

Consideration of the use of PAVA spray on children held on youth justice grounds in the Children & Young People Secure Estate

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1. Background

The Youth Custody Service (YCS) are considering whether PAVA spray should be available for use by staff in the YCS without special authority. The use of the spray currently requires the permission of Gold Command under special circumstances. Following an incident at Oakhill STC and discuss at YCS Operation Management Committee NHS England agreed to provide a paper on health implications for children placed on youth justice grounds in Children & Young People Secure Estate (CYPSE). This paper specifically considers the impact of the use of PAVA spray in the CYPSE and how this will differ from other aspects of use of force, from a neurodiversity, trauma, and mental health perspective.

2. Introduction

PAVA (Pelargonic Acid Vanillylamide) is an irritant spray dispensed from a hand-held canister in a liquid stream. PAVA is classified as a prohibited weapon by section 5(1) (b) of the Firearms Act 1988. Operational staff are legitimised in using it only through constabulary authority.

Operational procedures and practices outline a spectrum of responses to PAVA with 'some people suffering little to no effects, and others displaying a more severe reaction'.¹ Further, principles that outline the justifiable use of PAVA rely on staff to make a dynamic risk assessment of the circumstance that consider any known triggers for behaviour, including

‘mental health crisis, emotional vulnerability or intellectual disability’ however this does not explicitly consider the neurodiverse needs of the person.

3. Evidence base

The Faculty of Forensic and Legal Medicine regularly reviews the evidence base and issues guidelines on the effects of irritant sprays and management of those exposed to them (all ages).

The most recent edition of the FFLM Irritant Spray Guidelines dates from 2021 and is next due to be reviewed in 2024. In the 2021 guidelines it was noted that 'the true incidence of morbidity (and possible mortality) of irritant spray remains unknown in the absence of prospective clinical studies of appropriate statistical power'.²

Further, the guidelines note that the duration of action of the irritant sprays when used 'in the field' seems much longer than that described by the manufacturers. The manufacturers contacted as part of this review state the effects last 30 - 45 minutes,³ but several studies have found effects lasting for several hours.⁴ This raises concerns about the proportionality of the effects of irritant sprays.

The Committee on Toxicity specifically highlights in this 2018 document that children are more vulnerable to effects of irritant sprays⁵, so any underestimation of harm for the use of irritant sprays generally is likely to be of increased relevance to children.

In 2014 the Home Office compared the use of irritant sprays, based on the opinion of Prison Officers who had used them. Officers noted that PAVA may be more likely than CS spray to cause 'panic in those it is used on'.⁶

4. Children

The research that does exist regarding the use of irritant sprays does not cover a diverse population and is mainly focused on adults. A 2017 systematic review found in studies in which age was reported, the age ranged from 3 months to 94 years, with a mean age of 25.7 years. In studies in which gender was reported, 57% of subjects were male and 43% were female. Of those that did cover children these are mainly case studies. A prospective British study included 14–18-year-olds but does not separate out the findings.⁷ NHS England have written to the lead author asking if he is able to share any findings relating to children. This study mainly looked at the effects of CS spray but 12% were exposed to PAVA.

5. Mental health

FFLM Guidelines suggest that those with mental disorders are less likely to respond 'as expected' to irritant sprays. We know that there is a high rate of mental health problems in the

CYPSE, therefore there is reason to believe PAVA may be less effective in the CYPSE population.

Further, PTSD from use of irritant spray occurred in 25% of those exposed to CS spray and more likely in those with mental health problems and experiencing an external locus of control.⁸

6. Irritant sprays in neurodiverse populations

There is a paucity of research on the use of irritant sprays in neurodiverse populations, from the literature and from contacting experts.

However, as noted earlier CS and PAVA fail to affect about 10% of people exposed to spray and one group that the FFLM guideline identifies as being less likely to be affected by irritant sprays is those with 'intoxication with other drugs or alcohol; mental health issues; or other causes of acute behavioural disturbance'

7. Autism spectrum condition

The incidence of autistic 'meltdown' can be classed as being a non-standard or 'other cause of acute behavioural disturbance' and therefore suspect that children with an autism spectrum condition could be one group that might not respond to PAVA spray as expected.

This could lead to a risk of this cohort being subject to repeated and high dose exposure to PAVA as they are not responding 'as expected'.

Further, atypical increased agitation following administration of PAVA in this 'non-standard' cohort is also reported in the literature and highlighted in FFLM Guidelines.

There is a risk that that children with an autism spectrum condition who PAVA is used on might experience increased agitation, as autistic meltdowns are triggered by sensory and emotional overstimulation. Irritant sprays are designed to cause unpleasant sensory sensations. Given that we know that autistic individuals often experience dermal sensitivity so they struggle with seams/labels in clothes, photophobia, reduced tolerance of heat, it seems plausible that they would be unduly affected by the effects of PAVA spray.

It has been noted that increased agitation following PAVA exposure can 'impede initial decontamination and increase the risks of secondary contamination of self or other'.

Of note, warmth (of the environment or the person) re-activates the active ingredients in PAVA spray and it is reasonable to assume that a child with an autism spectrum condition who has been sprayed may want to withdraw to a low stimulus environment such as a room, but the warmth of a small room could perpetuate the effects of the spray leading to further distress/agitation.

Sensory sensitivities are not unique to autism and can occur across neurodiverse populations. However, they are most common in the autistic population, and this is of particular concern.

This is to be considered alongside The Prison Reform Trust report, No One Knows, which reported that:

“Prisoners with learning disabilities and difficulties were five times as likely to say they had been subject to ‘control and restraint’ as those in the comparison group, 25% and 5% respectively.”

8. ADHD

It is possible that those with ADHD might also fall into the group that respond differently to CS/PAVA - but the pathway behind this is less clear than from the evidence than for children with an autism spectrum condition. Sensory sensitivities are more likely in the ADHD population compared with neurotypical population and could be a possible mediator.

It is known, though, that untreated ADHD young offenders/adult prisoners are more likely to be restrained⁹ and so they could be more likely to be exposed to PAVA than the non-ADHD group.

Further, the FFLM guidelines state that PAVA spray can lead to an increase in blood pressure for those who are already at risk of increased blood pressure. Given that all ADHD medication (stimulant and non-stimulant) runs the risk of increasing blood pressure (hence the NICE guidelines stipulating mandatory regular monitoring), particular care should be taken to monitor bp in those taking ADHD medication.

9. Conclusion and recommendations

From the limited evidence available on the use of PAVA spray in neurodiverse populations it is reasonable to conclude that autistic individuals may be differently affected by the effects of PAVA and may be slower to recover. This may also be true of other neurodiverse individuals. It is an area where more research should be done.

With respect to young people in general, it seems like the higher rates of mental health problems could put them at increased risk of PTSD and they also may not respond as expected to irritant spray.

NHS England recommends the findings from wider work commissioned by YCS including, the risk matrix being prepared by Dr Ian Maconochie, YCS Psychology advice, and this paper on neurodiverse needs of children be considered as part of an Equality Impact Assessment to inform future consideration of the use of PAVA spray.

References

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