Evaluation of the Detector Dog Service (DDS) Program: Detailed findings

Notice:

The report entitled Evaluation of the Detector Dog Service (DDS) Program, originally published on November 30, 2023, has been modified in two sections: 1) Theme 1: Contributions to facilitation, Finding 4; and 2) Theme 3: Achievement of [redacted] commitments, Finding 6.

In Finding 4, upon further assessment, the number of seizures originally cited in the report was found to contain several categories of goods seized which should not have been classified as "firearms". The report was updated on February 14, 2025 to reflect the appropriate numbers and percentages of firearm seizures in postal mode. Accordingly, in Finding 6, the percentage decrease in DDS contributions to ICES firearm seizures was also updated.

These corrections do not impact the findings or recommendations of this report.

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Theme 1: Contributions to facilitation

Finding 1: DDS teams contribute to the Agency's facilitation objectives by saving processing time and conducting efficient and non-intrusive examinations. The extent of these contributions was difficult to measure with existing data.

Outcome assessed: Legitimate goods cross the border in a timely fashion and are subject to minimal intervention.

Evidence from the survey, interviews, case studies and field visits indicated that detector dogs can detect contraband in a fraction of the time than it would take a BSO to search travellers or conveyances. [4] Case studies showed that DDS teams can:

- Currency (Air, Traveller): Screen a flight of 250-300 passengers in 15 minutes
- D&F (Postal, Commercial): Screen thousands of boxes in 15-20 minutes
- D&F (Marine, Commercial): Screen a container in 5-10 minutes
- FPA (Air, Traveller): Screen a flight of 250-300 passengers in 15-20 minutes

The full extent of the Program's facilitation contributions is difficult to measure through data collected, as without the DDS teams, travellers and conveyances may not be screened at all (due to resource limitations), rather than being screened more slowly. For example, screening an entire flight for FPA products would require examining all travellers and their luggage in secondary.

Across all modes and Regions, most Chiefs and Superintendents said that the DDS teams contribute positively to facilitation objectives by:

- screening high volumes of travellers and goods
- contributing to examinations being conducted faster.

Finding 2: There are limitations to DDS teams' facilitation abilities, and they must be used in combination with other Agency tools to maximize effectiveness.

Outcome Assessed: Legitimate goods cross the border in a timely fashion and are subject to minimal intervention.

All detection technology tools used by the Agency are designed to be used in alignment with their strengths, and in conjunction with each other. Therefore, limitations to the DDS teams' use do not speak to their effectiveness as a detection tool.

The following limitations to the DDS teams were identified:

- DDS teams are trained to detect one of four types of regulated/prohibited goods:
  - some (but not all) drugs
  - traditional firearms
  - currency
  - food/plant/animal products

        - They cannot be used to detect regulated/prohibited goods for which they have not been trained
- Each detector dog is trained to detect specific odours by type, for example, D&F dogs cannot detect FPA products
    - Three different types of DDS teams need to be present at the same time to screen for all four types of regulated/prohibited products
- The success of DDS teams (as a detection tool) is dependent on the type of DDS team requested and the specifics of the situation
    - This depends of factors such as the experience and judgment of the BSOs and the availability of DDS teams
- The ability to adjust quickly to new threats is limited by the time it takes to design training and train/retrain DDS teams to detect new emerging threats [5]

Finding 3: DDS teams are generally effective at intercepting the regulated/prohibited goods they are trained to detect and are positively contributing to the Agency's enforcement objectives.

Outcome assessed: Regulated and prohibited goods, including drugs, firearms, currency, and FPA products are intercepted and processed accordingly.

The percentage of confirmed indications is high amongst all types of DDS teams, meaning they are all operating with a high degree of accuracy (rare false positives). [6]

Average per year (percentages may be over 100 because a single search may yield multiple indications):

- Searches involving DDS teams: [7] 24,834
- Types of DDS teams used (% of total searches):
    - Currency: 5%

    - D&F: 71%
    - FPA: 24%
- % of searches leading to indications: [8]
    - Currency: 179%
    - D&F: 37%
    - FPA: 150%
- % of indications confirmed (prohibited/regulated good found):
    - Currency: 95%
    - D&F: 92%
    - FPA: 91%
- % of confirmed indications leading to enforcement action:
    - Currency: 27%
    - D&F: 76%
    - FPA: 13%

In certain circumstances, DDS teams are more effective or more convenient to use than other technologies.

