

BRITISH PAEDIATRIC SURVEILLANCE UNIT

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Surveillance of Raised Blood Lead Levels in Children

Background Public health interventions have succeeded in removing most sources of lead from the environment. However, a small proportion of children continue to be exposed to harmful levels of lead, usually in the home. Exposure to lead in children is associated with a range of adverse health effects, from sub-clinical neurodevelopmental impairment to encephalitis.

There are no reliable data on the incidence or prevalence of clinically significant lead toxicity or the prevalence of elevated blood lead concentrations in children in the UK. Currently, the UK has no formal monitoring of childhood blood lead concentrations within laboratory or clinical systems and the public health response to such cases is likely to be sub-optimal. A recent case series indicates that significant obstacles are often encountered in the effective and timely management of cases.

The aim of this study is to provide an estimate of the incidence of elevated blood lead concentrations in children. The study will provide important information on the management of cases, both clinically and in terms of the public health response.

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| Coverage | United Kingdom and Republic of Ireland |
| Duration | June 2010 – June 2012 inclusive (with follow-up until July 2013) |
| Research Questions | <ul style="list-style-type: none"> • Estimate the incidence of elevated lead concentrations in children. • Describe the clinical presentation of children with elevated blood lead concentrations. • Identify the most common sources of exposure in children. • Develop guidance for clinicians and public health practitioners. |
| Case definition | Any child, <16 years of age, with a blood lead concentration reported by the laboratory as $\geq 10\mu\text{g/dL}$ (or $0.48\mu\text{mol/L}$), with or without any of the accepted clinical signs and symptoms of lead toxicity. |
| Reporting instructions | Please report any <u>new</u> cases you have seen in the last month which meet the surveillance definition. |
| Methods | <p>Clinicians reporting a case through the BPSU orange card system will receive a Case Notification Form and 12-month follow-up questionnaire asking for details of the clinical management of the patient, identification of source(s) and other household members who may have been exposed.</p> <p>Parallel reporting from the Supra-Regional Assay Service laboratories will be used to identify cases that may not be referred to a reporting clinician, and is being explored with the National Poisons Information Service.</p> |
| Ethics approval | This study has been approved by the Riverside REC (Ref: 10/H0706/10) and has Section 251 NIGB permission under HPA reference (PIAG 03-(c)/2001). |
| Funding | Health Protection Agency |
| References | <ol style="list-style-type: none"> 1. Brailsford S, Kamanyire R, Ruggles R. Lead poisoning cases associated with environmental sources. Chemical Hazards and Poisons Report. January 2008 Issue 11 http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1205394722380 2. G Lewendon, S Kinra, R Nelder, T Cronin. Should children with developmental and behavioural problems be routinely screened for lead? Arch. Dis. Child 2001;85:286-288 (October) |