



Confusing drug packaging contributes to death of 15 children

At least 15 children have died after being vaccinated against measles in northern Syria, owing to accidental injection of atracurium.¹ The seriousness of this particular event is compounded by the fact that the deaths were associated with vaccination in a population in the midst of civil war whose trust in western medicine is already fragile.

It was an accident waiting to happen. 5 years ago a problem was reported with the packaging of atracurium, a deadly muscle relaxant used in surgery. "In a pediatric ICU, a respiratory therapist obtained what he thought was a sterile water vial to prepare a nebulizer treatment. As he was piercing the stopper, he fortunately noticed that he had accidentally grabbed a vial of atracurium that someone had inadvertently returned to a respiratory box in the refrigerator. The atracurium and sterile water vials both had similar purple color accents."²

Reports suggest that the current accident was caused by the same confusing drug packaging: "While someone was preparing the vaccines, instead of putting the regular diluent for the vials, he mixed it with atracurium, which has the same colour bottle and same patch on it", said Khaled Almilaji, health department manager...¹

WHO made a formal statement on Sept 27. It read: "The Atracurium ampoules were incorrectly added to vaccination packs prepared in one District Vaccine Distribution Centre in Idleb Governorate and distributed to four vaccination teams on the second day of the measles campaign."³ Curiously, the statement does not acknowledge that atracurium and sterile water vials both have similar purple colour labels.

We call on WHO and the pharmaceutical industry to take urgent action

to ensure that packaging of dangerous drugs such as atracurium is strikingly different from packaging of innocuous diluents such as sterile water. This kind of mistake has happened too often in the past. It should not happen again.

We declare no competing interests.

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- 1 Cousins S. Contaminated vaccine deaths a serious setback for Syria. *Lancet* 2014; **384**: 1172.
- 2 Grissinger M. Paralyzed by mistakes, part 1: preventing errors with neuromuscular blocking agents. *Pharm Therapeut* 2009; **34**: 466–81.
- 3 WHO. Statement regarding interim findings of WHO assessment of deaths of children in Idleb Governorate, Syria. <http://www.who.int/mediacentre/news/statements/2014/interim-findings-idleb-syria/en/> (accessed Oct 7, 2014).