



March 2019

# BORDER SECURITY

## DHS Should Improve the Quality of Unlawful Border Entry Information and Other Metric Reporting

# GAO Highlights

Highlights of [GAO-19-305](#), a report to congressional committees

## Why GAO Did This Study

According to DHS, the United States has approximately 6,000 miles of land borders, 95,000 miles of coastline, and more than 300 ports of entry where travelers and cargo are inspected and processed for entry. Securing U.S. border areas is a key part of DHS's mission, and the department's ability to measure its border security efforts is essential for it to manage its responsibilities effectively and efficiently.

The NDAA for Fiscal Year 2017 requires DHS to report annually on 43 border security metrics. DHS issued its first report in May 2018. The Act also includes a provision for GAO, within 270 days of receipt and biennially for the following 10 years, to review and report on the data and methodology contained in DHS's report. This report assesses the extent to which DHS: (1) reported metrics as outlined in the NDAA using quality information; and (2) validated assumptions and conveyed statistical uncertainty for unlawful entry metrics, among other objectives. GAO assessed the methodology and data in DHS's report, analyzed DHS's use of statistical models, and interviewed officials from DHS offices and components involved in developing the metrics.

## What GAO Recommends

GAO is making four recommendations, including that DHS develop and implement a process to systematically review the reliability of metric data, identify and communicate limitations of the metrics, and include the results of sensitivity analyses and measures of statistical uncertainty for metrics derived from statistical models. DHS concurred with the recommendations.

View [GAO-19-305](#). For more information, contact Rebecca Gambler at (202) 512- 8777 or [gambler@gao.gov](mailto:gambler@gao.gov).

March 2019

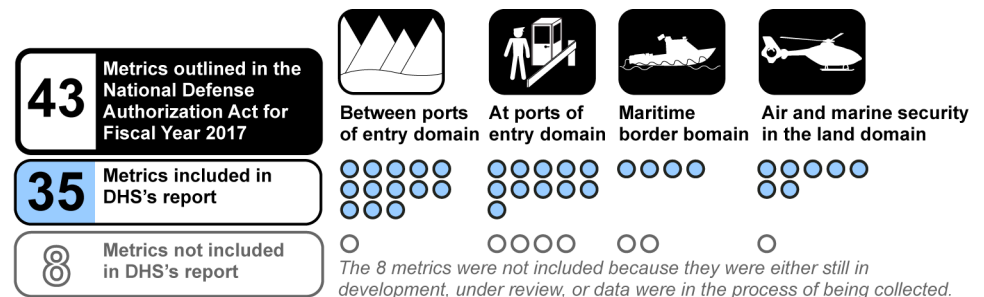
## BORDER SECURITY

### DHS Should Improve the Quality of Unlawful Border Entry Information and Other Metric Reporting

## What GAO Found

The Department of Homeland Security (DHS) reported on 35 of 43 metrics called for by the National Defense Authorization Act (NDAA) for Fiscal Year 2017 (see figure); it generally used quality information, but did not identify some data limitations. GAO found that about half of the 35 metrics generally included elements as called for by the NDAA, while 17 metrics differed, such as in scope or calculation. For example, DHS only provided information on the southwest border for some metrics, such as the estimate of undetected unlawful border crossers for which a methodology for estimating unlawful crossings for the northern border had not yet been completed. DHS components responsible for collecting the metric data generally have processes in place to ensure the reliability of the data and the quality of the information provided. DHS also identified and disclosed limitations for some, but not all, of the data elements and metrics used. For example, GAO found that DHS did not disclose limitations on data related to apprehensions of individuals that were assisted by unmanned aerial systems. By developing and implementing a process to systematically review the reliability of the data and comprehensively identify and communicate limitations, DHS would improve the quality of the information provided.

#### Number of Metrics Included in the Department of Homeland Security's (DHS) Fiscal Year 2017 Border Security Metrics Report



Source: GAO analysis of DHS's fiscal year 2017 Border Security Metrics Report. | GAO-19-305

DHS used a statistical model to estimate three metrics on unlawful border entries but did not validate some assumptions the model employs through sensitivity analyses and provide measures of statistical uncertainty in accordance with standards for federal agencies. For example, DHS's model assumes that 100 percent of families unlawfully crossing the border will be apprehended, but DHS did not provide information on the extent to which the assumption affected its metrics. DHS also did not provide information on the level of statistical uncertainty for the metrics, such as margins of error. Providing such information would allow Congress and the public to better understand the potential limitations and accuracy of these metrics of unlawful entry. Additionally, DHS's statistical model, which is based on Mexican adults not seeking asylum, represents a small and declining share of those apprehended at the border and DHS is developing a new model to account for current border conditions.

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## Abbreviations

AMO	Air and Marine Operations
APR	Annual Performance Report
Border Patrol	U.S. Border Patrol
CBP	U.S. Customs and Border Protection
CDS	Consequence Delivery System
Coast Guard	U.S. Coast Guard
COMPEX	Compliance Measurement Examination
DHS	Department of Homeland Security
ERO	Enforcement and Removal Operations
GPRAMA	Government Performance and Results Act Modernization Act of 2010
ICE	U.S. Immigration and Customs Enforcement
ISF	Importer Security Filing
NDAA	National Defense Authorization Act for Fiscal Year 2017
NTC	National Targeting Center
OFO	Office of Field Operations
OIG	Office of Inspector General
OIS	Office of Immigration Statistics
OMB	Office of Management and Budget
POE	port of entry
UAC	unaccompanied alien children
VADER	Vehicle and Dismount Exploitation Radar

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March 21, 2019

The Honorable Ron Johnson  
Chairman  
The Honorable Gary Peters  
Ranking Member  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable Bennie G. Thompson  
Chairman  
The Honorable Mike Rogers  
Ranking Member  
Committee on Homeland Security  
House of Representatives

Securing the nation's borders against illegal entries, smuggling of drugs and contraband, and terrorist activities is a key part of the Department of Homeland Security's (DHS) mission. According to DHS, the United States has approximately 6,000 miles of land borders, 95,000 miles of coastline, and 328 ports of entry (POE).<sup>1</sup> DHS's ability to measure border security activities, outputs, and outcomes is essential for the department to make evidence-based decisions about resource allocation and investments and manage its border security responsibilities effectively and efficiently. In our prior work, we have reported on the need for DHS to improve its measures for assessing its border security efforts.<sup>2</sup>

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<sup>1</sup>POEs are facilities that provide for the controlled entry into or departure from the United States. Specifically, a POE is any officially designated location (seaport, airport, or land border location) where DHS officers or employees are assigned to clear passengers and merchandise, collect duties, and enforce customs laws, and where DHS officers inspect persons entering or applying for admission into, or departing the United States pursuant to U.S. immigration and travel controls.

<sup>2</sup>For example, in February 2017 we reported on the use of border fencing along the southwest border and found that DHS could do more to measure the impact of its fencing on border security operations. We recommended that DHS develop metrics to assess the contributions of pedestrian and vehicle fencing to border security along the southwest border using existing data. DHS agreed, and as of October 2018, stated that the department planned to implement such metrics by September 2019. See GAO, *Southwest Border Security: Additional Actions Needed to Better Assess Fencing's Contributions to Operations and Provide Guidance for Identifying Capability Gaps*, [GAO-17-331](#) (Washington, D.C.: Feb. 16, 2017).

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The National Defense Authorization Act for Fiscal Year 2017 (NDAA) requires DHS to provide an annual report to appropriate congressional committees, the Comptroller General, and certain other entities, containing 43 specific metrics to measure the effectiveness of border security in four domains—between POEs, at POEs, the maritime border, and with respect to aviation assets and other air and marine operations in the land domain.<sup>3</sup> The majority of the 43 metrics are counts and rates of border security activities, such as the number of detected unlawful entries between POEs and a rate that measures traffic volume at land POEs against the physical and staffing capacity at each land POE. The remaining metrics are estimates, such as the number of undetected unlawful entries, or were not specifically described. DHS issued its first report to respond to the NDAA requirement in May 2018, titled *Border Security Metrics Report*.<sup>4</sup> The NDAA also includes a provision for us, within 270 days of receipt and biennially for the following 10 years, to review and report to Congress on DHS’s report. Specifically, the provision directs us to analyze the suitability and statistical validity of the data and methodology contained in the report, and, as appropriate, include recommendations on improvements needed to the metrics and the feasibility of other suitable metrics. This report addresses the following questions:

1. To what extent has DHS reported metrics as outlined in the NDAA using quality information?
2. To what extent has DHS validated the assumptions and conveyed statistical uncertainty for its unlawful entry metrics?
3. What, if any, other metrics have been identified that may be used to measure the effectiveness of border security?

To determine the extent to which DHS reported metrics outlined in the NDAA using quality information, we first determined which of the 43

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<sup>3</sup>Pub. L. No. 114-328, div. A, tit. X, subtit. G, § 1092(g), 130 Stat. 2000, 2435 (2016) (classified at 6 U.S.C. § 223(g)).

<sup>4</sup>Department of Homeland Security, *Border Security Metrics Report* (Washington, D.C.: May 1, 2018). According to DHS officials, this report is intended to satisfy the NDAA reporting requirement for fiscal year 2017; therefore, we refer to it as DHS’s fiscal year 2017 *Border Security Metrics Report*. Any references to future DHS border security metrics reports are according to the fiscal year DHS intends them to satisfy the NDAA’s annual reporting requirement.

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metrics DHS included in its first annual report and which it did not.<sup>5</sup> For metrics DHS included, we identified the specific data sources and sets DHS used to develop them, such as administrative data collected by DHS components (e.g., data on apprehensions, POE wait times, drug seizures, and flight hours). We also interviewed officials from DHS offices and components involved in developing the metrics, including the Office of Immigration Statistics (OIS), U.S. Customs and Border Protection's (CBP) Office of Field Operations, U.S. Border Patrol (Border Patrol), and Air and Marine Operations (AMO); and the U.S. Coast Guard (Coast Guard). In these interviews we obtained information about the methodologies DHS components used to develop the metrics, including any limitations they identified and their plans to update or revise existing metrics in the future. To determine the extent to which DHS reported metrics as outlined in the NDAA, we assessed how, if at all, the metrics DHS presented and the methods DHS used to calculate the metrics were similar to, or different from, the metrics listed in the NDAA. Where we identified clear differences between the metrics DHS reported and those described in the NDAA, we reviewed documentation and obtained additional perspectives from DHS officials, as necessary, to determine the reasons for the differences.

To determine the quality of the information used for the metrics, we assessed the extent to which DHS has processes to ensure data reliability and quality. Specifically, we reviewed any of our ongoing or completed work relevant to the metrics, relevant DHS Office of Inspector General (OIG) reports, and the metrics included in DHS's Annual Performance Reports to determine which data we had previously assessed or which had been assessed by the OIG or DHS, and the results of those assessments.<sup>6</sup> For data that had not previously been assessed, we collected information from DHS to determine what processes are in place to ensure the overall reliability and quality of the

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<sup>5</sup>In its fiscal year 2017 *Border Security Metrics Report*, DHS also provided information and data on selected characteristics of recent apprehensions, at-the-border deterrence, and border crossing costs. This additional information was provided to respond to a separate NDAA requirement for DHS to issue a "State of the Border" report in which DHS was to include trends and analyses related to border security metrics, and "any other information that the Secretary determines appropriate." See 6 U.S.C. § 223(g)(3). Because this additional information was outside of the scope of the *Border Security Metrics Report* as specified in the NDAA, we did not include this additional information as part of our analysis.

<sup>6</sup>DHS, *Annual Performance Report Fiscal Years 2017-2019*, (Washington, D.C.: February 5, 2018).



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data. We reviewed this information to determine the extent to which DHS's processes are consistent with *Standards for Internal Control in the Federal Government*, good practices for verifying and validating performance information we have identified in our prior work, and DHS's *Management Directive on Information Quality*.<sup>7</sup>

To determine the extent to which DHS validated the assumptions and conveyed statistical uncertainty for its unlawful entry metrics, we first identified the metrics for which DHS utilized a statistical model (i.e., the use of a capture-recapture model to estimate the number of undetected unlawful entries). We interviewed officials from DHS Office of Immigration Statistics (OIS) and the Institute for Defense Analyses, DHS's contractor, to obtain information on the statistical model used to estimate unlawful border entry metrics, including assumptions made and how, if at all, they were validated.<sup>8</sup> We further analyzed DHS's use of the statistical model and compared it against practices for the use of statistical models outlined in the Office of Management and Budget's (OMB) *Standards and Guidelines for Statistical Surveys*.<sup>9</sup> Using OMB's standards, we identified principles and practices to determine the extent to which DHS's modeling was consistent with them and what, if any, improvements could be made. We also analyzed DHS's modelling assumptions on the composition of

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<sup>7</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#), (Washington, D.C.: September 2014); GAO, *Performance Plans: Selected Approaches for Verification and Validation of Agency Performance Information*, GGD-99-139 (Washington, D.C.: July, 30, 1999); and Department of Homeland Security, *Management Directive 8200.1: Information Quality*, March 1, 2003. In our July 1999 report, we identified good practices for verifying and validating performance information, such as communicating significant data limitations and their implications, through a review of performance plans, agency documents, and discussions with agency officials at six federal agencies (the departments of Education, Transportation, and Veterans Affairs and the Environmental Protection Agency, the National Science Foundation, and the Office of Personnel Management). The GPRA Modernization Act of 2010 includes instructive provisions for verifying and validating performance information, including communicating limitations to data in the context of the President's annual budget submission to Congress. See 31 U.S.C. §§ 1115(b)(8), 1116(c)(6), 1122(b)(5). Additionally, Office of Management and Budget (OMB) guidance on implementing the Act cites our July 1999 report as a resource for information on performance data verification and validation. See OMB, Circular No. A-11, *Preparation, Submission, and Execution of the Budget*, pt 6 (Washington, D.C.: June 2018).

<sup>8</sup>The Institute for Defense Analyses is a non-profit corporation that operates three federally-funded research and development centers to provide analyses of national security issues, particularly those requiring scientific and technical expertise.

<sup>9</sup>OMB, *Standards and Guidelines for Statistical Surveys* (Washington, D.C.: September 2006).

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the unlawful migrant population to determine the extent to which assumptions DHS made about the unlawful migrant population reflect data on individuals apprehended between POEs. We interviewed Border Patrol officials and reviewed documentation to obtain information on possible alternative approaches DHS is considering for modelling unobserved events.

