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England

Protecting and improving the nation's health

PHE and NPIS COVID-19 Toxicovigilance and Chemical Surveillance Summary Report

1 January to 27 June (20/08/20)

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1.0 Main findings

A review of UK poisoning and chemical incident data (from England) between January and June 2020, when compared to the equivalent period in 2019, has found that there has been:

- an overall decrease in telephone enquiries between 2 March and 27 June to the National Poisons Information Service (NPIS) related to poisonings, from 12911 to 12280 total calls, which represents a 5% decrease
- a small but statistically significant increase in the proportion of enquiries to NPIS involving children under 6, from 26% of calls in 2019, to 29% of all calls in 2020. Total enquiry numbers regarding children under 6 have also increased by 5%, from 3387 to 3556 calls, which has only become apparent over the extended reporting period, as previous toxicovigilance reports reflected a decrease in total enquiries involving children. These increases may be due to children spending more time at home following school closures
- there is currently no evidence to suggest there has been an increase in enquiries in relation to intentional methanol or chloroquine exposures to prevent or treat COVID-19. There is limited evidence to suggest that there been an increase in enquiries for preventing or treating COVID-19 through intentional use of bleach, disinfectants and essential oils
- a small, statistically significant increase in enquiries related to dental patients, rising from 357 (25.5 average per week) to 551 (average 39.4 per week) calls about analgesic pharmaceuticals. This increase is possibly related to a reduction in dental services available due to lockdown measures. It should be noted that enquiry numbers were relatively low and only one enquiry in 2020 reported severe symptoms, all others were mild or asymptomatic at the time of enquiry. However, delayed symptoms are possible. The overall public health risk is likely to be low, but PHE have continued to monitor such enquiries following the decision to allow full dental services to reopen from 8 June. In the limited period (three weeks) since reopening of non-emergency dental practices, the number of dental analgesic enquiries appear to remain elevated compared to the equivalent period in 2019, at an average of 39 phone enquiries per week.
- a statistically significant increase in enquiries to online NPIS clinical information (TOXBASE) for hand sanitisers from 969 to 2403 enquiries. In addition, there has been a small statistically significant increase in telephone enquiries related to hand sanitisers in children under 6 over the study period, increasing from 52 (average 3.1 per week) in 2019 to 112 (average 6.6 per week) in 2020, with 112 of these calls being related to children under 6. Since lockdown measures started to be eased from 11 May, the hand sanitiser enquiries remain elevated compared to data from 2019 for both TOXBASE and telephone enquiry data. This may reflect increased use of, and potential exposure to, hand sanitisers during the COVID-19 pandemic. This increase could also reflect inappropriate storage of hand sanitisers. At the time of

enquiry, one case was recorded as having severe symptoms, however all other cases were minor or asymptomatic. Hence, based on the current evidence, the overall public health risk is considered to be low

- a small increase (not statistically significant) in telephone enquiries related to inhalation of cleaning products, rising from 110 in 2019 (average 6.5 per week) to 138 (average 8.1 per week) in 2020
- although the overall enquiry numbers are low, a high proportion of these enquiries involved the mixture of cleaning products, which can result in the release of toxic gases. At the time of enquiry, five cases recorded in 2020 were classed as having moderate symptoms, though all others were minor or asymptomatic
- a review of the severity of poisoning at the time of enquiry for hand sanitisers, dental analgesics, and inhalation of cleaning products has identified limited evidence of an increase in the severity of poisonings. However, patient outcome data is often not available (see Appendix 1) and symptoms may be delayed for some analgesics (eg paracetamol)
- PHE CRCE data indicates fewer chemical incidents were reported to CRCE in March, April, May and June of 2020 in comparison with previous years. However, a higher number of fires were reported between April and May of 2020, in comparison with previous years, but this may reflect the period of warmer weather experienced over that period. There has been no increase in the number of cases of intentional individual chemical exposures (ICE) reported to PHE in the second quarter of 2020 in comparison to previous years. This finding correlates with NPIS data, which indicates a decrease in the total and proportion of calls related to intentional exposure.

