 - Tb clinic
 - Other primary healthcare services

Clinic Staff:

- 2 Doctors
- 1 Pharmacist
- 1 Nurse
- 2 Midwives
- 1 Accountant
- 1 Aide

ਮੰਬ-ਮੈਂਟਰ

ਪਲਾਂਟ ਐਕਟੀਵਿਟੀ
ਫਰਵਰੀ 19
ਸੋਲਿਸਟੀ ਰਿਜ਼ਰਵ
ਫਰਵਰੀ



ਦਿਵਸ ਨਿਰਧਾਰਤ ਸਾਰੀ ਸ਼ਾਮਲ - ਸਿੱਖਾਂ ਨੂੰ ਯੋਗਦਾਨ ਪਾਉਣ ਦੀ ਸੰਭਾਵਨਾ, ਪੰਜਾਬ

ਸੇਵਾ ਸੰਗਠਨ

ਲੀ

ਸ਼ਹੀਦੀ ਸਮਾਜ ਸੇਵਾ ਕੇਂਦਰ ਦਾ ਨਿਰਮਾਣ ਵਿੱਚ - 100 ਕੁਰਸੀਆਂ
ਸਮੇਤ ਸਾਰੇ ਨਿਰਮਾਣ ਕੰਮ - 100 ਕੁਰਸੀਆਂ
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ਸੱਬ-ਸੇਂਟਰ ਐੱਸ.ਐੱਚ.ਸੀ. ਰਾਜਾਂਵਾਲੀ



Demographics

- 83% Hindus (with various subcastes)
- 12% Sikhs
- 3% Muslims
- 1% Christians
- Population of women in the reproductive age group 40%
- Children (newborns to 18 years) 20%

Culture

- Very different and strict
- Males and females never sat together
- Females wore veils over their head and face
- Head of the family: elders (responsible for major decisions)
- Females remained at home and men went out to work



Cases Encountered

■ Infectious diseases

- Tb, Cholera, Typhoid, Measles, Chickenpox, Diarrhea, Malaria

■ Lead poisoning

■ Dental problems

■ Deficiency diseases

Difficulties Faced

- Testing
- Cost
- Beliefs and culture
- Lack of personnel

Details of Unusual Sources

Sindoor/Vermilion



Sindoor/Vermilion

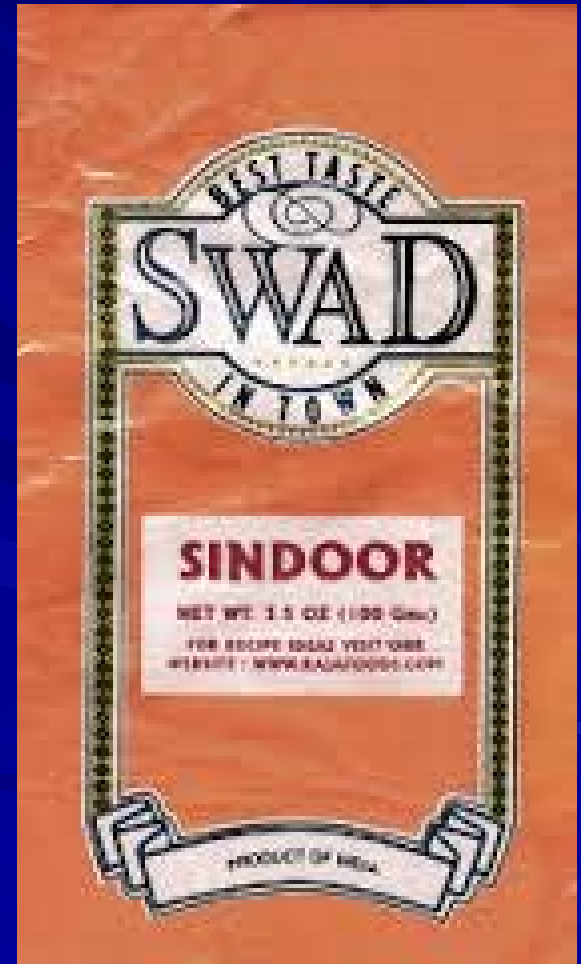
- Bright orange/red colored powder
- Religious significance & importance
- Common in Hindus

How can it cause a problem?

- Can get onto the hands → ingest the lead through hand-to-mouth contact
- Some lead may also be absorbed through the scalp

Few Contaminated Product(s)

- Swad Sindoor imported by Raja Foods, *Indian Product*



If you are using Sindoor...

- Not all products labeled sindoor contain lead
- It is difficult to tell the difference between safe and dangerous brands
- Always wash hands after handling
- Keep it away from food
 - Never mix it in the food items
- Keep it away from children

Kajal, Surma, Kohls, Tiro and Other Cosmetics

- Black or grey colored
- Religious significance & importance
- Common in Hindus, Sikhs and Muslims



Kajal, Surma, Kohls, Tiro

How can Kohls cause a problem?