To identify other metrics that may be used to measure the effectiveness of border security, we reviewed our prior work and DHS OIG reports related to border security to identify open recommendations focused on establishing border security measures in the four domains listed in the NDAA. We focused our search for prior work on reports that we and the DHS OIG issued from 2010 through 2018.<sup>10</sup>

We conducted this performance audit from May 2018 to March 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

The NDAA requires DHS to develop and implement 43 border security metrics in four domains—between POEs, at POEs, the maritime border, and air and marine security in the land environment.<sup>11</sup> Within DHS, CBP and the Coast Guard have primary responsibility for border security within these four domains. CBP and its subcomponents are to secure U.S. borders at and between POEs by preventing inadmissible people and illicit goods from entering the United States, among other responsibilities. Within CBP, the primary offices and components involved in border security are the Office of Field Operations at POEs, Border Patrol between POEs, and Air and Marine Operations for air and marine security

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<sup>10</sup>We selected this time period to include reports that address a range of border security issues and related open recommendations focused on establishing border security measures.

<sup>11</sup>See 6 U.S.C. § 223(b), (c), (d), (e). See appendix I for the metrics required by the NDAA.

in the land and maritime domains.<sup>12</sup> The Coast Guard and CBP's Air and Marine Operations share responsibility for security of the nation's maritime borders. Table 1 shows examples of border security metrics by domain and responsible DHS component.

**Table 1: Examples of Border Security Metrics by Domain and Department of Homeland Security (DHS) Component**

Domain	Relevant DHS component	Metric
Between ports of entry (POE)	U.S. Customs and Border Protection (CBP) U.S. Border Patrol	The number of apprehensions in each U.S. Border Patrol sector. <sup>a</sup>
At POEs	CBP Office of Field Operations	A secondary examination rate that measures the frequency of secondary examinations at each land POE. <sup>b</sup>
Maritime border	U.S. Coast Guard and CBP	The rate in which illicit drugs are removed by DHS maritime security components.
Air and marine security in the land domain	CBP Air and Marine Operations	The number of missions cancelled by Air and Marine Operations due to weather compared to the total planned missions.

Source: GAO analysis of DHS's fiscal year 2017 *Border Security Metrics Report*. | GAO-19-305

<sup>a</sup>U.S. Border Patrol divides responsibility for border security operations geographically among 20 sectors, each with its own sector headquarters. Each sector is further divided into varying numbers of stations each with its own area of responsibility. There are nine sectors along the southwest border, eight along the northern border, and three in the Gulf Coast and Caribbean regions.

<sup>b</sup>A secondary examination is when a CBP officer at a POE refers a traveler to a separate area, outside the primary inspection area, to complete the inspection or examination process without causing delays for other travelers. Reasons why a traveler may be referred for a secondary examination include when the CBP officer cannot verify a traveler's information or a traveler does not have all the required documentation, for example.

According to DHS officials, within DHS, two subcomponents within the Office of Strategy, Policy, and Plans were responsible for coordinating the department's effort to develop the fiscal year 2017 *Border Security Metrics Report*. A senior DHS official explained that the report was initially tasked to the Unity of Effort Integration Office, which was part of the Unity of Effort initiative started in 2014 to better understand border security efforts along the southwest border including exploring the development of border security metrics. OIS assumed responsibility for the report in

<sup>12</sup>The Office of Field Operations conducts inspections at POEs to prevent the illicit entry of travelers, cargo, merchandise, and other items. Border Patrol is responsible for securing the U.S. border between ports of entry and responding to cross-border threats. Air and Marine Operations is responsible for securing the air and maritime environments at and beyond the border.

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2017.<sup>13</sup> According to OIS officials, to prepare the report, they obtained data and information related to each NDAA metric from the administrative records of the DHS components with primary responsibilities for border security in the four domains. For example, OIS requested data and information on “turn backs” and “got aways” from Border Patrol—the lead component for the between POE domain—which records sector estimates of turn backs and got aways based on direct and indirect observations.<sup>14</sup>

Of the 43 metrics the NDAA listed for inclusion in the *Border Security Metrics Report*, the majority were counts and rates of border security activities. The remaining metrics were estimates or were not specifically described. For example, the number of apprehensions in each Border Patrol sector is a count metric. In contrast, a rate metric compares one value or number against another. For example, the wait time ratio compares the average wait times to total commercial and private vehicular traffic volumes being processed at a land POE. An estimate is used for metrics of flows or activities that are largely undetected and therefore cannot be measured directly and must be estimated, such as the number of undetected unlawful entries. A few metrics are a combination of counts or rates with an estimate. For example, the metric for total inadmissible travelers at POEs counts known inadmissible travelers that are intercepted at POEs, and also requires an estimate of how many inadmissible travelers may have successfully entered at a POE without being detected, which cannot be directly measured.<sup>15</sup> The NDAA did not specifically describe some metrics. For example, while the NDAA asked for an examination of each of the eight consequences under

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<sup>13</sup>Consistent with the Immigration and Nationality Act, as amended, OIS is the lead office within DHS for the collection and dissemination to Congress and the public of information useful in evaluating the social, economic, environmental, and demographic impact of immigration laws, to include information on the population of aliens in the United States, naturalization rates, and administrative removals, among other statutorily-enumerated information. 8 U.S.C. § 1103(d).

<sup>14</sup>According to the NDAA, the term “turn back” means an unlawful border crosser who, after making an unlawful entry into the United States, responds to U.S. enforcement efforts by returning promptly to the country from which such crosser entered. 6 U.S.C. § 223(a)(9). The term “got away” means an unlawful border crosser who is directly or indirectly observed making an unlawful entry into the United States, is not apprehended, and is not a turn back. See *id.* § 223(a)(3).

<sup>15</sup>As defined by the NDAA, this metric combines the number of inadmissible travelers interdicted and the estimated number of inadmissible travelers who successfully enter at a POE without being detected. 6 U.S.C. § 223(c)(1)(A)(i).

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the Consequence Delivery System, it did not specify how this examination was to be carried out or what it was to include.<sup>16</sup>

While many of the metrics required by the NDAA can be addressed with data from DHS's administrative records, certain metrics that rely on estimates necessitate the use of alternative methodologies and in some cases, specialized technical expertise. For example, DHS contracted with the Institute for Defense Analyses to assist with the development of a statistical model for estimating undetected unlawful entries. In its fiscal year 2017 *Border Security Metrics Report*, DHS provided information on its methodological approaches, such as how it estimated undetected unlawful entries.

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## DHS Reported Information on Most Required Metrics and Generally Used Quality Information but Did Not Identify Some Limitations

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<sup>16</sup>U.S.C. § 223(b)(1)(I), (J). The Consequence Delivery System refers to the series of consequences applied by Border Patrol in collaboration with other federal agencies to persons unlawfully entering the United States, in order to prevent unlawful border crossing recidivism. Id. at § 223(a)(2).

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DHS Reported Information  
on 35 of the 43 Required  
Metrics and Generally  
Included Elements Listed  
in the NDAA

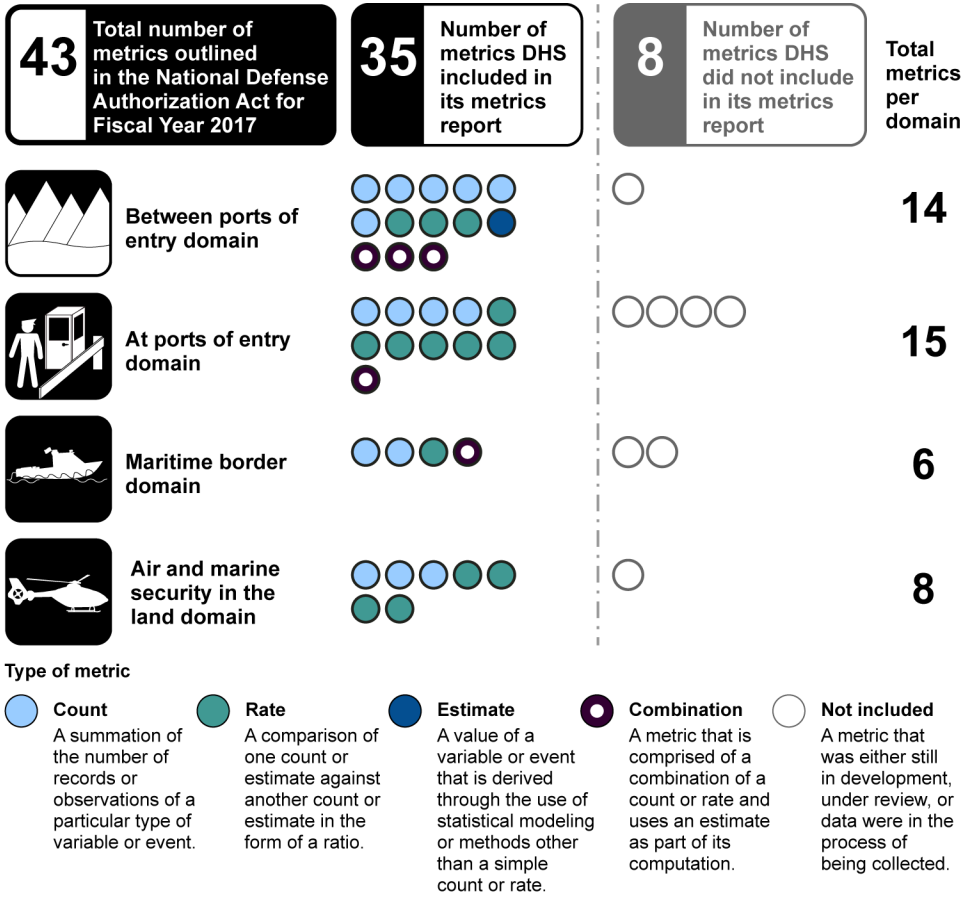
In its first *Border Security Metrics Report*, DHS reported information on 35 of the 43 metrics called for by the NDAA.<sup>17</sup> The metrics DHS provided spanned the four domains outlined in the NDAA and included a mix of counts, rates, estimates, or a combination thereof as shown in figure 1.<sup>18</sup>

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<sup>17</sup>For the purposes of this report, we refer to the 43 metrics enumerated in the NDAA by the titles provided by DHS in its fiscal year 2017 *Border Security Metrics Report*.

<sup>18</sup>For the purposes of this report we define the different metric types as follows: count—a summation of the number of records or observations of a particular type of variable or event; rate—a comparison of one count or estimate against another count or estimate in the form of a ratio; estimate—a value of a variable or event that is derived through the use of statistical modeling or methods other than a simple count or rate; and combination—a metric that is comprised of a combination of a count or rate and uses an estimate as part of its computation.

Figure 1: Number and Type of Metrics Included in the Department of Homeland Security's (DHS) Fiscal Year 2017 *Border Security Metrics Report*



Source: GAO analysis of DHS's fiscal year 2017 *Border Security Metrics Report*. | GAO-19-305

For 18 of the 35 border security metrics DHS included in its report, we found DHS generally included elements listed in the NDAA. For example, the NDAA asked for the number of detected unlawful entries between POEs, and in its report DHS provided information on the number of detected unlawful entries over a 10-year period.<sup>19</sup> As another example, the NDAA asked for the number of cargo containers at sea ports that were identified to be potentially high-risk.<sup>20</sup> In response, DHS provided

<sup>19</sup>6 U.S.C. § 223(b)(1)(A)(ii).

<sup>20</sup>See id. § 223(c)(1)(G)(i).

information on the number of potentially high-risk containers from fiscal years 2013 through 2016 and also provided contextual information about trends in the volume of such containers over time. See table 2 for more information on these examples as well as other examples of the types of information included in DHS's fiscal year 2017 *Border Security Metrics Report*.

**Table 2: Examples of Information the Department of Homeland Security (DHS) Provided in Its Fiscal Year 2017 *Border Security Metrics Report* Relative to Elements in the National Defense Authorization Act for Fiscal Year 2017 (NDAA)**

Domain	Metric and related elements described in NDAA	Example of information DHS provided in its <i>Border Security Metrics Report</i>
Between ports of entry (POEs)	"Detected unlawful entries": Number of detected unlawful entries between POEs.	DHS reported the number of detected unlawful entries over a 10-year period. These data showed that in fiscal year 2006 there were 2 million detected unlawful entries and in fiscal year 2016 there were just over 600,000, a decrease of 69 percent.
At POEs	Number of potentially "high-risk" cargo containers: A seaport scanning rate that includes the number of all cargo containers that are considered potentially "high-risk" as determined by the Executive Assistant Commissioner of the Office of Field Operations.	DHS reported that cargo shipments are identified as potentially high-risk using National Targeting Center security criteria. <sup>a</sup> According to DHS's report, the number of potentially high-risk containers identified decreased from about 90,000 in fiscal year 2013 to about 72,000 in fiscal year 2016. DHS's report also provided contextual information about the decline, explaining that refinement of the security criteria used in the risk assessment reduced the number of cargo shipments identified as potentially high-risk.
Maritime border	"Known maritime migrant flow rate": Number of undocumented migrants interdicted, identified, directly or indirectly but not interdicted, or otherwise believed to have entered or attempted to enter the United States through the maritime border.	DHS reported known maritime migrant flow in the maritime domain from fiscal years 2007 through 2016, as well as the number of migrants interdicted by U.S. Coast Guard, U.S. Customs and Border Protection, and other DHS partners during the same time period.
Air and marine security in the land domain	"AMO [Air and Marine Operations] individuals detected": Number of individuals detected by U.S. Customs and Border Protection AMO through the use of unmanned aerial systems and manned aircraft.	DHS reported the number of individuals detected by aircraft type for fiscal year 2016: 54,879 for manned aircraft and 7,908 for unmanned aircraft. The report also explained that AMO did not track data from all sensors on aircraft at the time of the report, but the department expects to be able to provide more comprehensive data in its fiscal year 2019 report.

Source: GAO analysis of DHS's fiscal year 2017 *Border Security Metrics Report*. | GAO-19-305

<sup>a</sup>The National Targeting Center is a component of U.S. Customs and Border Protection. It uses technology to identify high-risk shipments and travelers that may be connected to terrorism or other transnational crimes, such as narcotics smuggling, human trafficking, merchandise counterfeiting, and money laundering.