1.1 Limitations to data (see further Appendix 1):

- it is not possible for the data provided in this report to demonstrate a causal association between poisoning and the COVID-19 pandemic as there may be other unrelated factors influencing trends, such as climatic or seasonal differences. It should be noted that trends identified may correspond with increased media coverage of COVID-19, use of specific products, and public health interventions including lockdown and handwashing
- small changes in enquiry numbers or percentage of total enquiries should be interpreted with caution. Statistical tests have been undertaken where indicated to identify potential significant trends in data
- enquiries (especially TOXBASE® accesses) may be for educational reasons rather than directly related to a case. Enhanced media coverage may also lead to an increase in TOXBASE enquiries
- NPIS data are usually obtained at the time of initial presentation of the patient. Although follow-up of serious enquiries is attempted, information on patient outcome is often unavailable

2.0 Background

Toxicovigilance is the active process of identifying and assessing the toxic risks from exposure in a community or population to consumer products, pesticides, pharmaceuticals, environmental and industrial chemicals, controlled substances, and natural toxins. It involves the monitoring of data to identify potential and confirmed trends in poisoning exposures and the emergence of new risks associated with toxic substances, as well as to assess the effectiveness of preventive measures. Since the onset of the COVID-19 outbreak, a number of proposed novel treatments, including a range of chemical and pharmaceutical preparations, have been proposed. In addition, due to changes in behaviour, members of the public may be at increased risk of being exposed to other domestic chemicals, such as cleaning products. Public Health England (PHE) has undertaken an analysis of their chemical incident data and UK poisoning data provided by the National Poisons Information Service (NPIS) to evaluate whether there are any potential public health risks related to toxic substances as a result of the COVID-19 pandemic. This was also informed by anecdotal reports of poisoning / exposures from NPIS and PHE staff. Further, this analysis seeks to inform potential preventative and harm-reduction measures where necessary. This report builds on the previous two toxicovigilance reports and considers an extra month of data. This report has been prepared by the Centre for Radiation Chemicals and Environmental Hazards (CRCE) at Public Health England in conjunction with the NPIS. Please direct any enquiries regarding this report to the Environmental Public Health Cell EnvPhcell@phe.gov.uk.

3.0 National Poisons Information Service (NPIS) data

3.1 Interpretation of NPIS data

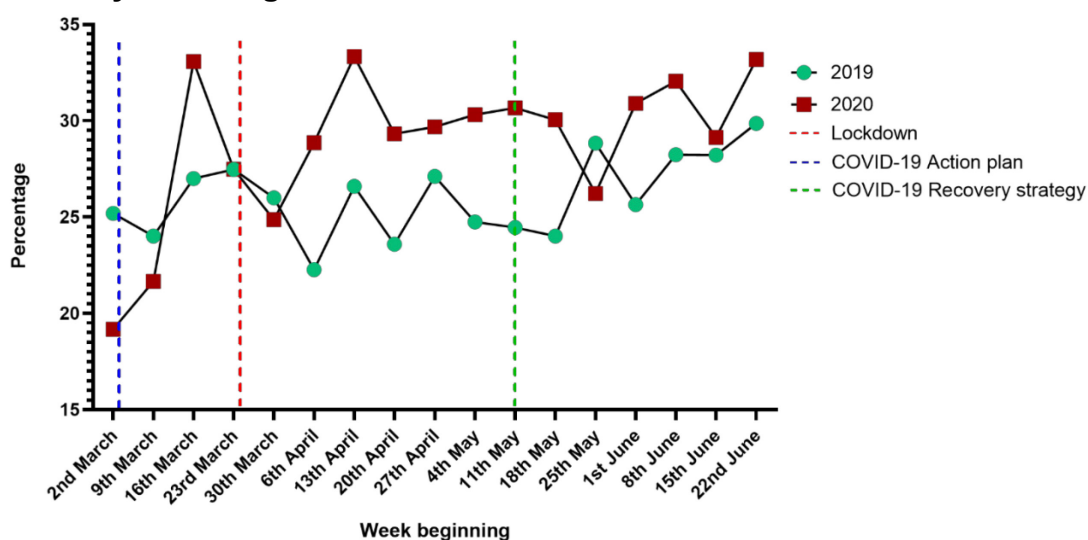
The majority of NPIS data presented in this section is from telephone enquiries recorded on the UK Poisons Information Database (UKPID). Data is also provided where indicated on the number of total enquiries and hand sanitiser-related enquiries made on the NPIS clinical management database, TOXBASE. TOXBASE is available to all health professionals in the UK and, in treating a suspected poisoning, is normally accessed in the first instance. Typically, the NPIS are then telephoned directly for more complex enquiries. Whilst NPIS data cannot reflect the actual incidence of poisonings in the UK, the collated information does provide a good indication of overall trends to identify toxicovigilance 'signals', particularly when the data is compared to that of previous years. Further detail on the interpretation of UKPID enquiry TOXBASE enquiry data can be found in Appendix 1.