Since the addition of 19 new FPA DDS teams to airports and postal facilities ([redacted]), the number of pork interceptions has increased from 775 in 2020 to 2021 to 2,310 in 2021 to 2022 [9], helping to reduce the threat of African Swine Fever (ASF). ASF poses a significant risk to the health of the Canadian swine herd, the pork industry and the Canadian economy.

Other positive contributions: [10]

Public awareness

DDS teams educate the travelling public on proper declaration requirements, which goods may or may not be brought across the border, as well as awareness sessions at schools and other functions

Spontaneous admission

These are admissions by travellers of having prohibited/regulated goods once a BSO informs them that a DDS team will be called to search them.

Deterrence

DDS teams are visible and contribute to increasing public compliance.

Supporting Traveller Modernization

as the Agency moves towards low-touch environment, DDS teams are integral to enforcement and screening traveller/goods, such as supporting roving. [11]

Quantitative and qualitative evidence shows that DDS teams benefit the Agency by filling a complementary role along with other detection technology.

DDS teams are contributing to Integrated Customs Enforcement System (ICES) seizures [12] with a greater average monetary value per use compared to when no technology or large-scale imagers (LSIs) are used.

The following reflects data from 2017 to 2018 to 2021 to 2022:

- BSO examination (no technology): 68% of all ICES seizures did not use detection technology, accounting for 44% of the monetary value of all seizures
- DDS teams: DDS teams were involved in 4% of all ICES seizures and accounted for 9% of the monetary value of all seizures
- Large-scale imager: [13] 1% of all ICES seizures used LSIs, and accounted for 1% of the value of all seizures. [*]

Stakeholders (survey and interviews) agreed that DDS teams provide a unique value that cannot be replicated by other CBSA detection tools:

- DDS teams are mobile and can work multiple modes and POEs with little to no set-up

- [redacted]
- LSI takes three to four BSOs to operate and can break down, and is sometimes unavailable for long periods of time
- [redacted]

Note: Contribution analysis allowed comparisons to be made between DDS teams and other forms of detection technologies to assess the extent of the Program's contributions in relation to other contributing factors. It is important to note that a comprehensive analysis of the benefits of other detection technologies was not completed in this evaluation. Comparisons highlight the unique contributions of DDS teams, and are not meant to assess the value of other detection technologies.

Finding 4: The DDS Program's contributions to firearm [14] interceptions were limited, presenting an opportunity to assess how D&F teams can be maximized in this area.

Outcome Assessed: Regulated and prohibited goods, including drugs, firearms, currency, and FPA products are intercepted and processed accordingly.

D&F teams are used most often (71% of DDS team total use, compared to 24% FPA and 5% currency); however, D&F teams have the lowest percentage of searches leading to indications (37%, compared to over 100% for FPA and currency). [15], [16]

Data from 2017 to 2018 to 2019 to 2020 data shows an increase in total number of firearms (including parts, magazines and ammunition) seizures when DDS teams were used.

Fiscal year	Firearms and Magazine
Upward trend is noticed prior to 2020-2021. Pandemic years (greyed out) cannot be used for trend analysis.	

Fiscal year	Firearms and Magazine
2017-2018	108
2018-2019	156
2019-2020	200
2020-2021	88
2021-2022	134
Upward trend is noticed prior to 2020-2021. Pandemic years (greyed out) cannot be used for trend analysis.	

However, DDS teams contributed to less than 1% of total ICES firearms seizures from 2019 to 2020 to 2021 to 2022:

- Total firearm seizures: 9,321
  - DDS contribution to firearm seizures: 414
- Firearms seizures in Postal Mode: 6,561
  - DDS contribution to Postal Mode firearm seizures: 6

While 70% of CBSA firearms seizures (also includes parts, magazines and ammunition seizures) occurred in postal mode, which since 2019 to 2020 is well-covered by DDS teams, DDS teams contributed very little to interceptions in this mode.