For some metrics, DHS also provided information in addition to the elements listed in the NDAA. For example, the NDAA described the "AMO apprehensions assisted" metric as a count of the number of



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apprehensions that were assisted by CBP's AMO through the use of unmanned aerial systems and manned aircraft.<sup>21</sup> In addition to the counts for such assists, DHS also provided data on the flight hours expended to assist with these apprehensions.

For 17 of the 35 reported metrics, we identified differences between the metric as described by the NDAA and as reported by DHS. The differences we identified generally fell into two categories:<sup>22</sup>

- **Metric differed in scope or calculation.** Some of the metrics DHS reported on differed in scope or in their calculation from what the NDAA described for reasons such as data availability, among other factors. For example, DHS's fiscal year 2017 *Border Security Metrics Report* scoped three metrics on unlawful border crossings between POEs (the "attempted unlawful border crosser apprehension rate," the "estimated undetected unlawful entries," and the "probability of detection rate") to only include data for the southwest border.<sup>23</sup> In these instances, the report noted that a methodology for estimating data on unlawful crossings for the northern border had not yet been completed but that research was underway to do so.<sup>24</sup> As an example of a difference in calculation, DHS presented the interdiction effectiveness rate for each southwest border sector as an alternative to the metric "unlawful border crossing effectiveness rate in each Border Patrol sector."<sup>25</sup> According to DHS's report, the department used the interdiction effectiveness rate because it had not yet produced and validated sector-level estimates of unlawful entries required to calculate the unlawful border crossing effectiveness rate. In its report, DHS stated it expects these estimates to be available for the 2019 report.

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<sup>21</sup>6 U.S.C. § 223(e)(1)(F).

<sup>22</sup>Metrics may fall into more than one category depending on how many differences we identified between what DHS reported and the elements listed in the NDAA.

<sup>23</sup>6 U.S.C. § 223(b)(1)(A)(i), (iii), (b)(1)(D).

<sup>24</sup>According to Border Patrol officials, the northern border has different immigration dynamics than the southern border. Officials stated that while the current emphasis of reporting is on the southwest border, efforts are underway to identify and find ways to capture data that are important and reflective of the effectiveness in addressing threats specific to the northern border.

<sup>25</sup>6 U.S.C. § 223(a)(10), (b)(1)(C). The interdiction effectiveness rate includes known got aways while the unlawful border crossing effectiveness rate includes estimated successful unlawful entries.

- **Alternative metric provided.** For the situational awareness in the maritime environment metric, DHS stated that it is in a multi-year process to develop a metric that meets the intent of the NDAA.<sup>26</sup> As an alternative, DHS instead provided data on the number of aircraft and vessel operational hours that contributed to maritime domain situational awareness.

See appendix I for additional information about any differences we identified for each metric.

The eight metrics on which DHS did not provide information spanned all four domains. In its report, DHS explained that the eight omitted metrics were either still in development, under review within the department, or officials were in the process of collecting data for them. Table 3 lists the eight metrics on which DHS did not provide information and the date DHS estimated it will report on each metric.

**Table 3: Metrics on which the Department of Homeland Security (DHS) Did Not Provide Information in Its Fiscal Year 2017 Border Security Metrics Report**

Domain	Metric DHS did not include in its fiscal year 2017 <i>Border Security Metrics Report</i>	Border Security Metrics Report in which DHS estimates reporting on metric <sup>a</sup>
Between ports of entry (POEs)	"A measurement of situational awareness achieved in each U.S. Border Patrol sector"	2020
At POEs	"Unlawful entries at POEs"	2019 <sup>b</sup>
	"Secondary examinations effectiveness rate"	Not specified
	"Potentially high-risk cargo containers scanned before arrival at a U.S. POE"	Not specified <sup>c</sup>
	"Potentially high-risk cargo containers scanned upon arrival at a U.S. POE"	Not specified <sup>c</sup>
Maritime border	"DHS maritime threat response rate"	2019
	"Intergovernmental maritime threat response rate"	2019
Air and marine security metrics in the land domain	"Actionable intelligence"	2019

Source: GAO analysis of DHS's fiscal year 2017 *Border Security Metrics Report*. | GAO-19-305

<sup>a</sup>References to future DHS border security metric reports are shown according to the fiscal year DHS intends them to satisfy the NDAA's annual reporting requirement.

<sup>b</sup>In its fiscal year 2017 *Border Security Metrics Report* DHS estimated this metric would be reported in its fiscal year 2018 report. According to DHS officials, as of December 2018, they now plan to report on this metric starting in the fiscal year 2019 report.

<sup>26</sup>Id. at § 223(d)(1)(A).

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<sup>c</sup>In its fiscal year 2017 *Border Security Metrics Report* DHS estimated this metric would be reported in its fiscal year 2018 report. According to DHS officials, as of December 2018, this metric will not be included in the fiscal year 2018 report and they did not provide an estimate as to when it will be reported.

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DHS Components Generally Have Processes to Help Ensure Reliable Data and Quality Information, but DHS Does Not Have a Systematic Process for Reviewing the Reliability of Data to Identify Limitations

In general, DHS components responsible for collecting the data used in the metrics DHS reported have processes to help ensure the reliability of the data and the quality of the information provided. DHS also identified and disclosed limitations with some of the data elements or methodologies used for the metrics in its report. However, DHS does not have a systematic process for reviewing the reliability of data to identify limitations related to the metrics, and we identified at least one additional limitation for 21 of the 35 metrics on which DHS reported where DHS did not disclose such limitations or could have been more transparent about the limitations or assumptions in its report.

Data are considered reliable when they are reasonably free from error and bias.<sup>27</sup> Quality information is derived from relevant and reliable data and is considered to be, among other things, complete, accurate, and timely.<sup>28</sup> The specific processes DHS components use to ensure data reliability vary from metric to metric. Examples of processes DHS or its components have implemented to help ensure the reliability of the data and the quality of information provided include:

- **Issuing guidance and monitoring implementation.** In September 2012, Border Patrol headquarters officials issued guidance to help provide a more consistent, standardized approach for the collection and reporting of turn back and got away data by Border Patrol sectors. Each sector is individually responsible for monitoring adherence to the guidance. According to DHS's report, command staff at Border Patrol stations ensure agents are aware of and utilize proper definitions for apprehensions, got aways, and turn backs at their respective stations and also ensure that the necessary communication takes place between and among sectors and stations to minimize double-counting when subjects cross over multiple areas of responsibility.
- **Supervisory reviews of data entries.** With regard to data on AMO vessel and aircraft missions, AMO guidance mandates that

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<sup>27</sup>[GAO-14-704G](#).

<sup>28</sup>[GAO-14-704G](#).

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supervisors perform a review of all pre- and post-mission data entries to help ensure accurate entry of mission information. AMO officials confirmed that supervisors review the data being entered into the database.<sup>29</sup> Additionally, officials said AMO data teams run monthly validation checks of data entered to check for completeness and accuracy, such as out-of-range values.

- **Using built-in electronic safeguards.** CBP's databases for entering and maintaining data elements—including travelers or passengers seeking admission, known inadmissible aliens at POEs, referrals for secondary examinations, major infractions, and private vehicles processed at a POE—have built-in processes to detect and prevent potential data entry errors.<sup>30</sup> More specifically, as an officer enters a record, the systems check for valid entries into relevant fields and provide an error message to the officer for entries that appear to be invalid (e.g., if an officer leaves a mandatory field blank or enters contradictory information such as charging an individual with a crime while also entering a request for expedited removal).<sup>31</sup> In some cases, the systems will prevent a record from being saved if any required fields are blank.
- **Comparing data against other sources.** As part of the Coast Guard's data reliability processes for data on maritime migrant interdictions used in the "known maritime migrant flow rate" metric, Coast Guard officials said that analysts cross-check the data entered into their database with other Coast Guard reporting documents, such as internal spreadsheets, to ensure accuracy.<sup>32</sup>
- **Independent assessment of performance measure data.** Some border security metrics are similar to, or use the same data elements

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<sup>29</sup>These data are entered into the Tasking, Operations, and Management System database. This database consolidates the data required for AMO maritime and aviation operations, including mission planning; mission execution; and processing of information on apprehensions, assaults, and got aways.

<sup>30</sup>These data are entered into the TECS (not an acronym), Consolidated Secondary Inspection System, and Secure Integrated Government Mainframe Access databases. A major infraction is an arrest at a POE, including arrests related to terrorism, drugs, criminal aliens, and currency, among other things.

<sup>31</sup>Under expedited removal, a DHS officer may, subject to statutory criteria, order arriving and other designated foreign nationals removed from the United States without a formal removal proceeding.

<sup>32</sup>These data are entered into the Coast Guard's Marine Information for Safety and Law Enforcement database.

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as, performance measures DHS reports annually in response to the Government Performance and Results Act Modernization Act (GPRAMA) of 2010.<sup>33</sup> For those performance measures, DHS annually assesses a subset of measures and their data for completeness and reliability using independent review teams. For example, in May 2017 an independent review team assessed the “migrant interdiction effectiveness in the maritime environment” performance measure, which uses the same data as the border security metric, “known maritime migrant flow rate.” The review team found the measure to be complete and reliable and the data to be of good quality overall, but also recommended that the Coast Guard and DHS continue work on an improved database to enhance the consistency of data collection, among other things.

In addition to the components having processes to help ensure the reliability of the data and the quality of the information used in the report, DHS took steps to be transparent in its presentation of the metrics by identifying and disclosing known limitations with some of the data elements or methodologies used for the metrics in its report. Communicating the extent to which such limitations exist and their potential impact is important to help facilitate the appropriate use and understanding of the data and the metrics.<sup>34</sup> DHS identified and disclosed limitations related to the potential for misclassification of observations, the potential for cases not being entered or recorded correctly, and methodological limitations, among other things. For example, one of the key limitations DHS’s report identified for the data on turn backs and got aways is that they are based on potentially subjective observations of agents who have to make a determination on how to classify them based on what they observed or the available evidence (e.g., tracks, sensor activations, interviews with apprehended subjects, camera views, etc.). Further, DHS’s report explained that agents may face challenges in making that determination because some unlawful border crossers may enter the United States to drop off drug loads or to act as decoys to lure

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<sup>33</sup>Pub. L. No. 111-352, 124 Stat. 3866 (2011). GPRAMA updated the Government Performance and Results Act of 1993, Pub. L. No. 103-62, 107 Stat. 285 (1993). Examples of GPRAMA performance measures that are similar to or use the same data elements used by one or more border security metric include the percent of inbound cargo identified by CBP as potentially high-risk that is assessed or scanned prior to departure or at arrival at a U.S. POE, percent of people apprehended multiple times along the southwest border, rate of interdiction effectiveness along the southwest border between POEs, and migrant interdiction effectiveness in the maritime environment.

<sup>34</sup>GGD-99-139.

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agents away from a certain area and then return to Mexico, and therefore may be misidentified as turn backs, for example. As another example, DHS identified limitations due to cases not being entered or recorded correctly. For the “known maritime migrant flow rate” metric, DHS used data on the total number of maritime migrants interdicted. In its report, DHS explained that a potential limitation of this data element is that the Coast Guard relies on international and domestic partners to report their interdictions for compilation in its database. Consequently, the accuracy and completeness of the data depend on whether those reports are made by those partners and the accuracy of their reports. See appendix I for additional information about the limitations identified for each metric.

Even as DHS identified and disclosed limitations related to some of its metrics, we identified at least one additional limitation for 21 of the 35 metrics on which DHS reported where DHS did not disclose such limitations or could have been more transparent about the limitations in its report. Examples of such instances include:

- **Potential for cases not being entered or recorded correctly.** In our previous work we found that mission data for unmanned aerial systems were inconsistently collected across operation locations.<sup>35</sup> Specifically, in February 2017 we reported that there were instances where no assist information was recorded in AMO’s data system even though such assets participated in investigations and operations. Because AMO’s data may not reflect all asset assists, we recommended that AMO update and maintain guidance for recording mission information in its data collection system and provide training to users of the system.<sup>36</sup> For its fiscal year 2017 *Border Security Metrics Report*, DHS used asset assists data in metrics such as the “AMO individuals detected,” “AMO apprehensions assisted,” and “illicit

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<sup>35</sup>GAO, *Border Security: Additional Actions Needed to Strengthen Collection of Unmanned Aerial Systems and Aerostats Data*, [GAO-17-152](#) (Washington, D.C.: Feb. 16, 2017). CBP uses the term “unmanned aircraft systems” for these assets. An unmanned aerial system is composed of a remotely-piloted aircraft, a ground control station, a digital network, and other ground support equipment and personnel required to operate and maintain the system. An example of such a system is the Predator B which is equipped with video and radar surveillance technology to conduct border security efforts.

<sup>36</sup>DHS implemented these recommendations in July 2018, but this limitation is relevant because the data presented in DHS’s fiscal year 2017 *Border Security Metrics Report* were collected prior to the implementation of the recommendations.

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drug seizures assisted by AMO,” but did not disclose this limitation in its report.<sup>37</sup>

- **Potential for data to be changed over time.** Border Patrol officials told us that data on the apprehension of unaccompanied alien children may change over time because original apprehension records from a shared database have, in some instances, been updated by staff from U.S. Immigration and Customs Enforcement (ICE) Enforcement and Removal Operations (ERO).<sup>38</sup> Officials said that in January 2015 they noticed that ERO staff were inadvertently overwriting Border Patrol’s original data entries about the status of apprehended children when they made updates to those children’s records. For example, if a child was unaccompanied at the time of his or her apprehension and was recorded as such by Border Patrol in the initial record entry, ERO may have changed the “unaccompanied” status in the system after they matched the child with a family member or sponsor. As a result, data may not be reconcilable with initial apprehension counts over time.<sup>39</sup>
- **DHS did not fully disclose limitations for some metrics.** We identified instances where DHS could improve transparency about the assumptions or limitations of the data presented in its report. For example, in 2014 Border Patrol implemented a standard, southwest border-wide methodology to improve reporting of turn backs and got aways.<sup>40</sup> While DHS made mention of this change in the text of the report, the data for these metrics are presented in tables without any table notes or disclosures within the table about this change. Further, DHS’s report does not discuss how the change may affect comparability of the data. Consequently, a reader may not be aware that data for before 2014 in a table are not necessarily comparable to the data for 2014 and after in the same table.

