'Substantial variation' in stocks of essential antidotes at UK hospitals

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There is "substantial variation" in the stocks of essential antidotes used to treat various types of life threatening poisoning incidents in UK acute hospitals, finds research published online in *Emergency Medicine Journal*.

National guidance produced jointly by the National Poisons Information Service and the College of Emergency Medicine in 2008 recommends the stocking of 29 antidotes at every hospital with an emergency care department or inpatient beds for treating serious cases of poisoning.

Eleven of the antidotes are recommended for immediate availability (category A); 13 within an hour (category B); while 4 are classed as category C, meaning that they need to be available at designated regional centres.

These antidotes are intended to cover a range of cases, including cyanide poisoning toxic alcohol poisoning, and snake bites.

The authors surveyed all 224 acute hospitals in England, Wales, and Scotland about their stocks of all categories of antidotes. In all, 196 hospitals (87.5%) responded: 141 in England; 21 in Wales; and 34 in Scotland.

They also asked about the availability of Intralipid, which has come into clinical use since the 2008 guidelines, and which is used to counter the effects of patients severely poisoned by local anaesthetics and other fat

soluble drugs.

The responses showed that most hospitals (90%) stocked commonly used category A antidotes, such as acetylcysteine (paracetamol overdose), activated charcoal (a range of swallowed toxins), naloxone (illicit drug overdose) and flumazenil (sleeping pill/tranquillizer overdose).

But the availability of cyanide poisoning antidotes was much lower, ranging from one out of five (21%) for hydroxocobalamin to three out of four (74%) for dicobalt edetate.

Dicobalt edetate is the preferred treatment for severe cyanide poisoning, but was not available in 29 (15%) hospitals. Nine of these hospitals held no other antidote for cyanide poisoning cases.

Altogether only half (100 out of 196) of all hospitals held all the other seven category A antidotes.

Intralipid was available in 62% of hospitals, despite not being included in the 2008 guidelines.

Out of the category B list, most (90%+) hospitals carried dantrolene (muscle relaxant), desferrioxamine (for iron overload), and phytomenadione (synthetic vitamin K to treat excessive bleeding), but less than half (47%) stocked cyproheptadine or the viper venom antiserum.

And the availability of antidotes for toxic alcohol and glycol poisoning was also less than optimal, the survey responses showed, with levels of availability for the three recommended antidotes ranging from 17% to 72%.

Excluding the acute toxic alcohol poisoning antidotes, less than one in 10

hospitals stocked all the other 10 recommended antidotes.

The antidotes held at regional centres are those that are likely to be used only rarely. Nevertheless, availability ranged from 4% (mercury poisoning) to 25% (lead poisoning).

And it is unclear why only one in three hospitals designated to hold stocks of pralidoxime (by the Department of Health), used to treat insecticide poisoning, actually did so, say the authors.

"While antidotes that are used commonly are widely available, those needed to treat less commonly encountered poisonings are often not stocked," they write.

"This is of concern, because poisoning with the agents concerned [digoxin, cyanide, and toxic alcohols] is frequently associated with severed morbidity and mortality, and the timely use of an antidote may be life saving."

The authors say that despite the publication of the 2008 guidelines, the picture has improved little since 2007. Limited awareness, lack of availability and high cost may all be contributory factors, they suggest.

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