While DDS firearms seizures increased from 2017 to 2018 to 2019 to 2020, the contribution of DDS teams compared to the total number of firearms seizures decreased. This suggests that the DDS teams may not be the most effective detection tool in use to locate firearms.

D&F DDS teams are trained to detect specific odors associated with traditional firearms, [redacted]. This could play a part in reduced DDS contributions to total firearms seizures.

Limitations of detector dogs as a tool for enforcement

Survey respondents (dog handlers) expressed other valid limitations of DDS teams which would need to be considered when making decisions around future investments in detection technology:

- Detector dogs are living beings:
  - Detector dogs can get sick, tired, and can sometimes lose focus, motivation or intensity to search
  - They require attention to basic needs (such as food, water, rest etc.) which can impact their availability
  - Certain temperatures make it difficult for the detector dogs to work (e.g. too hot or too cold)
- Availability of DDS teams and detector dog capability:
  - Limited number of DDS teams and as such they are not always available
  - The detector dogs can only detect contraband if they have been trained in a particular odour or if the contraband has not been concealed in a way that eliminates the odour
- Operational environment factors:
  - Certain environments are not safe for the detector dogs (containers with strong, unknown odours, busy roadways in highway mode) – detector dogs cannot be used
  - Large volumes of passengers or goods sometimes make it challenging for the DDS teams to operate and could present a safety issue for the detector dogs

A note on seizures: Contribution vs. attribution

> The evaluation used a contribution analysis approach to acknowledge that seizures cannot be solely and directly attributed to the DDS Program due to the fact that DDS teams are used in conjunction with other tools and are used for confirmation purposes in some instances.

Theme 2: Program focus and priorities

Finding 5: There is an opportunity to review the DDS Program focus to determine the continued need for detection of certain odors and potentially refocus on threats that are not sufficiently covered.

Outcome assessed: Regulated and prohibited goods, including drugs, firearms, currency, and FPA products are intercepted and processed accordingly.

General consensus amongst dog handlers, superintendents and chiefs that the Program is focusing on the right priorities and is aligned with the CBSA Traveller Modernization initiatives and the concept of low-touch environment.

What stakeholders said we should continue to detect:

- ASF (remains a threat to Canada)
- currency and the various drugs that the detector dogs are already trained to detect (remain a threat to Canada)

What stakeholders said about no longer needing to detect marijuana:

> While the *Cannabis Act* (2018) lowered the level of threat that marijuana poses to Canada, it is still illegal to transport it across the border. Some respondents questioned the continued need for this legislation.

Potential review of the *Cannabis Act* by Strategic Policy Branch could result in changes to CBSA's authority – is the risk health and safety, economic, or both?

Some dog handlers and their managers felt that it was time to reassess the need to continue to enforce for marijuana at the border. [17]

What stakeholders said we should detect more:

Some dog handlers and their managers believed that there is a need to train more detector dogs on fentanyl and drug precursors.

Other considerations and supporting evidence:

- 86% of all opioid-related deaths in 2021 in Canada involved fentanyl
- [redacted]
- [redacted]

Fentanyl precursors: A case study (Annex G-4)

A D&F DDS Team in the Pacific Region (marine mode) was called in to examine a pallet, which had boxes containing an unknown substance.

While the IonScan showed negative results, [18] the detector dog that was trained to detect fentanyl indicated on the boxes.

Further testing revealed the unknown substance as a fentanyl precursor, with the amount seized valued at $18 million.

Detector dogs not trained on fentanyl may not have indicated on the substance, in which case it likely would not have been sent for further testing.