Without a comprehensive identification of the limitations of the metrics and their associated data, and without an adequate disclosure of those

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<sup>37</sup>6 U.S.C. § 223(e)(1)(E), (F), (G).

<sup>38</sup>An unaccompanied alien child is one under 18 years old with no lawful immigration status, and no parent present and available in the United States to provide care and physical custody. 6 U.S.C. § 279(g)(2).

<sup>39</sup>This limitation is relevant because the time period for the data on apprehensions of unaccompanied alien children that DHS provided in its fiscal year 2017 *Border Security Metrics Report* runs from fiscal year 2008 through fiscal year 2016.

<sup>40</sup>6 U.S.C. § 223(a)(3), (9), (b)(1)(A)(iv), (v).

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limitations, the value of DHS's report as a source of information to Congress, policymakers, and the public may be diminished. The metrics in the report were specifically identified and requested by Congress in the NDAA, and provide Congress with important information about the outputs and outcomes of DHS's border security policies and investments that could be used to inform decision-making. However, those reading the report may not be aware of important contextual information because DHS did not identify and disclose some limitations, thereby creating the potential for the data to be misinterpreted.

According to DHS officials who prepared the report, while they took steps to identify methodological limitations of the metrics, no process currently exists to systematically review the reliability of operational data used for public reporting purposes, such as in the metrics report. Specifically, DHS officials within OIS told us that while they were responsible for leading and managing the preparation of the report, they largely relied on the DHS components from which they collected the data to assess the data's reliability and communicate identified limitations. OIS officials explained that many of the data elements used, such as those from AMO or the Coast Guard, were ones with which they were not familiar or had not worked with previously in their area of immigration statistics. OIS officials also noted that in some cases, the data had previously been used in performance measures or had been collected and tracked for several years, so they trusted the components' processes for ensuring their reliability and identifying limitations, but reviewed the data provided where possible and consulted with the components as needed. However, OIS officials said that while they included as much information in the report as was known about identified limitations with the existing operational data, no additional effort was made to systematically review the underlying reliability of the data to comprehensively identify limitations that should be acknowledged when publicly reported because no department-wide process exists to do so.

*Standards for Internal Control in the Federal Government* state that management officials should evaluate data sources for reliability and communicate quality information, including relevant data from reliable sources, to achieve an agency's objectives.<sup>41</sup> The quality information can then be used by agency management and external stakeholders such as policymakers, to make informed decisions and evaluate performance,

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<sup>41</sup> [GAO-14-704G](#).



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among other things. Further, DHS's *Management Directive on Information Quality* states that data and information disseminated by the department should, among other things, have full, accurate, transparent documentation, and error sources affecting data quality should be identified and disclosed to users.<sup>42</sup> Additionally, our previous work on approaches for verifying and validating performance information found that communicating significant data limitations and their implications allows stakeholders to judge the data's credibility for their intended use and to use the data in appropriate ways.<sup>43</sup> By developing and implementing a process to systematically review the reliability of the data or consider the results of assessments components have completed, comprehensively identify any limitations, and communicate the data or methodological limitations with the metrics, DHS would improve the quality of the information available to Congress, DHS leadership, and the public. Doing so would also facilitate a better understanding and appropriate interpretation and use of the data in the context of the *Border Security Metrics Report*, thereby enhancing the report's value as a source of information for future decision-making.

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## DHS's Model to Estimate Unlawful Border Entries Uses Assumptions that Have Not Been Validated and Does Not Convey Uncertainty of Estimates

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<sup>42</sup>Department of Homeland Security, *Management Directive 8200.1: Information Quality*, March 1, 2003.

<sup>43</sup>[GAO/GGD-99-139](#).

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## DHS Used a Statistical Model to Estimate Unlawful Border Entries for Three Metrics

Based upon statistical modelling, DHS developed a Model-based Apprehension Rate to calculate the total number of unlawful border entries between land POEs, including entries both detected by Border Patrol and “estimated undetected unlawful entries.” DHS reported that in fiscal year 2016 there were about 624,000 detected entries (which include apprehensions, turn-backs, and got aways) and estimated that there were about 62,000 undetected unlawful entries. DHS also used the Model-based Apprehension Rate to develop two other metrics in the fiscal year 2017 *Border Security Metrics Report*:

- (1) A “probability of detection rate,” which is the estimated proportion of the number of detected unlawful border entries to the total number of unlawful entries between land POEs. DHS estimated that in fiscal year 2016, 91 percent of unlawful border crossers were detected and 9 percent were not detected.
- (2) The “attempted unlawful border crosser apprehension rate,” which is the estimated proportion of unlawful border entrants apprehended by Border Patrol to the total number of unlawful entrants between land POEs. DHS estimated that in fiscal year 2016, 65 percent of individuals were apprehended by Border Patrol and 35 percent of individuals attempting an unlawful border entry either got away or entered the United States undetected.

DHS based its statistical model upon research conducted by the Institute for Defense Analyses that leveraged long-standing research using capture-recapture models.<sup>44</sup> Originally developed and utilized in biological and ecological sciences, capture-recapture models have been applied to other disciplines, including social science.<sup>45</sup> According to the Institute for Defense Analyses, capture-recapture models have been the core

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<sup>44</sup>In its report, DHS refers to this methodology as the “repeated trials model” methodology. DHS contracted with the Institute for Defense Analyses to help the department produce a mathematical estimate of illegal entries.

<sup>45</sup>Anne Chao, “An Overview of Closed Capture–Recapture Models,” *Journal of Agricultural, Biological, and Environmental Statistics*, vol. 6, no.158 (2001).

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approach for academic efforts to model the process of unlawful entry into the United States across land borders for several decades.<sup>46</sup>

To develop its statistical model, DHS used a capture-recapture methodology to calculate a probability of apprehension by counting the number of unlawful border crossers that were apprehended multiple times. At a high-level, capture-recapture involves taking an initial sample of the population of interest, in this case individuals attempting to cross the border unlawfully. Then, separately, a second, independent sample of the same population is taken. The samples are then compared to determine the number of individuals who appear in both samples. When the number of individuals who appear in both samples (e.g., individuals who have been apprehended twice) is low, it can be inferred that the overall population of interest (e.g., total unlawful border crossers) is much larger than the total number of individuals in the two samples. On the other hand, if the recapture rate is high, then it can be inferred that the overall population of interest is not much larger than the total number of individuals in the two samples.

In the context of unlawful border crossing, when an individual's first attempt at unlawfully crossing the border is successful, the individual enters the United States and no apprehension is made. However, if an individual is apprehended, Border Patrol records an apprehension of this individual in a DHS data system and the individual is potentially subject to consequences for entering unlawfully, such as administrative enforcement and removal, criminal prosecution, or being barred from legally entering the United States in the future. The individual is then returned to his or her home country, where the individual can then choose whether or not to make another attempt to unlawfully cross the border.<sup>47</sup> During a second attempt to unlawfully cross the border, the individual faces the same possible outcomes (enter the United States unlawfully or

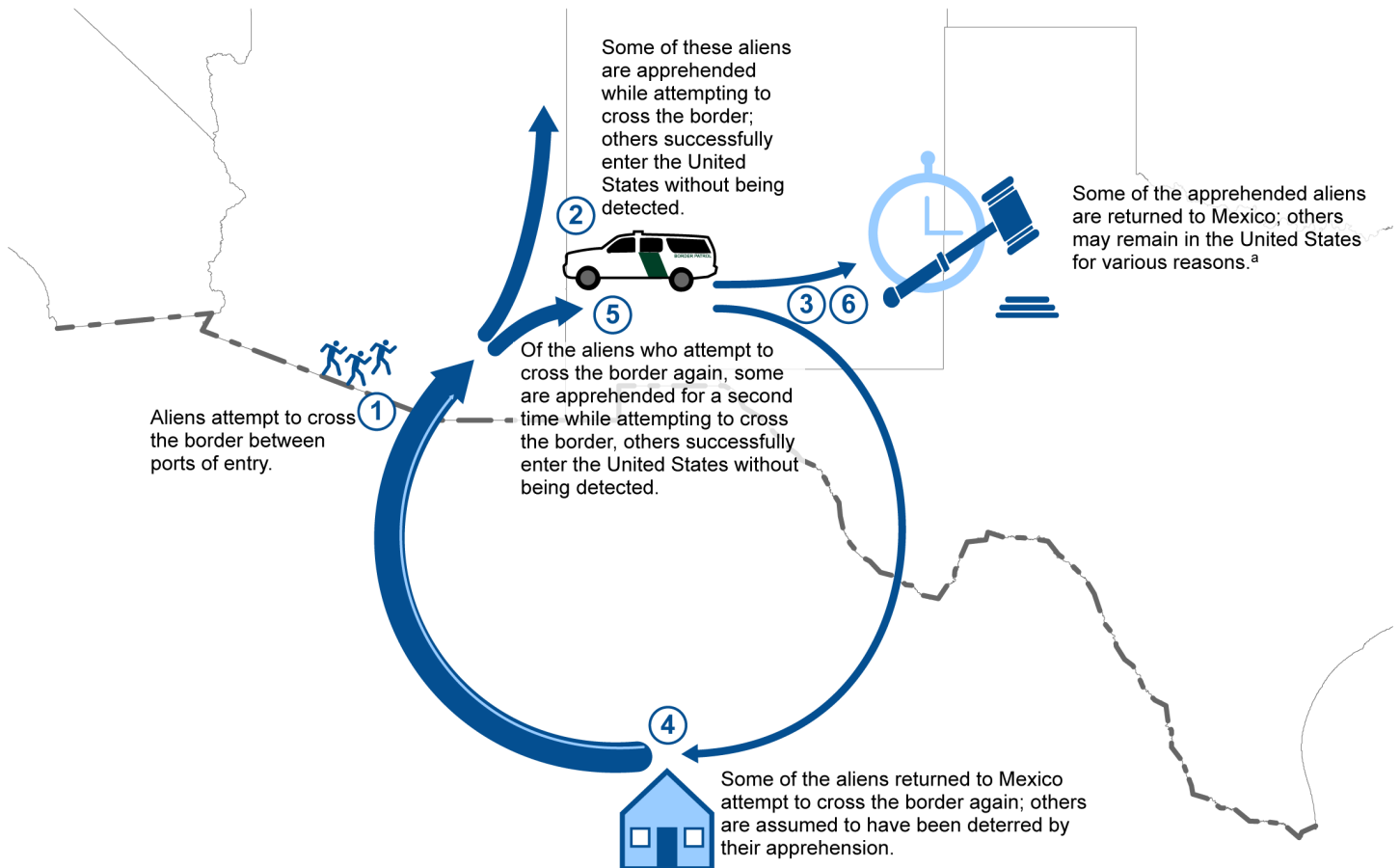
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<sup>46</sup>According to the Institute for Defense Analyses, the capture-recapture methodology has been used to estimate unobserved flows at the border since being published in 1990 by Thomas Espenshade, who used data from the period 1977-1988 and relied on estimates by Border Patrol agents of the proportion of people whom they caught who were recognized as "repeaters" who had recently been caught in the same area. See Thomas Espenshade, "Undocumented Migration to the United States: Evidence from a Repeated Trials Model," in *Undocumented Migration to the United States: IRCA and the Experience of the 1980s*, ed. Frank D. Bean, Barry Edmonston, and Jeffrey S. Passel (Washington, DC: The Urban Institute Press, 1990), 159-181).

<sup>47</sup>If an individual chooses not to make another attempt to unlawfully cross the border, the statistical model makes no further assumption about the individual's actions.

apprehension by Border Patrol). Figure 2 provides the framework for DHS's Model-based Apprehension Rate.

**Figure 2: Framework for Department of Homeland Security's (DHS) Model-based Apprehension Rate**



Source: GAO analysis of DHS's Model-based Apprehension Rate. | GAO-19-305

<sup>a</sup>These reasons include awaiting removal to their home country, resolution of immigration proceedings, resolution of criminal proceedings, or serving terms of imprisonment.

DHS modified the traditional capture-recapture methodology by calculating a deterrence rate of 60 percent in fiscal year 2016 to account for individuals who choose not to make another unlawful border crossing

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attempt.<sup>48</sup> The deterrence rate accounts for an individual being deterred from attempting to unlawfully cross the border again; that is, DHS assumed that some percentage of apprehended individuals, once returned to their country, will remain in their home country. DHS calculated the deterrence rate based upon a survey of Mexican individuals who were apprehended and returned to the border region of Mexico by U.S. immigration authorities.<sup>49</sup> DHS assumed the remaining 40 percent of individuals who were apprehended and removed to their home country in fiscal year 2016 remain undeterred and will attempt to unlawfully cross the border again.

Historically, DHS (and its predecessor the Immigration and Naturalization Service) did not use statistical models to calculate an apprehension rate but relied on apprehensions as a proxy measure for all unlawful entries (both observed and unobserved) between POEs. DHS also included in its report information on the apprehension rate using this method. Specifically, DHS also calculated an Observational Apprehension Rate based on direct observations (unlawful border crossers observed by Border Patrol) and indirect observations (residual evidence of a border crosser, i.e., footprints) of attempted unlawful border crossers. Using the observational apprehension rate, DHS calculated that in fiscal year 2016, it apprehended 79 percent of unlawful border crossers.

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### DHS's Statistical Model Uses Assumptions about Border Crossers that Have Not Been Validated and May Affect Results

DHS made assumptions about border crossers to develop its statistical model and described these assumptions in its report; however, DHS did not validate some of these assumptions or determine how they potentially could affect the accuracy of the Model-based Apprehension Rate through the use of sensitivity analyses.

More specifically, DHS's model incorporates several assumptions related to border crossers. Among others, these assumptions include:

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<sup>48</sup>Without accounting for deterrence, capture-recapture assumes that unlawful border crossers are never deterred at the border and thus keep trying to enter until they are successful.

<sup>49</sup>The survey, Encuesta sobre Migración en las Frontera Norte de México, is conducted by a Mexican research center, El Colegio de la Frontera Norte. The survey website can be accessed at <http://www.colef.mx/emif/>.

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- the rate at which individuals will be deterred from crossing again remains the same, regardless of the number of attempts an individual has made;
  - individuals who indicate an intent to stay near the U.S.-Mexico border will attempt re-entry;
  - a single apprehension rate applies to diverse groups of border crossers, regardless of their nationality or the number of attempts an individual has made; and
  - certain individuals will not evade Border Patrol.