- Can get onto the hands → ingest the lead through hand-to-mouth contact
- Some lead may also be absorbed through the eyes

Few Contaminated Products

- Hashmi Kajal, Surma and Kohls (4% to 47%) *Pakistani Product*
- Some lipsticks are also found to have lead



Using Kohls, Kajal, Surma, Tiro?

- Use alternative brands
- Keep it away from children
- Never inside the eye

Spices

- Mostly in loose spices
- Commonly Turmeric



How can Spices cause a Problem?

- Lead gets mixed into the spices while grinding
- While packaging
- Rarely the soil in which it is grown is rich in lead

- “Spices become contaminated with lead when they are combined with lead oxide, which is an orange or red powder that looks similar to many spices. Vendors are paid by the weight of their products, so adding lead powder to their spices makes them heavier and earns the vendor more money.”

<http://azdhs.gov/documents/preparedness/epidemiology-disease-control/childhood-lead/lead-in-spices.pdf>

Few Contaminated Products





Using Spices

- Use some trusted brands
- Use your own personally grinded spices
- Be cautious
- Make sure the spices have their natural color-turmeric should be **YELLOW**

Food Additives

- Used as a coloring agent in various food items
- Many artificial food coloring contains lead, mercury, and arsenic
- For example: ozeena, a bright orange powder used by Iraqis to color rice and meat

How can Food Additives cause a Problem?

- Heavy metals are natural components of the many additives
- Through ingestion

http://www.fao.org/fileadmin/templates/agns/pdf/jecfa/2002-09-10_Explanatory_note_Heavy_Metals.pdf





Pots, Pans and Utensils

- Glazed ceramic dishes, bowls, pitchers, plates and other utensils
- Few items imported from China and Mexico were found contaminated



What could you tell the parents?

- Buy utensils from a reliable store
- Try not to use ancient pots and pans for children

Herbal/Ayurvedic/Desi Medication

- Is a traditional form of healing practiced throughout South East Asia
- For common ailments
- Preferred over allopathic medicines in case of chronic problems
- Some Ayurvedic tablets, powders and pills have been found to contain very high levels of lead

Few Contaminated Products



Few Contaminated Products

- Greta and Azarcon (also known as alarcon, coral, or rueda) are Hispanic traditional medicines for an upset stomach, constipation, diarrhea, and vomiting
- Greta and Azarcon are both fine orange powders with lead content as high as 90%



<https://www.cdc.gov/nceh/lead/tips/folkmedicine.htm>

Few Contaminated Products

- Ghasard, an Indian folk medicine. It is a brown powder used as a tonic.
- Ba-baw-san is a Chinese herbal remedy that contains lead. It is used to treat colic pain or to pacify young children.

Folk Remedies and Cosmetics Found to Have Lead

- <http://www.thesmartmama.com/getting-the-lead-out-folk-herbal-remedies/>
- <https://www1.nyc.gov/site/doh/health/health-topics/lead-poisoning-lead-remedies.page>

What could you tell the parents?

- Research about the products and its contents
- Try not to use for children

Ornaments / Jewelries

- Personal use
- Metallic jewelries
- Some have religious significance (taweez)
- Men, women and children

<https://www.cdc.gov/nceh/lead/tips/jewelry.htm>

Contaminated Items Found in India





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<http://photo>



Few Other Contaminated Items



<https://www.consumeraffairs.com/charm-bracelet-and-childrens-jewelry-recalls>

Few Contaminated Items



<http://www.cbsnews.com/news/costume-jewelry-found-to-have-high-levels-of-toxins-and-carcinogens-tests-show/>

What could you tell the parents?

- Try not to use jewelry toys for kids
- Keep the jewelry out of reach of children

Pesticides

- Common in farmers
- Also a source of lead poisoning in children
- According to a research study (2011):
70% samples contained high levels of lead





Candles / Batteries / Locally Made Liquor

- From candles: common in people who make candles
- From batteries: common in people who are mechanics or repair batteries
- From liquor: common in men

What did we do?

- Studied their culture
- Teamed-up with elderly and influential people
- Educated them about the problem
- Distributed brochures
- Had education sessions and video sessions
- Preached about personal benefits and benefits to the society
- Offered incentives and other alternatives

What you could do?

- Respect the belief and the cultural practices
- Get familiar with the culture
- Develop a strategy to approach the family
- Remove language barrier
- Build a relationship of trust
- Offer help: via education/alternatives

Some Take Away Points!!

Suggest patients to:

- Consider buying products/spices after thorough research
- To examine the spices for natural color
- Use alternative products for sindoor/kajal
- Provide good nutrition to children (calcium and iron)



Useful Resources

- <http://www.thesmartmama.com/getting-the-lead-out-folk-herbal-remedies/>
- <https://www.cdc.gov/nceh/lead/tips.htm>
- <http://www.leadcare2.com/News>
- <http://azdhs.gov/documents/preparedness/epidemiology-disease-control/childhood-lead/lead-in-spices.pdf>
- <https://www.consumeraffairs.com/charm-bracelet-and-childrens-jewelry-recalls>