REGIONAL PRIORITY GOAL IV

Protection from hazardous chemicals and physical and biological agents to reduce disease.

West-Transdanubian Regional Institute of National Public Health protects against UV radiation.

The Chapaevsk Medical Association investigates a hot-spot.

PHASE OUT LEADED GASOLINE

Manana Juruli from the Georgian Environmental and Biological Monitoring Association (GEBMA) describes the information campaign.

This project includes children's livelihood promotion in terms of improving health of children whose well-being depends on community capacity to take action on phasing out leaded gasoline.

Human exposure to lead is one of the most serious environmental problems facing the Georgian population. A major public health concern is its harmful impact on children.

At present Georgia is undergoing serious domestic economic and social transformations, where the lack of financing is considered a major restraint on an accelerated lead phase-out. For this reason the phase-out of lead from gasoline is a fairly complicated task in Georgia.

The present project is undertaken with a view to inform a wide range of the public on the danger of lead, where it can be found in community, and measures that can be taken to reduce the exposure and to protect the children against its harmful impact.

Goals

- To prevent or minimize harmful impacts of leaded gasoline on inhabitants, especially children living in dense traffic areas of urban areas of Georgia
- To collect and analyse existing data on blood lead levels and environmental contamination
- To conduct an information campaign aimed at the broad public on the applicability of unleaded gasoline and on the environmental and health benefits of using unleaded gasoline.

Activities

- Collect and analyse existing information on air and blood lead level in urban settlements of Georgia
- organize a national seminar on "**Lead Poisoning Prevention: Communication and Improvement for National Regional and Local Action**" for major groups representatives and experts in Tbilisi
- hold information meetings on "**Phase Out Leaded Gasoline**" in Batumi, Kutaisi and Poti
- publish the informational booklet on "**Lead Hazards and Help Build Support for Prevention of Lead Poisoning**"
- organize trainings for agency personnel to ensure that they will receive proper knowledge for carrying out activities on environmental sampling and monitoring, blood lead screening and analysis and lead hazard control (Tbilisi, Batumi, Kutaisi, Poti)
- distribute the report of the national seminar, informational booklets and methodical documents to a wide range of interested parties and public
- prepare radio broadcasts and TV program
- write articles in newspapers.

Results

It was established that lead concentration in air of traffic areas of Tbilisi is generally above the hygienic standards and that the air lead levels usually reflect traffic density. It was also shown that blood lead levels often exceed "a level of concern". All these data are evidence that a significant number of people living in traffic district of Tbilisi, particularly children, are exposed to lead from gasoline at a hazardous level.

A great number of people from the civil society has learned about dangers associated with the use of leaded gasoline and shares critical information.

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SKIN CANCER PREVENTION

Katalin Fehér from the West-Transdanubian Regional Institute of National Public Health and Medical Officers' Service about a prevention program among school-age children.

The project helps to raise public awareness on ultra-violet exposure and skin cancer risk. We believe that prevention in childhood establishes the sun-safe behaviour in adulthood, so decreasing the skin cancer risk.

The incidence and mortality of skin cancers (such as malign melanoma) is increasing worldwide, affecting younger and younger age groups. One of the main risk factor of skin cancer is ultra-violet overexposure originating from sun radiation. The most vulnerable are people with sensitive skin complexion. Sunburn experience during childhood doubles the risk of developing skin cancers later in life. Therefore it is very important to protect children against ultra-violet exposure. Childhood is also a good time to form the life-long sun-safe behaviour. The project was coordinated by the Regina Elena Institute (Rome, Italy); we joined the program in 2004.

Goals

The project focused on the primary prevention of malign melanoma, the target population is the 6-10 years old children. The aim was to determine the most vulnerable population and to protect them against ultra-violet exposure.

Activities

On the one hand questionnaires were distributed (in 20 primary schools of 3 cities in our region) to assess the individual skin cancer risk of children. It included questions on the skin complexion, parents' skin complexion, pigment traits, skin sensitivity, sun exposure and sun-protection behaviour. The evaluation was processed with a software by Regina Elena Institute. The risk was classified in high, medium and low risk group considering the skin sensitivity to sun radiation. On the other hand before the summer holiday we sent a letter with the individual risk assessment result and recommendations for sun protection to the parents.