However, the validity of some of these assumptions—which affect the Model-based Apprehension Rate—is uncertain. For example, DHS’s model estimates the rate at which a diverse group of border crossers attempting to evade detection will be apprehended by Border Patrol. This group includes both Mexicans and non-Mexicans and individuals who attempt to cross again after varying amounts of time. Despite this diversity, the model assumes that all crossers have the same chance of apprehension on each attempt to cross the border. This assumption allows DHS to apply the estimated apprehension rate developed based on a sample of Mexicans re-apprehended within 90 days—the group for whom relevant data exist—to a broader population of individuals regardless of the number of attempts the border crossers have made or their nationality.<sup>50</sup> However, DHS did not make efforts to determine the extent to which an apprehension rate based on Mexican citizens re-attempting entry within 90 days would reflect apprehension rates for non-Mexicans and individuals crossing again after longer periods.

Additionally, DHS assumes that the apprehension rate never varies between an individual’s attempts at crossing the border. For example, DHS assumes that an individual making a first attempt at crossing the border faces the same odds of apprehension as an individual making a

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<sup>50</sup>To estimate the overall Model-based Apprehension Rate, DHS uses a survey of Mexicans apprehended and removed from the United States, which asks about their intentions to return to the United States within the next 7 to 90 days. These data allow DHS to estimate a rate at which individuals are deterred from crossing again. The model uses this estimated deterrence rate to estimate the chance that a restricted sample of Mexicans re-apprehended within 90 days will be apprehended again on a subsequent crossing attempt. Finally, the model applies this apprehension rate to a larger population of individuals whom the model identifies as repeatedly trying to cross the border undetected, in order to estimate the overall Model-based Apprehension Rate. This larger group includes Mexicans and non-Mexicans, with varying time periods between attempts.

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fourth or fifth attempt at crossing the border. However, DHS has not explored the possibility that, for example, individuals may gain experience and knowledge from border-crossing attempts that could help them better evade Border Patrol on subsequent attempts.

Further, DHS's model assumes that certain individuals unlawfully crossing the border, such as those seeking asylum, will not evade apprehension and will turn themselves in to Border Patrol. Specifically, in addition to individuals who ultimately do seek asylum, DHS also includes within this group and applies this assumption to individuals apprehended as a family unit and unaccompanied minors. Under this assumption, 100 percent of such individuals are apprehended. According to DHS's fiscal year 2017 *Border Security Metrics Report*, these individuals have historically been released into the United States with a Notice to Appear in immigration court for legal proceedings on a future date, rather than being subject to immediate DHS enforcement consequences such as voluntary return.<sup>51</sup> Therefore, DHS assumes that 100 percent of these individuals will self-present to Border Patrol because, in doing so, they are able to claim asylum or other protection and potentially remain in the United States.

However, representatives from the Institute for Defense Analysis stated that while anecdotally self-presenting rates of these individuals are high, more rigorous analysis is needed to accurately estimate a self-presentation rate. For example, it is possible that not all families crossing the border unlawfully may seek to self-present to Border Patrol; some may attempt to evade capture and enter the United States undetected. In this case, DHS may be underestimating the number of individuals who unlawfully cross the border and enter the United States by assuming 100 percent of these individuals will self-present to Border Patrol agents. Additionally, DHS noted in its fiscal year 2017 *Border Security Metrics Report* that this assumption does not reflect the actual behavior of all border crossers in this group. OIS officials stated that they based this assumption on interviews with Border Patrol agents but had not done formal or quantitative analysis to support this assumption. Further, OIS officials stated that they did not have a strong alternative assumption to use instead and therefore assumed that 100 percent of individuals within this group are apprehended.

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<sup>51</sup>Voluntary return allows individuals to voluntarily depart from the United States in lieu of being subject to formal removal or expedited removal proceedings, thereby effectively withdrawing as an applicant for admission.

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DHS described these assumptions in its report but did not provide quantitative information on the extent to which these assumptions affected the Model-based Apprehension Rate through the use of sensitivity analyses. Sensitivity analyses help to convey the extent to which changing the values of variables, assumptions, data, or other input affects statistical estimates. For example, sensitivity analyses could provide information on how different assumptions about unlawful border crossers' behavior and other inputs to the statistical model could have affected the Model-based Apprehension Rate. OIS officials stated that while they had started to run sensitivity analyses by modifying certain assumptions, they had not completed the analysis and did not include results of the sensitivity analyses in the report.

The Office of Management and Budget's (OMB) statistical standards for federal agencies include providing the results of sensitivity analyses for key methodological assumptions to ensure that these assumptions do not unduly affect the results of the model.<sup>52</sup> By including the results of sensitivity analyses in its *Border Security Metrics Report*, DHS would allow Congress and the public to better understand the potential limitations associated with its model and make independent assessments on its accuracy.

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### DHS Did Not Convey the Statistical Uncertainty of Its Estimated Apprehension Rate

DHS used a statistical model to develop the Model-based Apprehension Rate but did not provide information on the level of uncertainty related to this estimate. Rather, the fiscal year 2017 *DHS Border Security Metrics Report* provided a single rate that does not fully convey the difficulty and uncertainty of estimating partially unobserved metrics, such as unlawful entries and the probability of detection. Specifically, using the Model-based Apprehension rate, DHS estimated that 65 percent of unlawful border crossers were apprehended in fiscal year 2016, and the remaining 35 percent entered the United States. However, like all statistical models, DHS's estimate is based upon a limited sample of data and may be affected by random variation, meaning that DHS does not have complete certainty that its rate is accurate. DHS included a discussion of limitations in the report but did not quantify its degree of uncertainty.

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<sup>52</sup>OMB, *Standards and Guidelines for Statistical Surveys* (Washington, D.C.: September 2006).



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According to the OMB statistical standards for federal agencies, possible variation in estimates should be noted, such as by reporting the range of each estimate.<sup>53</sup> Measures of statistical uncertainty, such as margins of error or confidence intervals, help to convey the amount by which estimates might vary due to randomness in the data and allows consumers of the estimates to evaluate their accuracy.<sup>54</sup>

OIS officials stated that they agree that providing measures of statistical uncertainty would help Congress and the public better understand the Model-based Apprehension Rate to evaluate border security. Officials told us that the office had begun to develop measures of statistical uncertainty but did not complete this effort because the staff member who was working on the analyses recently left the office. Further, OIS officials stated that they were unsure when they would be able to provide measures of statistical uncertainty in future reports. Including measures of statistical uncertainty in future reports would allow Congress, policy makers, and the public to more fully evaluate the extent to which the metrics that use the Model-based Apprehension Rate are valid. Further, while DHS may ultimately adopt a new, simulation-based model in the future, described later in this report, it plans to use the current Model-based Apprehension Rate for estimates in its *Border Security Metrics Report* for the foreseeable future. Therefore, providing this additional information about the estimates would allow DHS to more accurately convey how limitations in available data and methods could affect the results and provide more useful information about migration and border enforcement. Additionally, to the extent DHS adopts a new estimating metric, that estimate may have some level of uncertainty associated with it.

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<sup>53</sup>OMB, *Standards and Guidelines for Statistical Surveys* (Washington, D.C.: September 2006).

<sup>54</sup>A margin of error (or confidence interval) provides the range around a statistical estimate where the true value is likely to exist. If an estimate's margin of error is small, the estimate has a lower amount of random error and is therefore more precise and known with greater certainty.

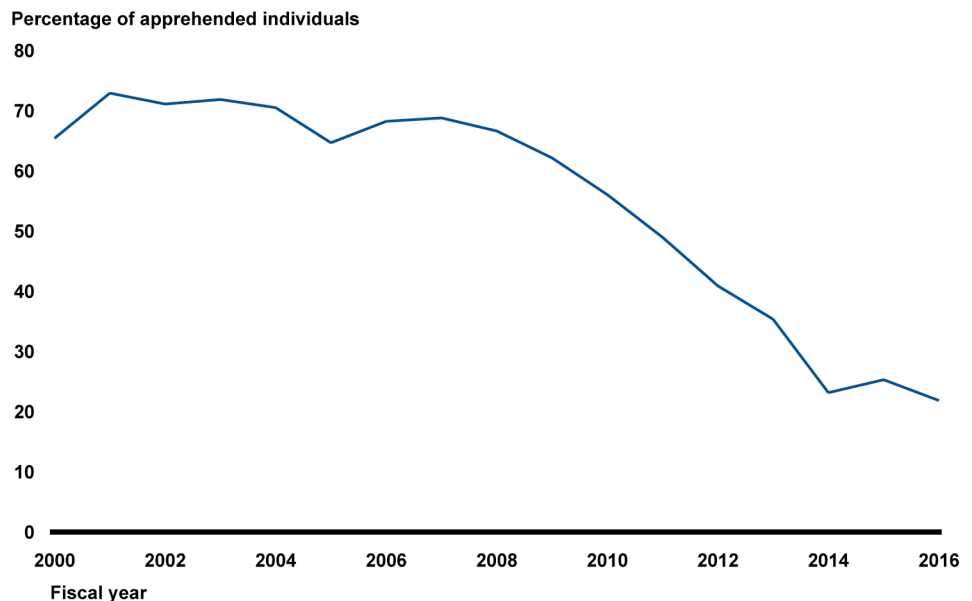
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## DHS Is Developing Another Model to Better Reflect Unlawful Border Entries at the Border

DHS is developing another model because its current statistical model may not sufficiently reflect conditions at the southwest border. Specifically, DHS's current statistical model does not fully account for the changing population of unlawful border crossers. The capture-recapture methodology, which underlies the Model-based Apprehension Rate, was developed to sample homogenous populations that behave in set, uniform ways. However, those crossing the border have become increasingly diverse in recent years. Our analysis of DHS data used to develop the Model-based Apprehension Rate shows that the number of unlawful border crossers whose characteristics and behavior are best reflected in the statistical model has declined. For example, our analysis illustrated that the population that conforms best to the model's assumptions—adult Mexicans travelling without dependents who do not plan to claim asylum and who are returned to Mexico in a short amount of time—has fallen from over 60 percent of apprehensions in fiscal year 2000 to less than 25 percent of apprehensions in 2016, as shown in figure 3.

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**Figure 3: Apprehensions Reflected in the Department of Homeland Security's Statistical Analysis to Estimate Undetected Unlawful Entries**

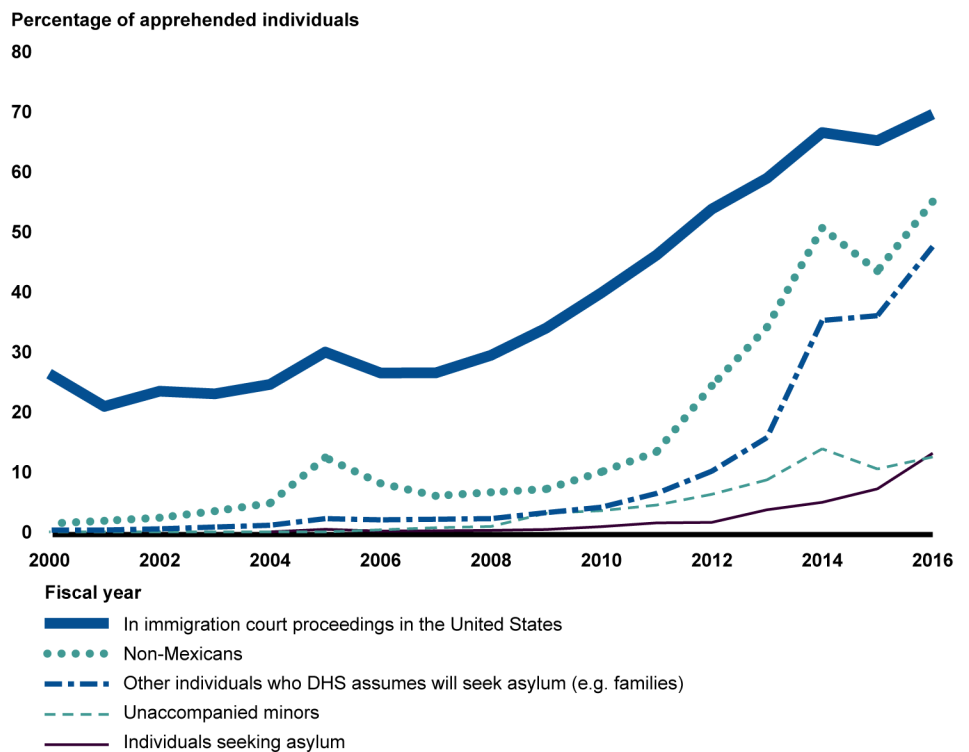


Source: GAO analysis of Department of Homeland Security data. | GAO-19-305

Note: These apprehensions include apprehensions of adult Mexicans travelling without dependents who do not plan to claim asylum and who are returned to Mexico in a short amount of time.

Conversely, the number of individuals who are excluded from the statistical model such as non-Mexicans, and individuals whose behavior may not reflect the model's assumptions, such as asylum-seekers or those who have not departed the United States (e.g., because they are awaiting immigration court proceedings) have increased over time, as shown in figure 4. For example, the percentage of individuals apprehended at the border who are excluded from the model because they await immigration court proceedings increased from 26 percent in fiscal year 2000 to almost 70 percent in fiscal year 2016.<sup>55</sup>

**Figure 4: Individuals Apprehended at the Border Who Are Not Included in the Department of Homeland Security's (DHS) Model-based Apprehension Rate**



Source: GAO analysis of Department of Homeland Security data. | GAO-19-305

<sup>55</sup>We previously found that case backlogs at the nation's 58 immigration courts have grown and that, as a result of these backlogs, some immigration courts were scheduling hearings several years in the future. See GAO, *Immigration Courts: Actions Needed to Reduce Case Backlog and Address Long-Standing Management and Operational Challenges*, [GAO-17-438](#) (Washington, D.C.: June 1, 2017).

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DHS acknowledged these trends in its fiscal year 2017 *Border Security Metrics Report* and noted them as a limitation to the effectiveness of its model. OIS officials further noted that some of these limitations are difficult to address within the bounds of the statistical model. For example, to properly account for non-Mexicans, OIS officials stated that they would need information on the rate at which non-Mexicans are deterred from crossing the border. However, it would be difficult and costly to obtain this information through the use of a survey and real-world data does not already exist, according to OIS officials.

