



## National Patient Safety Agency

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Dear

**Freedom of Information Act request:  
Accidental Intravenous Paracetamol overdose in children**

I am writing in response to your email request for information, under the FOI Act, dated 22 February 2010. Thank you for your enquiry.

*I would like any information that you have regarding incidents where children have received an accidental overdose of intravenous paracetamol. If possible, the circumstances surrounding the overdose, for example the dose given and any need for further treatment/referral to a liver transplant unit etc.*

In order to answer your query, some understanding of the NPSA and the nature of the data it holds may be useful.

### Reporting and Learning System

The NPSA is a Special Health Authority working to co-ordinate the efforts of all those involved in healthcare, and more importantly to learn from, patient safety incidents occurring in the NHS. The tool with which we collect information on patient safety incidents is the Reporting and Learning System (RLS).

The RLS was developed to promote comprehensive national learning about patient safety incidents. The RLS receives reports about patient safety incidents from NHS organisations, staff and contractor professions, in confidence, on a voluntary basis. Due to its voluntary nature, data from the RLS should not be taken as representative of all incidents occurring in the NHS in England or Wales.

A key aim of the NPSA is to promote a more open culture of reporting amongst NHS workers, and a core component of this strategy is to provide staff with a method of reporting errors without fear of undue repercussions via a confidential and anonymised reporting system.

It is important to note that the NPSA does not investigate individual incidents or individuals; this is largely the responsibility of local trusts and organisations.

### Reporting to the RLS

There is no time limit for incidents to be reported to the RLS – this means that staff may report incidents that took place months or years prior (the median difference being approximately 60

days, or 2 months). For this reason, the number of incidents occurring over a given period may vary depending on the date the information was extracted.

### **Limitations of the data provided**

It is also important to note that patient safety incidents (PSI's) can be complex events that involve multiple factors. As incidents submitted to the RLS can only be assigned a single main incident category there is as chance that some incidents may have been missed in this analysis.

Additionally, there is no mandatory requirement for inclusion of contributing factors such as transcribing resulting in this field very poorly completed in RLS reports. A free text search (scanning the incident description and medication name entries for key terms) was used to identify transcribing incidents; while we make every effort to accommodate variations of terms and spelling, we cannot guarantee 100% accuracy in the returned results as this would require a manual review of every incident on the system.

It is important to note that there is a time-lag in incidents being reported to the NPSA. In particular not all incidents which occurred in 2009 will have been reported to the NRLS by the time this analysis was undertaken.

This, combined with the voluntary nature of the RLS, means that the information provided in this response should not be considered as representative of trends occurring in the NHS in England and Wales. Due to this, we advise that the data provided should be interpreted with some caution. Its main use is to identify themes of incidents where error has been reported and system solutions might be developed.

### **Analysis period**

The RLS has been interrogated for all incidents reported as medication errors related to Unintentional Paracetamol Overdose in children, and were reported to us within the period November 2004 to 31 December 2009, inclusive.

The search produced a total of 439 incidents. A sample size of 250 incidents was manually reviewed of which 117 appeared directly relevant to your enquiry.

## **Aggregate Quantitative analysis and aggregate data**

**Table 1 Incident frequencies by Degree of harm**

<b>Degree of harm</b>	<b>Total</b>	<b>Percentage</b>
No Harm	93	79
Low	14	12
Moderate	9	8
Severe	1	1
<b>Total</b>	<b>117</b>	<b>100</b>

**Table 2 Incident frequencies per location**

Location (lvl2)	Total	Percentage
Inpatient areas	109	93
Accident (A) / minor injury unit / medical assessment unit	5	4
Outpatient department	2	2
Missing	1	1
<b>Total</b>	<b>117</b>	<b>100</b>

**Table 3 Incident frequencies per location**

Location (lvl3)	Total	Percentage
Ward	64	55
Operating theatre	29	25
Intensive care unit / high dependency unit	13	11
Recovery room	1	1
Other	1	1
Missing	9	8
<b>Total</b>	<b>117</b>	<b>100</b>