Theme 3: Achievement of [redacted] commitments

Finding 6: [redacted] funds were expended as planned and all commitments are on track to be met by end of 2022 to 2023. Some initial positive results were noted, but more time will be required to fully measure the impacts of these investments. [19]

The addition of new DDS teams under the Opioid Crisis and African Swine Fever [redacted] fulfilled the underlying purpose of the [redacted]. The addition of new DDS teams under the Guns and Gangs [redacted] has not fully achieved the expected results of [redacted] – the Program should explore this further. For full details on the [redacted] see Annex D.

Guns and Gangs (2017-2018)	Opioid Crisis (2018)	African Swine Fever (2019)
Expected deliverable: 5 D&F teams	Expected deliverable: 6 D&F teams	Expected deliverable: 24 FPA teams
5 D&F Teams were added in 2018-2019	6 D&F Teams were added in 2018-2019	19 FPA teams were deployed and 2 more will be added by 2022-2023

1 Total ICES firearms seizures increased by 127% and DDS contribution decreased by 6% (from 2017 to 2018 to 2019 to 2020)

Guns and Gangs (2017-2018)	Opioid Crisis (2018)	African Swine Fever (2019)
28% increase from 2018-2019 to 2019-2020 in DDS firearms and magazines seizures	101% increase in total ICES narcotics seizures	198% increase in pork interceptions (reporting began 2020-2021)
6% decrease in DDS contribution to ICES firearms seizures [1]	373% increase in DDS contribution to ICES narcotics seizures	725% increase in pork-related enforcement actions

1 Total ICES firearms seizures increased by 127% and DDS contribution decreased by 6% (from 2017 to 2018 to 2019 to 2020)

Note: Unless otherwise indicated, calculation are made over the evaluation period (2017 to 2018 to 2021 to 2022)

Footnotes:

4 Screening times cited are for ideal conditions. Other factors impact the DDS teams' screening times such as weather conditions, high-intensity passenger peaks, and airport staffing.

5 The ability to adjust quickly to new threats is limited – time is needed to train DDS teams to detect new threats, including finding safe training aids. Then the teams would need to be evaluated and certified to ensure accuracy. For example, the Program explored the idea of detecting COVID-19, however, Health Canada wasn't able to provide safe training aids. Of note, training (DDTP) is out-of-scope for this evaluation. The case of fentanyl is discussed in Finding 5.

6 A false positive is when a detector dog indicates the presence of a regulated/prohibited good, but such good is not found during a search. This could be due to a variety of reasons, including residual odours, cross contamination, or other.

7 A search is defined as "purpose-driven time" in which the detector dog and DDH are searching for contraband. A search could consist of searching one traveller, or a room with 500 boxes.

8 A single search may yield multiple indications.

9 Prior to that, the Agency did not specifically track pork seizures.

10 For additional contributions, see Annex C.

11 Roving is a fundamental part of the CBSA enforcement and used to screen and refer travellers and conveyances for examination.

12 ICES is one of the CBSA systems where enforcement actions and seizures are recorded. See Annex B for data limitations.

13 This includes all LSIs (pallet, mobile and fixed).

14 Firearms (includes parts, magazines and ammunition).

15 Percentages may be over 100 because a single search may yield multiple indications.

16 With FPA and currency – some lack of understanding or awareness of the rules and risks of bringing currency and FPA products across the border. Meanwhile, the rules, risks and consequences of bringing in drugs and firearms are generally well understood. D&F teams are finding mostly prohibited goods, while FPA and Currency teams are finding mostly regulated goods. This speaks to the factor of opportunity, more people are likely to bring across FPA products and currency than prohibited drugs and firearms.

17 Not all respondents agreed. Others noted that, while now legal within Canada, marijuana is illegal to import or export across the border and should remain within the DDS repertoire. It is worth noting too that the Agency's Strategic Policy Branch is engaged in a potential review of the *Cannabis Act* that may results in changes to the CBSA's authority.

18 The IonScan is an explosives and narcotics trace detector. A negative result indicates that no explosive or narcotics is present in the sample.

19 The pandemic years (2020 to 2021 to 2021 to 2022) presented a particular challenge to assessing the impacts of these investments, as most teams were added just before the pandemic.

* Time period for the data is from 2017 to 2018 to 2021 to 2022.

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