To help address limitations of its current statistical model, DHS has invested in another research project to estimate the number of unlawful border crossers between land POEs, including unknown border entries. Border Patrol contracted with Johns Hopkins Applied Physics Laboratory to undertake a project that aims to use a combination of statistical modeling and data from sensors along the border to estimate the total number of unlawful border entries between land POEs, including entries both detected by Border Patrol and those not detected by Border Patrol.<sup>56</sup> According to project documentation we reviewed, the project plans to leverage the CBP Tactical Simulation, an agent-based simulation of tactical border operations.<sup>57</sup> CBP Tactical Simulation incorporates information on terrain at the border based on geographic information systems and sensors along with probability models that reflect how Border Patrol agents and unlawful border crossers behave in given circumstances.

Border Patrol and OIS officials told us that this project would be more adaptable to changing border conditions and could help the agency address limitations associated with the Model-based Apprehension rate. Specifically, according to OIS officials, a simulation-based estimate would

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<sup>56</sup>Sensors include infrared and daylight camera systems, radar, and unattended ground sensors. The simulation-based model takes into account the line of sight from the sensor, the field of view of the sensor, and the probability of detection based on sensor type (e.g. type of radar or camera), among other things.

<sup>57</sup>Agent-based models are computer models that attempt to capture the behavior of individuals within an environment. An agent is programmed to behave and interact with other agents and the environment in certain ways. Agent-based models may be particularly useful when interactions and behaviors are known or suspected to exist but cannot be observed easily in the real world. Agent-based modeling differs from traditional, regression-based methods in that it allows for the exploration of a greater array of behaviors and interactions.

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rely upon fewer assumptions about the types of individuals who unlawfully cross the border as compared to the current Model-based Apprehension rate. However, Border Patrol officials noted that estimates of unobservable phenomena, such as unobserved border entries, always face some limitations in their accuracy and that the new model may still rely upon samples of data that would have associated uncertainty as well as assumptions that would need to be validated. Ultimately, though, Border Patrol officials stated that the simulation-based model may be an improvement upon the current Model-based Apprehension rate.

Border Patrol officials stated that the first iteration of the model would be presented to Border Patrol leadership for their review at the end of fiscal year 2019 and if at that time Border Patrol leadership approves the model, the earliest the simulation-based estimate could potentially be incorporated into the DHS *Border Security Metrics Report* would be for fiscal year 2020. Exploring alternative models is a positive step for DHS, however given that the project is in the early stages, it is too early to tell if it will be able to address the limitations we identified associated with the current model.

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## Our Prior Work Has Identified Other Metrics DHS Could Use to Help Measure the Effectiveness of Border Security

In addition to the NDAA metrics, we have identified other metrics that DHS could use to help measure the effectiveness of border security.<sup>58</sup> In particular, based on the findings from our previous reviews of border security programs and efforts, we have recommended that DHS use metrics that are relevant to each of the four domains listed in the NDAA—between POEs, at POEs, the maritime border, and for air and marine security in the land domain.<sup>59</sup> For example,

- **Between POEs domain.** In February 2017, we reported on the use of border fencing along the southwest border and found that CBP collects data that could help provide insight into how border fencing contributes to border security operations, including the location of illegal entries.<sup>60</sup> For example, we found that CBP collects data it could potentially use to determine the extent to which border fencing diverts illegal entrants into more rural and remote environments, and border fencing's impact, if any, on apprehension rates over time. However, CBP had not developed metrics that systematically use these data to assess the contributions of border fencing to its mission. To better position CBP to make resource allocation decisions with the best information available to inform competing mission priorities and investments, we recommended that the Chief of the Border Patrol develop metrics to assess the contributions of pedestrian and vehicle

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<sup>58</sup>In its fiscal year 2017 *Border Security Metrics Report*, DHS also provided information and data on three additional metrics that were not specifically called for by the NDAA: 1) selected characteristics of recent apprehensions, 2) at-the-border deterrence, and 3) border-crossing costs. This additional information was provided to respond to a separate NDAA requirement for DHS to issue a "State of the Border" report in which DHS was to include trends and analyses related to border security metrics, and "any other information that the Secretary determines appropriate." See 6 U.S.C. § 223(g)(3).

<sup>59</sup>As part of our analysis, we also reviewed reports by the DHS OIG related to border security to identify any open recommendations it has made that focused on establishing metrics that DHS could use to help measure the effectiveness of border security. As of January 2019, DHS had implemented the DHS OIG recommendation we identified. In 2017 the DHS OIG conducted a review of the effectiveness of information technology systems to support CBP's border security objective of preventing the entry of inadmissible aliens and found that CBP's information technology systems and infrastructure did not fully support this objective. As a result, the DHS OIG recommended that CBP assess the need for performance measures to monitor, evaluate, and ensure the availability of primary traveler screening applications from CBP personnel's perspective at POEs. According to the DHS OIG, as of June 2018, CBP had taken steps to implement this recommendation and the DHS OIG closed the recommendation accordingly. See DHS, OIG, *CBP's IT Systems and Infrastructure Did Not Fully Support Border Security Operations*, OIG-17-114 (Washington, D.C.: Sept. 28, 2017).

<sup>60</sup>[GAO-17-331](#).

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fencing to border security along the southwest border using CBP data. DHS agreed with the recommendation and stated that it planned to develop metrics for use in its operational control framework for southwest border security operations. As of October 2018, DHS stated that the department planned to test the metrics and implement them in the framework by September 2019.

- **At POEs domain.** In July 2017, we reported on the Importer Security Filing (ISF) program<sup>61</sup> and found that while ISF rule data have improved the program's ability to identify high-risk cargo shipments, CBP could collect additional performance information to better evaluate program effectiveness.<sup>62</sup> While evaluating the direct impact of using ISF rule data to assess shipment risk is difficult, we identified examples of how CBP could better assess the ISF program's effectiveness. For example, CBP could track the number of containers not listed on a manifest—which could pose a security risk—it identifies through reviewing vessel stow plans. Collecting this type of additional information would help CBP better assess whether the ISF program is improving its ability to identify high-risk shipments. Therefore, we recommended that CBP identify and collect additional performance information on the impact of the ISF rule data, such as the identification of shipments containing contraband, to better evaluate the effectiveness of the ISF program. DHS agreed with the recommendation and reported that it is working to assess additional performance metrics to evaluate the effectiveness of the ISF program and anticipates completing the assessment by end of December 2019.
- **Maritime border domain.** In October 2017, we reported on the Coast Guard's performance goals and found that although the Coast Guard's performance goals are generally aligned with its statutory

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<sup>61</sup>In January 2009, CBP implemented the ISF and Additional Carrier Requirements, generally referred to as the "ISF rule." Importer Security Filing and Additional Carrier Requirements, 73 Fed. Reg. 71,730 (Nov. 25, 2008) (codified at 19 C.F.R. pts. 4, 12, 18, 101, 103, 113, 122, 123, 141, 143, 149, 178, & 192). The ISF rule requires that importers (who order containerized and break bulk goods—commodities such as bound lumber or goods stacked on wooden pallets—to be shipped from foreign sources to the United States via oceangoing vessels) and vessel carriers (who physically transport goods from foreign ports to ports in the United States) submit additional cargo information, such as country of origin, to CBP before the cargo is loaded onto U.S.-bound vessels. See 19 C.F.R. §§ 4.7c, 4.7d, 149.1-149.6.

<sup>62</sup>GAO, *Supply Chain Security: CBP Needs to Enforce Compliance and Assess the Effectiveness of the Importer Security Filing and Additional Carrier Requirements*, [GAO-17-650](#) (Washington, D.C.: July 20, 2017).

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missions, the Coast Guard does not explain why certain aspects of mission performance are measured while others are not.<sup>63</sup> For example, we found that while the Coast Guard's mission is to interdict all illegal drugs, the agency's two performance goals related to that mission were for cocaine interdiction only, excluding many other substances. We recommended that the Coast Guard either develop new performance goals to address mission activity gaps, or explain in the Coast Guard's Annual Performance Report why certain aspects of mission performance are measured while others are not. Developing new goals to address missions, or describing how existing goals sufficiently assess mission performance, could better convey the Coast Guard's progress in achieving its missions.

DHS agreed with the recommendation and in February 2018, the Coast Guard provided us with its updated fiscal year 2017 Annual Performance Report. We found that while the updated report explained why performance goals related to its drug interdiction mission focus solely on cocaine interdiction, for the four other performance goals we previously identified as not fully addressing all related mission activities, the updated report did not include additional goals or explain why certain aspects of mission performance are not measured. We continue to believe that in instances in which performance goals do not fully address all of the respective mission activities, the Coast Guard's Annual Performance Report should include an explanation.

- **Air and marine security in the land domain.** In May 2017, we reviewed DHS's efforts to address subterranean, aerial, and maritime smuggling of drugs and humans.<sup>64</sup> We found that while DHS established high-level performance measures and collected data on smuggling by ultralight aircraft, it had not assessed its efforts specific to addressing this smuggling method. Additionally, we found that DHS had similarly not assessed smuggling methods such as tunnels, panga boats (a fishing vessel), and recreational vessels. We recommended that DHS direct CBP, ICE, and Coast Guard to establish and monitor performance measures and targets related to ultralight aircraft, cross-border tunnels, panga boats, and recreational

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<sup>63</sup>GAO, *Coast Guard: Actions Needed to Enhance Performance Information Transparency and Monitoring*, [GAO-18-13](#) (Washington, D.C.: Oct. 27, 2017).

<sup>64</sup>GAO, *Border Security: Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling*, [GAO-17-474](#) (Washington, D.C.: May 1, 2017).



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vessel smuggling to help provide reasonable assurance that efforts to address these smuggling methods are effective.<sup>65</sup> By establishing measures and monitoring performance against targets, managers could obtain valuable information on successful approaches and areas that could be improved to help ensure that technology investments and operational responses to address these smuggling methods are effective.

DHS agreed with the recommendations for measures related to ultralight aircraft and cross-border tunnels. DHS reported that AMO and Border Patrol have drafted a performance measure for ultralight aircraft, however, reviews and approval of the measure will not be completed until November 2019. As of June 2018, DHS reported that ICE was leading the development of measures related to cross-border tunnels. DHS did not agree with the recommendation to establish measures and monitor performance against targets for smuggling by panga boats and recreational vessels because the department believed measures and targets would not provide the most useful strategic assessment of operations to prevent all illicit trafficking, regardless of area of operations or mode of transportation. We continue to believe that the recommendation is valid and recognize the value of high-level strategic performance measures. However, such high-level measures may not provide sufficiently detailed performance information to allow DHS to identify successful approaches to addressing smuggling by panga boats and recreational vessels and areas for improvement. Further, establishing performance measures and targets related to smuggling by panga boats and recreational vessels could, in turn, better position DHS to understand the overall smuggling threat.

Appendix II provides additional information on these and other metrics we have previously recommended that DHS could use to help measure the effectiveness of border security in the four domains.

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<sup>65</sup>In regard to smuggling by panga boats and recreational vessels, we recommended the establishment of performance measures and targets for Regional Coordinating Mechanisms. In 2011, DHS established Regional Coordinating Mechanisms to coordinate interagency operations and avoid duplicative efforts to address U.S. mainland threats in the maritime domain, including panga boats and recreational vessels.

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## Conclusions

Securing U.S. borders is a complex undertaking that spans multiple domains and locations. It is also a key part of DHS's mission for which DHS has made significant investments over the years. Given the complexity and breadth of border security efforts, having data and information available on the state of border security is important for DHS as well as policymakers and the public to understand the effectiveness of those investments. DHS's fiscal year 2017 *Border Security Metrics Report* makes an important contribution in providing such data and information.

DHS components generally have processes to help ensure the reliability of the data used in the metrics report and DHS identified and disclosed some data and methodological limitations with the metrics. However, DHS did not systematically review the reliability of data used in all metrics to identify and disclose limitations and their potential implications for the metric. Without complete information about the limitations of the data or the metric methodologies used in the report, Congress, policymakers, and the public may not be aware of important context or information needed to fully and appropriately understand the data being presented. By developing and implementing a process to systematically review the reliability of the data, as well as comprehensively identify limitations and communicate limitations of the metrics, DHS would improve the quality of the data and information provided in the report which would facilitate a better understanding and appropriate interpretation of the data and information provided.

To develop three metrics in the report, DHS used a statistical model that incorporated untested assumptions about the behavior of unlawful border crossers that may not reflect real-world conditions. DHS was transparent about the limitations of its model, but providing the results of sensitivity analyses and measures of statistical uncertainty related to the model would allow Congress, policymakers, and the public to better understand its potential limitations and more fully evaluate the validity of DHS's metrics that use estimates.

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## Recommendations for Executive Action

We are making the following four recommendations to DHS:

The Secretary of Homeland Security should develop and implement a process to systematically review the reliability of the data used in its *Border Security Metrics Report* and comprehensively identify any limitations with the data and methodologies that underlie its metrics. (Recommendation 1)

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The Secretary of Homeland Security should ensure the communication of the limitations of the metrics identified through the systematic review in the department's annual *Border Security Metrics Report*. (Recommendation 2)

The Under Secretary for the Office of Strategy, Policy, and Plans should include the results of sensitivity analyses to key assumptions in its statistical models of unlawful entry estimates in its annual *Border Security Metrics Report*. (Recommendation 3)

The Under Secretary for the Office of Strategy, Policy, and Plans should include measures of statistical uncertainty for all metrics based on estimates derived from statistical models in its annual *Border Security Metrics Report*. (Recommendation 4)

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## Agency Comments

We provided a draft of this report to DHS and the Office of National Drug Control Policy for review and comment. DHS provided written comments, which are reproduced in appendix III and discussed below. DHS also provided technical comments, which we incorporated as appropriate. The Office of National Drug Control Policy indicated via e-mail that it did not have any comments on the draft report.

In its comments, DHS concurred with our recommendations and stated that it planned to implement 3 of the 4 by October 2020. With respect to our second recommendation, DHS requested that we consider it closed as implemented because the department already detailed some of the limitations in its fiscal year 2017 report, and plans to continue to identify known limitations and the progress made to mitigate previously identified limitations in future reports. As discussed in this report, we agree that DHS identified and disclosed limitations for some metrics in its fiscal year 2017 *Border Security Metrics Report*; however, we identified at least one additional limitation for 21 of the 35 metrics on which DHS reported that DHS did not disclose or about which it could have been more transparent. To address the intent of this recommendation, once DHS has implemented a process to systematically review the reliability of the data used in its report and comprehensively identified related limitations, it should disclose those limitations in its annual *Border Security Metrics Report*.