**Table 4 Age Banding by Percentages Reported**

Patient Age Range	Total	Percentage
1 month to 1 year	15	13
2 to 4 years	14	12
5 to 11 years	39	33
12 to 17 years	33	28
18 to 25 years **	1	1
Missing	15	13
<b>Total</b>	<b>117</b>	<b>100</b>

\*\* Represents an 18 year old patient seen in a Paediatrics Speciality

**Table 5 Medication Error Category**

MD02	Frequency	Percent
Wrong / unclear dose or strength	54	46
Wrong frequency	25	21
Wrong quantity	20	17
Wrong route	4	3
Contra-indication to the use of the medicine in relation to drugs or conditions	1	1
Mismatching between patient and medicine	1	1
Other	8	7
Missing	3	3

Unknown	1	1
<b>Total</b>	<b>117</b>	<b>100</b>

## **Qualitative analysis and main themes**

Common themes that occurred in unintentional Paracetamol overdose in children were identified through analysis and include:

**Table 6 Main Themes identified**

<b>THEME</b>	<b>Frequency</b>	<b>Percentage</b>
1 Prescribing errors	36	31%
2 Administration or infusion rate errors (exclusive of prescribing errors)	29	25%
3 Incidents where patient received both iv and oral dose	25	21%
4 Wrong frequency of paracetamol administration.	15	13%
5 Incidents where an oral dose was administered iv	12	10%
<b>Total</b>	<b>117</b>	<b>100</b>

- 1 The majority of incidents reported were incidents that occurred due to the wrong dose being prescribed and subsequently administered based on the guidelines of max dose per weight (31%).
- 2 IV Paracetamol overdose given to patients due to an administration errors or wrong infusion rate errors (25%).
- 3 IV Paracetamol administered to patients after already receiving an oral dose or vice versa (21%)
- 4 Wrong frequency of IV Paracetamol administration resulting in overdose mainly due to duplication of dosing
- 5 Incidents where a correct oral dose was calculated and prescribed but administered as IV dose without recalculation.

Please note that all reviewed incidents occurred within an Acute / general hospital care setting.

I hope that this information is helpful to you. If you need any further information, please do not hesitate to contact [datarequestteam@npsa.nhs.uk](mailto:datarequestteam@npsa.nhs.uk) using the reference number **2398**.

If you are unhappy about the way in which your request has been handled, the NPSA has an internal complaints procedure through which you can raise any concerns. Further details of this procedure may be obtained by contacting the Complaints Manager. If you are dissatisfied with the outcome of the complaints procedure, you can apply to the Information Commission, who will consider whether we as a public authority have complied with its obligations under the Act, and can require NPSA to remedy any problems. You can find out more about how to do this, and about the Act in general, on their website [www.ico.gov.uk](http://www.ico.gov.uk). Complaints should be sent to:

FOI Complaints Resolution -Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire SK9 5AF.

Yours sincerely,



Sandrah Horsfall  
Chief Executive (Acting)

## Appendix

### NPSA terms and definitions for grading patient safety incidents

Harm	NPSA definition
No harm	<i>Impact prevented:</i> any patient safety incident that had the potential to cause harm but was prevented, resulting in no harm to the person(s) receiving NHS-funded care. <i>Impact not prevented:</i> any patient safety incident that ran to completion but no harm occurred to the person(s) receiving NHS-funded care.
Low harm	Any patient safety incident that required extra observation or minor treatment, and caused minimal harm to the person(s) receiving NHS-funded care.
Moderate harm	Any patient safety incident that resulted in a moderate increase in treatment, and which caused significant but not permanent harm to the person(s) receiving NHS-funded care.
Severe harm	Any patient safety incident that resulted in permanent harm to the person(s) receiving NHS-funded care.
Death	Any patient safety incident that directly resulted in the death of the person(s) receiving NHS-funded care.