3.2 Total enquiries to the National Poisons Information Service

A review of NPIS data between 2 March and 27 June 2020, compared to the corresponding period in 2019 (4 March to 29 June) was undertaken and shows:

- total telephone enquiry numbers were lower in 2020 compared to the same period in 2019, falling from 12911 to 12280, which represents a 5% decrease. This decrease is potentially due to a reduction in enquiries reaching the NPIS from NHS 111, due to the latter system becoming overwhelmed as a main point of contact for COVID-related queries in March
- there was a statistically significant increase in the proportion of calls concerning children under 6 years of age, increasing from 26.2% of all calls in 2019 to 29.0% of all calls in 2020 (see figure 1 below). Unlike the previous toxicovigilance reports submitted (which showed a decrease), the total number of enquiries related to exposures in children also increased by 5 percent, from 3387 to 3556 over the wider reporting period

Figure 1: UKPID: Percentage of enquiries relating to children under 6 years of age



3.3 Cleaning products (excluding hand sanitisers)

A review of NPIS data collected with respect to cleaning products (excluding hand sanitisers) from March to June 2020 showed:

- an increase in enquiries related to inhalation of cleaning products, rising from 110 in 2019 (average 6.5 per week) to 138 (average 8.1 per week) in 2020. Most these enquiries were a result of mixing two or more cleaning products, rising from 67 (average 3.9 per week) to 78 (average 4.6 per week) telephone enquiries
- in 2020 inhalation of cleaning product data the poisoning severity score was determined as asymptomatic in 32 enquiries, minor in 98, moderate in 5 and unknown in 3 at the time of enquiry. Severity was comparable to 2019 data but outcome data is often not available (see Appendix 1)

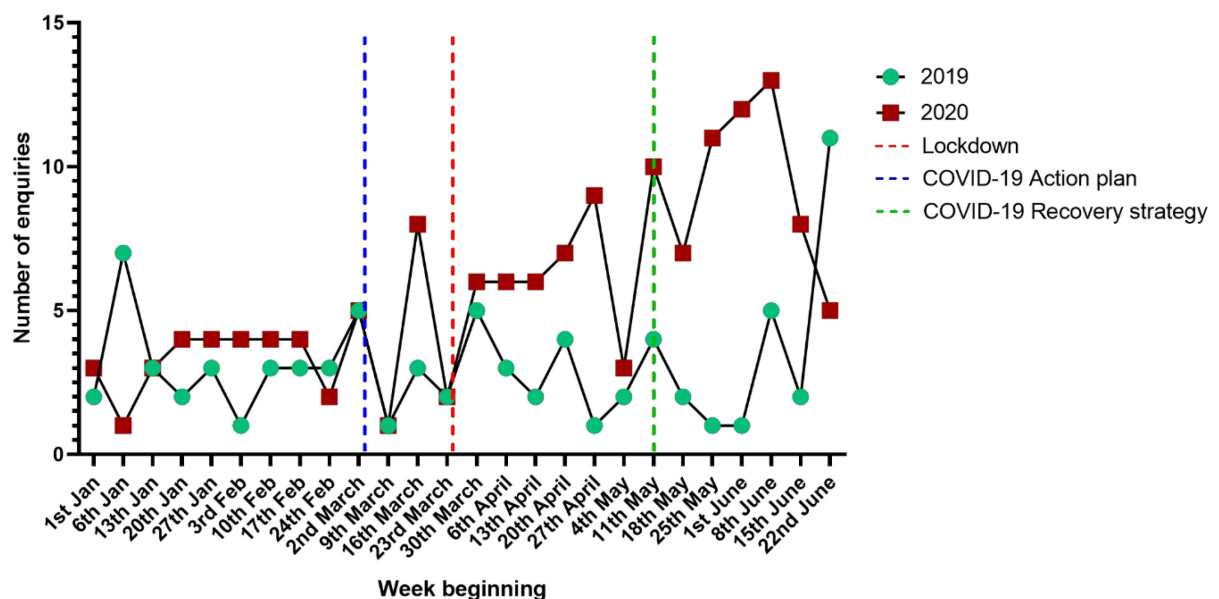
- a decrease in enquiries relating to intentional ingestion of bleaches and disinfectants compared to 2019, falling from 63 to 46 total telephone enquiries. This suggests there is limited evidence that people are intentionally ingesting these to treat COVID-19
- patients injecting cleaning products is a rare occurrence, only two enquires have been identified in both 2020 and 2019