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We are sending copies of this report to the appropriate congressional committees and the Secretary of the Department of Homeland Security. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>. Contacts points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report.

If you or your staff have any questions about this report, please contact me at (202) 512-8777 or [gablerr@gao.gov](mailto:gablerr@gao.gov). GAO staff who made key contributions to this report are listed in appendix IV.

A handwritten signature in black ink that reads "Rebecca Gambler". The signature is written in a cursive, flowing style.

Rebecca Gambler, Director  
Homeland Security and Justice

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# Appendix I: Additional Information on Metrics Contained in the Department of Homeland Security's Fiscal Year 2017 *Border Security Metrics Report*

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This appendix provides additional information on our analysis of the suitability and validity of the metrics the Department of Homeland Security (DHS) reported in its fiscal year 2017 *Border Security Metrics Report* for each of the four domains listed in the National Defense Authorization Act for Fiscal Year 2017 (NDAA)—between ports of entry, at ports of entry, the maritime border, and air and marine metrics in the land domain.<sup>1</sup> Specifically, this appendix provides information on the metrics including their status, descriptions, differences between what DHS reported for the metrics and how they were described or defined by the NDAA, limitations, and any additional information or planned actions by DHS, where applicable.

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## Between Ports of Entry Domain Metrics

U.S. Border Patrol is the federal agency with the primary responsibility for securing U.S. borders between the designated U.S. land ports of entry including the 6,000 miles of Mexican and Canadian international borders and the 2,000 miles of coastal boundaries surrounding the Florida Peninsula and the island of Puerto Rico. The 14 metrics in this domain measure the number of unlawful border crossers, apprehensions, and illicit drug seizures between ports of entry, among other things. DHS included 13 of the 14 metrics called for in the NDAA for this domain in its fiscal year 2017 *Border Security Metrics Report*, as shown in table 4.

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<sup>1</sup>DHS, *Border Security Metrics Report* (Washington, D.C.: May 1, 2018). DHS intended this report to satisfy the NDAA reporting requirement for fiscal year 2017; therefore, we refer to it as DHS's fiscal year 2017 *Border Security Metrics Report*. Any references to future DHS border security metrics reports are according to the fiscal year DHS intends them to satisfy the NDAA's annual reporting requirement.

**Appendix I: Additional Information on Metrics  
Contained in the Department of Homeland  
Security's Fiscal Year 2017 Border Security  
Metrics Report**

**Table 4: Status of Metrics in the Between Ports Of Entry Domain in the Department of Homeland Security's (DHS) Fiscal Year 2017 Border Security Metrics Report**

Metric		Included in the fiscal year 2017 Border Security Metrics Report	Not Included in the fiscal year 2017 Border Security Metrics Report
1	Attempted unlawful border crosser apprehension rate <sup>a</sup>	✓	
2	Detected unlawful entries <sup>b</sup>	✓	
3	Estimated undetected unlawful entries <sup>c</sup>	✓	
4	Turn backs <sup>d</sup>	✓	
5	Got aways <sup>e</sup>	✓	
6	A measurement of situational awareness achieved in each U.S. Border Patrol sector <sup>f</sup>		✓
7	Unlawful border crossing effectiveness rate <sup>g</sup>	✓	
8	Probability of detection rate <sup>h</sup>	✓	
9	Apprehensions in each U.S. Border Patrol sector <sup>i</sup>	✓	
10	Apprehensions of unaccompanied alien children <sup>j</sup>	✓	
11	Apprehensions of family units <sup>k</sup>	✓	
12	Between the ports illicit drug seizure rate <sup>l</sup>	✓	
13	Estimates of the impact of the Consequence Delivery System on recidivism <sup>m</sup>	✓	
14	Examination of each consequence under the Consequence Delivery System <sup>n</sup>	✓	

Source: GAO analysis of the DHS's fiscal year 2017 Border Security Metrics Report. | GAO-19-305

<sup>a</sup>The rate of apprehension of attempted unlawful border crossers. 6 U.S.C. § 223(b)(1)(A)(i).

<sup>b</sup>The number of detected unlawful border crossers. Id. at § 223(b)(1)(A)(ii).

<sup>c</sup>The number of estimated undetected unlawful entries. Id. at § 223(b)(1)(A)(iii).

<sup>d</sup>Id. at § 223(b)(1)(A)(iv).

<sup>e</sup>Id. at § 223(b)(1)(A)(v).

<sup>f</sup>Id. at § 223(b)(1)(B). According to DHS's report, this metric is under development and is estimated to be included in the fiscal year 2020 report.

<sup>g</sup>Unlawful border crossing effectiveness rate in each U.S. Border Patrol sector. Id. at § 223(b)(1)(C).

<sup>h</sup>Id. at § 223(b)(1)(D).

<sup>i</sup>The number of apprehensions in each U.S. Border Patrol sector. Id. at § 223(b)(1)(E).

<sup>j</sup>The number of apprehensions of unaccompanied alien children, and the nationality of such children in each U.S. Border Patrol sector. Id. at § 223(b)(1)(F).

<sup>k</sup>The number of apprehensions of family units, and the nationality of such family units in each U.S. Border Patrol sector. Id. at § 223(b)(1)(G).

<sup>l</sup>An illicit drugs seizure rate for drugs seized by U.S. Border Patrol between ports of entry. Id. at § 223(b)(1)(H).

<sup>m</sup>Estimates of the impact of the Consequence Delivery System on recidivism of unlawful border crossers over multiple fiscal years. Id. at § 223(b)(1)(I).

<sup>n</sup>Id. at § 223(b)(1)(J).

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DHS reported that the “measurement of situational awareness achieved in each U.S. Border Patrol sector” metric—the one metric on which it did not provide information in the between ports of entry domain—was under development and estimated that it would provide information on this metric in its 2020 annual report to Congress.

## Description

This metric is a rate comparing apprehensions to the total number of attempted unlawful border crossers. As such, this metric requires an estimate of the number of unlawful entry attempts that are not detected, which is added to the number of detected unlawful border crossers to create the denominator. The Department of Homeland Security (DHS) provided two methods for calculating this rate in its report. The first method, called the Model-based Apprehension Rate, uses a statistical model based on the capture-recapture methodology to estimate the rate.<sup>1</sup> The second method, called the Observational Apprehension Rate, calculates the ratio of apprehensions to the sum of apprehensions and got aways.<sup>2</sup>

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

DHS solely included data for the southwest border because the current methodology for estimating undetected unlawful entries is limited to the southwest border. According to the report, research is underway on methods to produce estimates for the northern border.

## Limitations

The Observational Apprehension Rate incorporates data on apprehensions, and got aways, while the Model-based Apprehension Rate is based on an estimate for undetected unlawful entries. Consequently, the limitations for those metrics also apply here. For more information on the limitations for those metrics, see the respective sections below.

*DHS identified:* The observational apprehension rate excludes unobserved got aways.

## Additional information and planned actions by the Department of Homeland Security

In its report, DHS noted that it has taken steps to improve situational awareness along the border and mitigate limitations. These steps include investing in technology, refining observational estimates, and developing a methodology to estimate statistical reliability. According to U.S. Border Patrol officials, investments in new technology have enabled U.S. Border Patrol to better detect cross-border activities. For additional information on the data elements used for this metric and DHS's planned actions, see the respective sections below on apprehensions, got aways, and the estimate for undetected unlawful entries.

<sup>1</sup>In its report, DHS referred to this methodology as the "repeated trials model" methodology." For more information, see discussion in the body of this report.

<sup>2</sup>"Got aways" describe unlawful border crossers who are directly or indirectly observed entering unlawfully, are not apprehended, and are not turn backs. See 6 U.S.C. § 223(a)(3). The term "turn back" means an unlawful border crosser who, after making an unlawful entry into the United States, responds to United States enforcement efforts by returning promptly to the country from which such crosser entered. Id. at § 223(a)(9).



### Description

This metric is a count of the total number of attempted unlawful border crossers between land ports of entry who were directly or indirectly observed or detected by U.S. Border Patrol. The Department of Homeland Security (DHS) calculated this metric by adding turn backs, got aways, and apprehensions of unlawful border crossers.



Source: U.S. Customs and Border Protection. | GAO-19-305

### Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

DHS solely included data for the southwest border for turn backs and got aways. According to U.S. Border Patrol officials, the northern border has different immigration dynamics than the southern border and accounts for a significantly smaller number of turn backs and got aways overall, so northern border data were not included.

### Limitations

Because this metric incorporates data on apprehensions, got aways, and turn backs, the limitations for those metrics also apply here. For more information on the limitations for those metrics, see the respective sections below.

### Additional information and planned actions by the Department of Homeland Security

For additional information on the data elements used for this metric and DHS's planned actions, see the respective sections below.

## Description

This metric is an estimate of the number of attempted unlawful border crossers that are not directly or indirectly observed or detected by U.S. Border Patrol (Border Patrol). The Department of Homeland Security (DHS) used a statistical model, based on capture-recapture methodology, to estimate total successful unlawful entries, and subtracted detected got aways to calculate the total number of undetected unlawful entries.<sup>3</sup>

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

DHS only included data for the southwest border because the current methodology for estimating undetected unlawful entries is limited to the southwest border. According to DHS's report, research is under way to produce this estimate for the northern border.

## Limitations

### *DHS identified:*

- DHS does not currently have reliable data on the estimated share of migrants who, following an unsuccessful unlawful entry attempt, are deterred from making a subsequent reentry attempt. For its model, DHS used data from a survey of recently removed Mexicans, which asked them about their intentions to re-enter the United States.<sup>4</sup> According to DHS's report, a shortcoming of the survey is that it does not take account of shifting border enforcement efforts, potential changes in behavior by individuals who have been exposed to consequence programs, or other deterrent factors along the border. Consequently, any resulting undercount in the estimate of the deterred population results in a downward bias.
- The population that conforms best to the model's assumptions represents a diminishing share of southwest border apprehensions. Specifically, in its report DHS said that Mexican adults removed to the nearest border accounted for about 95 percent of apprehensions in the 1990s. However, because of recent changes at the border, including changes in the composition of border flows (i.e., rising numbers of Central Americans and asylum seekers) and in Border Patrol's enforcement strategy, the population best reflected in the model has declined to as few as 20 percent of apprehensions in recent years. Further, DHS noted that some alien populations, such as those seeking asylum and who do not evade detection by Border Patrol agents, are also excluded from the model. However, these populations make up an increasing share of apprehensions in recent years.
- The model uses restrictive assumptions about which re-apprehensions to include. For example, the model excludes apprehensions occurring at check points and other remote locations and those occurring more than 4 days after an illegal entry. According to DHS, these assumptions result in a downward bias.

### *We identified:*<sup>5</sup>

- DHS described assumptions it made in its report but did not provide quantitative information on the extent to which they affected its estimated undetected unlawful entries through the use of sensitivity analyses.

<sup>3</sup>In its report, DHS refers to this methodology as the "repeated trials model" methodology.

<sup>4</sup>The survey, Encuesta sobre Migración en las Frontera Norte de México, is conducted by a Mexican research center, El Colegio de la Frontera Norte. Interviews are conducted at repatriation facilities immediately upon return of the individual to Mexico, and interviewees are asked about their intentions to return to the United States within the next 7 to 90 days.

<sup>5</sup>For more information on these limitations, see discussion in the body of this report.

Sensitivity analyses help to convey the extent to which changing the values of variables, assumptions, data, or other input affects statistical estimates. By including the results of sensitivity analyses in its Border Security Metrics Report, DHS would allow Congress and the public to better understand the potential limitations associated with its model and make independent assessments on its accuracy. DHS did not provide information on the statistical level of uncertainty related to this rate, such as margins of error or confidence intervals. This information would help convey how the estimates might vary due to randomness in the data. Instead, DHS provided a single rate that does not fully convey the difficulty and uncertainty of the estimate.

- This metric incorporated data on apprehensions and got aways. For more information on the limitations associated with those metrics, see the respective sections below.

## **Additional information and planned actions by the Department of Homeland Security**

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According to DHS, officials are continuing to improve the accuracy of the existing statistical model for estimating unlawful border crossers but are also considering alternative methodologies. U.S. Customs and Border Protection has contracted with Johns Hopkins Applied Physics Laboratory to develop a new model for estimating the flow of unlawful border crossers. This model uses a combination of statistical modelling, data from sensors along the border, and probability models that reflect how Border Patrol agents and unlawful border crossers behave in given circumstances. Border Patrol officials estimated that the earliest the simulation-based estimate could potentially be incorporated into the DHS *Border Security Metrics Report* would be for fiscal year 2020.

## Description

This metric is a count of the number of unlawful border crossers who, after making an unlawful entry into the United States, responded to law enforcement efforts by returning promptly to the country from which they entered. These data came from U.S. Border Patrol (Border Patrol) records.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) only included data for the southwest border. According to Border Patrol officials, the northern border has different immigration dynamics than the southern border and accounts for a significantly smaller number of turn backs overall, so northern border data were not included. Officials stated that while the current emphasis of reporting is on the southwest border, efforts are underway to identify and find ways to capture data that are important and reflective of the effectiveness in addressing threats specific to the northern border.

## Limitations

### *DHS identified:*

- The estimate aggregates potentially subjective observations from thousands of individual agents.
- Some unlawful border crossers may enter the United States to drop off drug loads or to act as decoys to lure agents away from a certain area and then return to Mexico, and therefore may be misidentified as turn backs.

### *We identified:*

- In our previous work we identified differences in the procedures for reporting and classifying turn backs across sectors, and noted how factors such as terrain and weather may impact agents' abilities to accurately detect turn backs.<sup>6</sup>
- According to DHS, since 2014, Border Patrol has implemented a standard, southwest border-wide methodology to improve reporting and mitigate the potential subjectivity of observations by agents. Therefore, data before 2014 are not necessarily comparable to data from 2014 and later. DHS presented the data in a table without explaining that the methodology used to categorize and count turns backs changed in 2014.

