



Research Review

Use of Ion Scanners in Correctional Facilities: An International Review

KEY WORDS: *drug detection, ion scanner, ion mobility spectrometer, prison*

What we looked at

Under current Correctional Service Canada (CSC) policy, Ion Mobility Spectrometry (IMS) devices (also referred to as ion scanners) may be employed as a non-intrusive search tool for inmates, staff and visitors, as well as for incoming mail and parcels. The current review examines the use of IMS devices internationally, discusses their benefits and limitations and examines existing research.

What we found

An IMS unit is a type of trace detecting device that measures the deflection of particles after they are exposed to an electric field. The speed at which the particles move helps to determine the substance of origin. In a correctional setting, ion scanners may be placed at front entrances or within the mail room of the prison, where any object can be swiped. IMS devices detect minute traces of substances programmed into the unit. Samples are collected by wiping or vacuuming objects and then placing the filter or swipe into the unit. Up to six seconds later, the results are displayed.

The efficiency and portability of IMS units has made them a marketable tool in combating drug supply. The device is user-friendly, requiring only a few hours of training (US Department of Justice, 2000). Furthermore, IMS devices, in comparison with other trace detection devices, are less costly to purchase and maintain. The speed at which results are revealed is an additional benefit of IMS.

One drawback of IMS technology is that it measures drug particulates down to the nanogram, identifying 'false positives' frequently (SCA Inc., 2001). In examining the practical reliability of detection by IMS units in a laboratory and prison setting, one study found that cocaine was the only drug that was reliably detected, while heroin and amphetamine were poorly detected. Detection capability was also found for the prescription drug temazepam (Sheldon et al., 1998). IMS units most effectively detect powdered or liquid forms of drugs; the finer the powder the greater the likelihood of detection. This renders other forms of drugs such as pills and larger particles (i.e. marijuana), less likely to be detected (Butler, 2002).

There is a paucity of research literature regarding the use of IMS devices within correctional institutions. However, the available studies demonstrate that ion scanners

successfully identified many of the drugs of concern for CSC and were linked with a reduction in the introduction of drugs in institutions after implementation of the technology (Hogsten, 1998, NCJRS, 2008). Furthermore, one study found that significant reductions in drug-related offender misconduct following the placement of an IMS unit in the lobbies of two correctional institutions, (86% and 58%, respectively); larger reductions than were found in other institutions that did not use IMS units (Hogsten, 1998).

What it means

Overall, this review indicates that IMS units are useful in detecting most drugs. However, these devices are often oversensitive and are limited in their ability to detect certain forms of drugs. Additional research is needed to address gaps in our knowledge such as determining the impact of IMS units on inmate drug use and institutional behaviour, drug smuggling by inmates, staff and visitors, etc. Furthermore, additional well-controlled research is needed to support the limited research currently available on the reliability of IMS devices within a correctional context.

References

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