Results

In the year 2004, 2 363 children participated in this program in our region. According to the evaluation 30.8% of children belonged to the high, 61.2% to the medium and only 8% to the low risk group. 59.3% of the participants have reported previous sunburns. According to the evaluation spending holidays at the waterside, beach, etc. is very popular among children, where health damaging effects of solar irradiation are enhanced. It is beneficial for health that the majority of children already used some kind of sun protection (mainly sun cream and sunglasses). ◆

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ORGANOCHLORINES IN A RUSSIAN HOTSPOT

Sergeyev Oleg from the Chapaevsk Medical Association reports on potential risks from exposure to environmentally persistent organochlorines in a Russian hotspot and activities for the improvement of children's health.

The project led to a reduction of environmentally-related children's health risks and by that improved the children's health in Chapaevsk, Russia. The study incorporates important health based components that engage members of the community, from the government to the local citizens. The project results are relevant to children's health in Europe.

Chapaevsk is a town of approximately 72,000 residents, located in central Russia near Samara on the bank of the Chapaevsk river, a tributary to the Volga. Environmental pollution and public health in the town has been studied since 1994, when the local administration put forward a corresponding initiative. Chemical plants are the principal source of emissions of dioxins, lindane and hexachlorobenzene (HCB) in this town. One plant produced chlorinated organic pesticides between 1967 and 1987, and later began production of liquid chlorine, vinyl chloride etc. In 1994, concentrations of dioxins in ambient air, measured within 3-4 km from the plant boundaries, exceeded limit values twofold every 7-10 days per year. Concentrations of PCDD/PCDFs (I-TEQ) in the soil of residential area near the plant were 141 ng/kg, gradually decreasing to 37 ng/kg at distances of 2-7 km, and down to 4 ng/kg at a distance of 7-10 km. Besides dioxins, local soils were contaminated by chlorinated organic pesticides. The State decided to give to Chapaevsk the special status of "extremely polluted zone" (eleven Russian towns, and Chernobyl territory, have obtained this status).

The general population lives near the plant on contaminated area. The residents grow vegetables, raise cattle and poultry on polluted lands and fish in the local polluted river as well.

Dioxins and PCBs are persistent organopollutants (POPs) and well known endocrine disruptors that can adversely affect the development of the reproductive tract and may impact sexual maturation. They may also play a role in some birth defects, hyperprolactinemia, hypothyroidism, obesity, delayed sexual maturation and growth.

The town of Chapaevsk is characterized by a difficult social and economic situation. A special Environmental and Health Rehabilitation Action Plan was developed by Chapaevsk and Samara (regional) government. One of the results was the construction of the new Children Hospital because the old Chapaevsk Children's Polyclinic was located on the first floor of old apartment houses. Children's Hospital and laboratories are located far from each other.

Project goals

- To determine the relation between exposure to POPs and male sexual development and growth
- To identify and treat boys with previously unrecognised pathologies, some of which may be related to POPs (dioxin/furans, PCBs and pesticides)
- To decrease children's exposure to dioxins and pesticides through increased awareness and identification of sources of exposure
- To provide annual information for the Regional Samara Government for continuation of financing and completion of building of modern Children's Hospital with polyclinic (up to 200 visits per shift) and hospital of 60 beds.

Activities and Results

In the framework of a research project 516 boys were examined and detailed family information was collected. 505 boys gave blood samples for determination of exposure to POPs and reproductive hormones. Boys with reproductive tract abnormalities who needed surgery were referred to Samara Children Hospital. Boys who need conservative treatment receive this treatment in Chapaevsk.

Modern and expensive medical equipment has been purchased using National Institute of Health funds. These are now also routinely used in Chapaevsk hospital (medical freezers, skin fold calipers, body fat measurement devices, microscopes and computers).

Based on the finding of associations of dioxin serum levels and dietary intake of local food, dietary recommendations to limit intake of PCDDs and PCBs were developed for each child and its mother. These recommendations also were published in local newspapers. 4 meetings of an Eco-club were organised to discuss study findings and actions for reduction of environmentally-related health risks. Afterwards these meeting were covered in the newspaper and most of the citizens were able to read this. Results of all Chapaevsk studies over a period of 13 years were presented at a Public Hearing in Chapaevsk. ◆

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