



ISLAMIC REPUBLIC OF IRAN



Shahid Beheshti  
University of Medical Sciences

Research Affairs  
Disease Registry Unit

## **In the Name of GOD**

### **Iranian Registry of pediatric lead poisoning (IRPLP)**

Lead is a heavy metal that circulates through the bloodstream and is excreted in the urine and feces and has a half-life of about 30 days (1). The remaining lead binds to the red blood cells and spreads to the soft tissues of the body and gradually accumulates in the bone tissue (2). Serum lead level is according to criteria of Center for Disease Control 3.2 micg/dl (3). Lead poisoning can have a variety of nonspecific symptoms and may vary from person to person as well as depending on the level of lead and the type of acute, sub-acute or chronic poisoning. Symptoms such as abdominal pain mimicking acute abdominal pain, constipation, irritability, concentration disorder, and anemia are the results of lead poisoning (4). Lead poisoning in children is a preventable environmental problem and it can prevent psychological and clinical complications in a person. on the other hand, lead poisoning has many effects on the health of the child, including a decrease in thyroid stimulating hormone and an increase in thyroxine (5).Decreasing blood lead levels among children continues to be a major public health success. In some countries of the world, lead level screening of children is being conducted to identify and eliminate the primary sources of lead poisoning in the home.In addition, plans to reduce lead levels in water, fuel, and environmental lead sources in homes can be formulated by identifying individuals and areas at risk of poisoning. Evaluating the clinical course of lead poisoning is only possible through the establishment of a registry system.This system has led to the formation of a health-education network in which health professionals, researchers, and authorities are linked to each other, leading to improved blood lead levels.

**Registry Objectives (what is it you are specifically looking at, trying to reach?)**

The main goals of registry system include: determining the abundance of lead poisoning among children, determining the causes of lead poisoning in children and utilizing its achievements in clinical practice, determining the clinical course and complications of lead poisoning in children, determining and evaluating health care services in this area and increasing the quality of care, developing a health care system to prevent and control the lead poisoning and its complications, collecting and recording data for clinical trials in this field.

**Registry Design (participants, data collection, statistical analysis plan, etc.)**

Patients with developmental dysfunction, hearing impairment, hyperactivity and focus disorder, central nervous system symptoms (including seizures, excessive fatigue, encephalopathy of unknown cause, cerebral edema, increased intracranial pressure, headache, papillary edema, mood changes), and Gastrointestinal symptoms (including anorexia, abdominal pain, constipation, and vomiting) and, more rarely, symptoms of renal tubular dysfunction and hemolysis with unknown cause having a blood lead level greater than or equal to 5 micrograms per deciliter will be enrolled in the registry system.

The information about the entered persons is collected according to the software questionnaire including anthropometric measurements, demographic information, laboratory data, interventions performed, consequences and complications. All this information is provided by the relevant authorities in each center. At the Information Coordination Center, the person or persons informed and expert to monitor the information entered on a regular basis and, if there is any confusion, contact the relevant center and the registrant or speak to the patient if necessary. In this system the detection method will be inactive. After placing Lead poisoning on the list of reportable diseases, medical practitioners, nurses, and health care providers across the country after defining diagnostic procedures and ensuring the type of disease complete the standard pre-designated form provided to all units for this purpose. In order to evaluate the quality of data collection at specified intervals (three months), several records are randomly selected and the accuracy of their data entry is examined by referring to the origin of the file or patient question.

The registration system will be active for 10 years, during which time the information of eligible people will be entered. All steps in setting up and running the system will be carried out under the supervision of the Strategic Committee. The task of the Strategic Committee is to determine the strategies needed to achieve the predetermined goals. The Data Coordination

Center, which is overseen by the Strategic Committee, is responsible for controlling the quality of information, how it is accessed, and how the database outputs for analysis. In addition, individuals are involved in the program to collect information or other information that all individuals are aware of in committee decisions through the Data Coordination Center.

### **Timeline for your Registry project (project deadlines set by you and your mentor)**

	1	2	3	4	5	6	7	8	9	10
Proposal submission	*	*	*							
Designing Registration system				*	*					
Coordination with other focal point for registration						*	*	*	*	*
Registry duration set 10 years										
Each 10 years data will be evaluated and results use in researchers and articles to improve patient's conditions.										

### **Who will provide support and feedback and how often will this occur?**

ShahidBeheshti University of medical science provides financial support for the registry of Iranian registry of **PLP**databases system clinical outcomes research.

Also, some experts plan to collect information or other items in the program, all of which are in the committee's decisions through the coordinating center strategic committee formation, preparing the internet system for patient registration. To inform all the pediatricians, gastrointestinal pediatricians, neonatologists, surgeons. Also, other experts will be invited to participate.

1. Faranoush M, Malek M, Ghorbani R, Rahbar M, Safaei Z. Study of the blood lead levels and related factors in the 6-11 years old children in Semnan. koomesh. 2003;4(3):79-86.
2. Büsselberg D. Metal compounds in our environment and their implications on human health. 2016.
3. McClure LF, Niles JK, Kaufman HW. Blood lead levels in young children: US, 2009-2015. The Journal of pediatrics. 2016;175:173-81.
4. Zaman T, Zadeh H. Lead poisoning in an highly polluted district of Tehran in high school children. Iranian Journal of Pediatrics. 1999;9(4):207-12.

5. Greig J, Thurtle N, Cooney L, Ariti C, Ahmed AO, Ashagre T, et al. Association of blood lead level with neurological features in 972 children affected by an acute severe lead poisoning outbreak in Zamfara State, northern Nigeria. *PLoS One*. 2014;9(4):e93716.