3.4 Hand sanitisers

A review of NPIS data and the total number of phone enquiries related to hand sanitiser from January to June 2020 and the equivalent period in 2019 showed:

- there has been an increase in the total number of telephone enquiries post 2 March in relation to hand sanitiser exposure across all age groups, rising from 86 (average 5.1 per week) in 2019 to 152 (average 9.5 per week) in 2020.
- within this group enquiries were highest amongst children under 6 years of age a statistically significant increase rising from 52 telephone enquiries (average 3.1 per week) in 2019 to 112 (average 6.6) in 2020.
- of the 152 enquiries, the poisoning severity score was determined as no symptoms in 132, minor in 29 and severe in 1 at the time of enquiry. The severity was comparable to the equivalent period in 2019
- TOXBASE database accesses also showed a statistically significant increase in the number of accesses to information on hand sanitiser, rising from 969 accesses to 2403 when comparing data from 2 March onwards.
- Since the initiation of easing of lockdown measures in England on 11 May 2020 enquiry numbers appear to remain elevated compared to 2019 (see figure 2)

Figure 2 UKPID hand sanitiser enquiries (children under 6 years)

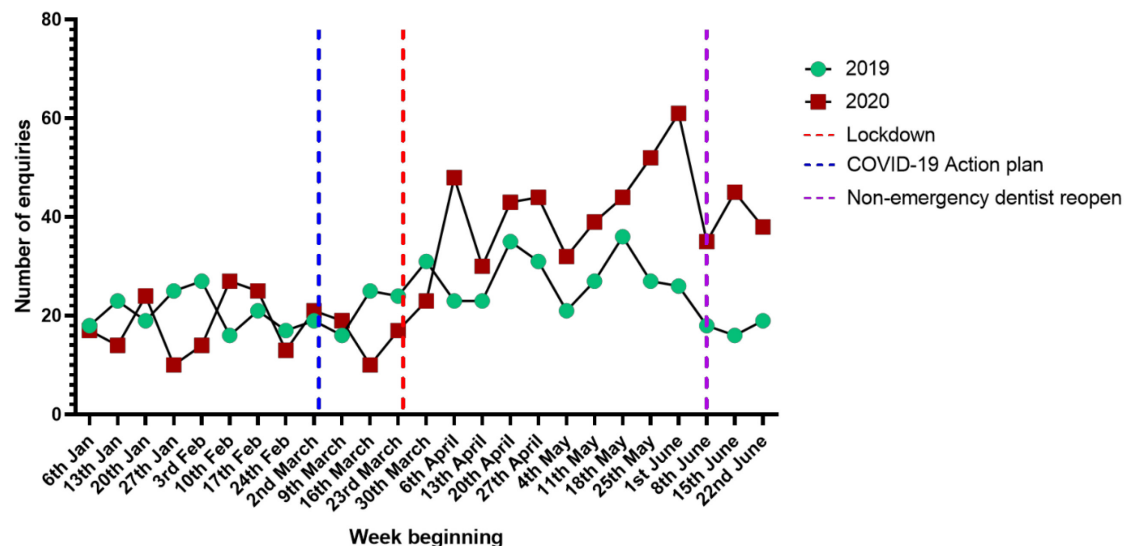


3.5 Analgesic enquiries due to dental pain

An analysis of NPIS enquiries involving paracetamol (and compound preparations), aspirin, other non-steroidal anti-inflammatory drugs (NSAIDs), and codeine-containing preparations was undertaken. These were further narrowed by enquiry records that referred to dental pain. The analysis showed:

- a statistically significant increase in enquiries in relation to dental patients, rising from 357 (25.5 average per week) to 551 (average 39.4 per week) telephone enquiries, due to suprathreshold (excessive) dosages with analgesic pharmaceuticals. This increase was observed following a reduction in available dental services due to lockdown measures
- there is limited data (3 weeks) available post dentists initiating a return to full services in England from 8 June 2020 but enquiry numbers appear to be comparable (39 enquiries per week) to the period before lockdown and remain elevated compared to 2019
- of the 551 enquiries since 23 March, the poisoning severity score was determined as no symptoms in 502, minor in 38, severe in 1 and unknown in 10 at the time of enquiry. The severity of poisoning at the time of enquiry appears comparable to 2019 data

Figure 3: UKPID telephone enquiries for dental analgesics



4.0 PHE CRCE Chemical incident data

PHE's Centre for Radiation Chemicals and Environmental Hazards (CRCE) chemical incident national duty desk receives occasional enquiries and reports of incidents related to chemical exposures. During the last reporting period (June 2020), there were three enquiries received in relation to COVID 19:

- two enquiries related to risks associated with use of hot tubs, spa pools and swimming pools
- one enquiry related to risks associated with agricultural slurry spreading

Further analysis of monthly trends were explored in the nature and location type of incidents logged by PHE. This found that fewer chemical incidents were reported to CRCE in March, April, May and June of 2020 in comparison with previous years. However, a higher number of fires were reported between April and May of 2020, in comparison with previous years, but this may reflect the period of warmer weather experienced over that period. There has been no increase in the number of cases of intentional individual chemical exposures (ICE) reported to PHE in the second quarter of 2020 in comparison to previous years. This finding correlates with NPIS data, which indicates a decrease in the total and proportion of calls related to intentional enquiries.

Appendix 1: Interpretation of NPIS Data

NPIS data reflects UK health professionals accessing information about specific substances via TOXBASE® or via the NPIS telephone information service. The following should be taken into account in its interpretation:

(i) The numbers of TOXBASE® accesses or telephone enquiries do not correlate directly with numbers of patients presenting to health professionals with toxicity for the following reasons:

(a) There may not be a contact with NPIS if the health professional is already familiar with the substance. Familiarity may increase with time and this effect may distort time trends

(b) Enquiries (especially TOXBASE® accesses) may be for educational reasons rather than directly related to a case. Enhanced media coverage may also lead to an increase in enquiries for TOXBASE.

(c) There may be several contacts for the same patient from different health professionals

(d) Contact by telephone is increasingly likely when poisoning is associated with severe features or when the presentation is unusual

(ii) NPIS data are usually obtained at the time of initial presentation of the patient. Although follow up of serious enquiries is attempted, information on patient outcome is often unavailable.

(iii) Telephone enquiry data are based on reported exposure. Analytical confirmation is not available.

(iv) Total numbers of NPIS telephone enquiries (all substances) have been declining as use of TOXBASE® increases, so time trends in total numbers of TOXBASE® accesses or telephone enquiries to specific drugs may be misleading. Annual data may therefore be expressed as proportions of the total numbers of TOXBASE® accesses or telephone enquiry numbers. Data collected over shorter time periods, such as that included in the current report, is unlikely to need correction in this way.