## Additional information and planned actions by the Department of Homeland Security

According to DHS's report, Border Patrol has taken steps to implement a standard, southwest border-wide methodology to improve reporting of potential turn backs. In addition, DHS's report said that command staff ensure all agents are aware of and utilize proper definitions for apprehensions, got aways, and turn backs at their respective stations. They also ensure necessary communication takes place between and among sectors and stations to minimize double-counting when subjects cross through more than one station. DHS's report

<sup>6</sup>GAO, *Southwest Border Security: Additional Actions Needed to Better Assess Fencing's Contributions to Operations and Provide Guidance for Identifying Capability Gaps*, [GAO-17-331](#) (Washington, D.C.: Feb. 16, 2017); and GAO, *Border Patrol: Key Elements of New Strategic Plan Not Yet in Place to Inform Border Security Status and Resource Needs*, [GAO-13-25](#) (Washington, D.C.: Dec. 10, 2012).

noted that Border Patrol headquarters components validate data integrity.

## Description

This metric is a count of the number of unlawful border crossers who are directly or indirectly observed entering unlawfully, are not apprehended, and are not turn backs. These data came from U.S. Border Patrol (Border Patrol) records.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) only included data for the southwest border. According to Border Patrol officials, the northern border has different immigration dynamics than the southern border, so northern border data were not included. Officials stated that while the current emphasis of reporting is on the southwest border, efforts are under way to identify and find ways to capture data that are important and reflective of the effectiveness in addressing threats specific to the northern border.

## Limitations

*DHS identified:* The count aggregates potentially subjective observations from thousands of individual agents.

*We identified:*

- In previous work we identified differences in procedures for reporting and classifying got aways across sectors, and noted how factors such as terrain and weather may impact agents' abilities to accurately detect got aways.<sup>7</sup>
- According to DHS, since 2014, Border Patrol has implemented a standard, southwest border-wide methodology to improve reporting and mitigate the potential subjectivity of observations by agents. Therefore, data before 2014 are not necessarily comparable to data from 2014 and later. DHS presented the data in a table without explaining that the methodology used to categorize and count turns backs changed in 2014.
- For information on limitations with the model-based estimate for undetected unlawful entries, see the section for estimated undetected unlawful entries above.

## Additional information and planned actions by the Department of Homeland Security

According to DHS's report, Border Patrol has taken steps to implement a standard, southwest border-wide methodology to improve reporting of potential got aways. In addition, DHS's report said that command staff ensure all agents are aware of and utilize proper definitions for apprehensions, got aways, and turn backs at their respective stations. They also ensure necessary communication takes place between and among sectors and stations to minimize double-counting when subjects cross through more than one station. DHS's report noted that Border Patrol headquarters components validate data integrity.

As a comparison against the counts of documented got aways, DHS also provided an estimate of total

<sup>7</sup>GAO-13-25 and GAO-17-331.

successful unlawful entries along the southwest border using a statistical model based on capture-recapture methodology. For more information on the methodology for this estimate, see the section titled “Estimated Undetected Unlawful Entries” in this appendix.

## Description

This metric is a rate comparing the number of apprehensions and turn backs to the number of apprehensions, estimated undetected unlawful entries, turn backs, and got aways in each U.S. Border Patrol sector.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

According to the Department of Homeland Security's (DHS) report, the unlawful border crossing effectiveness rate is not available because sector-level estimates of unlawful entries and attempts have not yet been produced and validated. As an alternative, DHS presented data using the interdiction effectiveness rate.<sup>8</sup> With this rate, the estimated undetected unlawful entries measure is replaced with known got aways. However, DHS does not have an interdiction effectiveness rate for the northern border so it solely provided data for the southwest border. According to DHS's report, the department has not yet developed a northern border interdiction effectiveness rate because there are only a small number of attempted and successful entries along the northern border.

## Limitations

None identified.

## Additional information and planned actions by the Department of Homeland Security

DHS reported that sector-level estimates of unlawful entries and attempts are projected to be available in its 2019 annual *Border Security Metrics Report* to Congress.

<sup>8</sup>U.S. Border Patrol also reports the interdiction effectiveness rate in its Annual Performance Report.



## Description

The National Defense Authorization Act for Fiscal Year 2017 (NDAA) defined this metric as a rate comparing the estimated total undetected unlawful border crossing attempts to the unlawful border crossing effectiveness rate. The Department of Homeland Security (DHS) calculated this metric by dividing the detected unlawful entries by the estimated total unlawful entries. The number of detected unlawful entries is calculated by adding turn backs, got aways, and apprehensions. Estimated total unlawful entries is calculated by adding turn backs, apprehensions and estimated total successful unlawful entries derived from DHS's statistical model.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

DHS only included data for the southwest border because the current methodology for estimating undetected unlawful entries is limited to the southwest border. Additionally, DHS used detected unlawful entries as the numerator, instead of the estimated total unlawful border crossing attempts not detected as called for in the NDAA. For the denominator DHS used the estimated total unlawful entries instead of the unlawful border crossing effectiveness rate, as called for in the NDAA.<sup>9</sup>

## Limitations

Because this metric incorporates data on apprehensions, got aways, and turn backs, as well as the estimate for undetected unlawful entries, the limitations for those metrics also apply to this metric. For more information on the limitations for those metrics, see the respective sections for those metrics.

<sup>9</sup>The NDAA defined the unlawful border crossing effectiveness rate as "the percentage that results from dividing the number of apprehensions and turn backs by the sum of the number of apprehensions, estimated undetected unlawful entries, turn backs, and got aways." In contrast, the estimated total unlawful entries metric is the sum of turn backs, apprehensions, and the model-based estimate of total successful unlawful entries.

## **Additional information and planned actions by the Department of Homeland Security**

For additional information on apprehensions, got aways, turn backs, and the estimate for undetected unlawful entries, and any planned actions by DHS for those metrics, see the respective sections for those metrics.

## Between Ports of Entry Domain

# Apprehensions in Each U.S. Border Patrol Sector

## Description

This metric is a count of the number of apprehensions in each U.S. Border Patrol (Border Patrol) sector. Data come from Border Patrol records, and each apprehension of the same unlawful crosser in a fiscal year is counted separately, meaning these data do not represent a count of unique crossers apprehended.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) only included data for the southwest border. According to Border Patrol officials, the northern border has different immigration dynamics than the southern border, so northern border data were not included. Officials stated that while the current emphasis of reporting is on the southwest border, efforts are under way to identify and find ways to capture data that are important and reflective of the effectiveness in addressing threats specific to the northern border.

## Limitations

*DHS identified:* In its report, DHS said that apprehensions are not a useful indicator of successful unlawful border crossings over the long-term and across multiple locations because the relationship between apprehensions and successful unlawful entries depends on the apprehension rate, which changes over time and may differ by location.

## Additional information

None.

## Description

This metric is a count of the number of apprehensions of unaccompanied alien children (UAC), and the nationality of such children, in each U.S. Border Patrol (Border Patrol) sector. A UAC is a child under 18 years old with no lawful immigration status, and no parent present and available in the United States to provide care and physical custody.<sup>10</sup>

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) only included data for the southwest border.

## Limitations

*DHS identified:* Agents may not be able to reliably distinguish among older children and young adults or confirm whether children are traveling alone or in family groups.

*We identified:*

- We previously reported that it can be challenging to obtain accurate information about a child's country of origin because of absence of documentation, language barriers, and coached responses by smugglers, among other reasons.<sup>11</sup>
- Border Patrol officials said that the data on UAC may have reliability issues because original data from a shared database had been changed. Specifically, officials said that in January 2015 they noticed that Enforcement and Removal Operations staff were inadvertently overwriting Border Patrol's original data entries about the status of migrant children apprehended once those children were placed with relatives or a foster family.

## Additional information and planned actions by the Department of Homeland Security

According to Border Patrol officials, agents rely on statements provided by the child to determine the nationality of UACs when verifiable documentation is not available. Verifiable documentation could include biometric checks, birth certificates, state-issued identification cards, and passports. However, officials noted that this list is not all-inclusive and the processing agent determines the validity of any presented documents. Border Patrol officials said that a data integrity team regularly examines data on apprehensions and they conduct biweekly data reliability checks. Additionally, they are working with Enforcement and Removal Operations to modify the data entry process so that updates can be made without overwriting the original apprehension data entered by Border Patrol.

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<sup>10</sup>6 U.S.C. § 279(g)(2).

<sup>11</sup>GAO, *Central America: Information on Migration of Unaccompanied Children from El Salvador, Guatemala, and Honduras*, GAO-15-362 (Washington, D.C.: Feb. 27, 2015).



## Description

This metric is a count of the number of apprehensions of family units, and the nationality of such family units, in each U.S. Border Patrol (Border Patrol) sector. A family unit is the number of individuals apprehended with a family member. For example, a mother and child apprehended together are counted as two family units.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) only included data for the southwest border.

## Limitations

*DHS identified:* DHS noted that the count of apprehensions for family units is considered reliable, but that agents may not be able to reliably identify family units.

*We identified:* According to Border Patrol officials, their data entry system did not have a dedicated field for agents to record apprehensions of persons within a family unit for all of the years presented in the report. In December 2014, Border Patrol added specific data entry fields to its data entry processes for agents to input information about family units. These fields incorporated built in safeguards and edit checks to help ensure that agents make an appropriate family unit classification. Previously, Border Patrol officials said they used proxy data to identify family units. Given the additional safeguards and checks included with the new family unit data entry fields, Border Patrol officials stated that the data after December 2014 may be more reliable overall compared to previous years. Border Patrol officials stated that they have high confidence in the proxy count for data pre-2014, but acknowledged that those data may contain misclassifications of family units.

## Additional information

According to Border Patrol officials, agents are trained in interviewing techniques and the processing agent will consider all available evidence to determine the validity of claims to familial relationships. Border Patrol officials also noted that in order to be categorized as a family unit, at least one member of the family unit must be at least 18 years of age. Consequently, related individuals younger than 18 years of age that are apprehended together would not be categorized as a family unit.

**Between Ports of  
Entry Domain**

# Between the Ports Illicit Drug Seizure Rate

## Description

This metric is a rate comparing the amount and type of illicit drugs seized between ports of entry in any fiscal year to the average of the amount and type of illicit drugs seized between ports of entry in the immediately preceding 5 fiscal years.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

None identified.

## Limitations

None identified.

## Additional information

None.

# Estimates of the Impacts of the Consequence Delivery System on Recidivism

## Description

This metric was not specifically defined in the National Defense Authorization Act for Fiscal Year 2017 (NDAA); the NDAA called for an estimate of the impact of the Consequence Delivery System (CDS) on the recidivism rate of unlawful border crossers over multiple fiscal years.<sup>12</sup> The Office of Immigration Statistics (OIS) calculated this metric by providing the average annual recidivism rate for the 3 years prior to fiscal year 2012—when the CDS was implemented—and the average annual recidivism rate for the subsequent 3 years. The annual recidivist rate is calculated by dividing the number of unique crossers apprehended multiple times in a fiscal year by the total number of unique crossers in the fiscal year.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) only included data for the southwest border because, according to DHS's report, recidivism data for the northern border were not available due to the small number of attempted illegal entries along the northern border.

## Limitations

### *DHS identified:*

- Noting the findings from our January 2017 review, DHS stated that its current recidivism measure could be strengthened by using the date an unlawful border crosser is removed or returned instead of the date they are apprehended, as well as by counting re-apprehensions within a fixed period of time defined by the crosser's repatriation date instead of by the fiscal year.<sup>13</sup> In January 2017, we reported that using a crosser's apprehension history beyond 1 fiscal year, and excluding crossers that have not been previously removed, among other things, produces a significantly different rate compared to how DHS currently calculates it. Consequently, we recommended that DHS calculate recidivism for a period of time longer than 1 fiscal year and that DHS exclude from the recidivism calculation aliens for whom there is no record of removal and who may remain in the United States. As of December 2018, this recommendation remained open.<sup>14</sup>
- DHS stated that changes in the recidivism rate after 2012 cannot be attributed solely to CDS because enforcement is a complex, dynamic system.

*We identified:* Given that DHS's methodology is to provide the 3-year average of the recidivism rate before and after CDS was implemented in fiscal year 2012, the data presented will remain static for subsequent annual

<sup>12</sup>The CDS is a process U.S. Border Patrol uses to uniquely evaluate each apprehended crosser and identify the most effective and efficient consequences to deliver to impede and deter further illegal activity.

<sup>13</sup>GAO, *Border Patrol: Actions Needed to Improve Oversight of Post-Apprehension Consequences*, [GAO-17-66](#) (Washington, D.C.: Jan. 12, 2017).

<sup>14</sup>Although DHS did not concur with this recommendation, it has taken some steps to implement it. For example, in January 2018, DHS officials stated that the office started reporting nationwide the recidivism rates for multiple years to U.S. Border Patrol sectors for situational awareness. However, the methodology for this reported recidivism rate does not exclude aliens for whom there is no record of removal.



reports because the periods of comparison for analyzing recidivism are fixed around a specific point in time. According to OIS officials, to help address this issue, in the next report they plan to provide individual rates for each year instead of the 3-year average.

## **Additional information and planned actions by the Department of Homeland Security**

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In its report, DHS noted that future reports will include estimates of the impact of CDS on both the annual recidivism rate and a longer-term recidivism rate. For example, OIS officials said they plan to update the way they calculate recidivism for future issues of the report and are developing a multivariate impact analysis that would take into consideration factors such as crossers' demographics and immigration history.

# Examination of Each Consequence Under the Consequence Delivery System

## Description

This metric was not specifically defined in the National Defense Authorization Act for Fiscal Year 2017 (NDAA); the NDAA called for an examination of each consequence under the Consequence Delivery System (CDS), including (1) voluntary return, (2) warrant of arrest or notice to appear, (3) expedited removal, (4) reinstatement of removal, (5) alien transfer exit program, (6) criminal consequence program, (7) standard prosecution, and (8) Operation Against Smugglers Initiative on Safety and Security.<sup>15</sup> The Department of Homeland Security (DHS) presented data on the recidivism rates for each consequence between fiscal years 2012 through 2016.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

As noted above for the metric "estimates of the impact of the Consequences Delivery System on recidivism," DHS only included data for the southwest border because recidivism data for the northern border were not available due to the small number of attempted illegal entries along the northern border.

## Limitations

### *DHS identified:*

- Differences in recidivism rates among the consequences may also reflect differences in the propensity of the targeted populations to attempt to re-enter.<sup>16</sup>
- As with the metric for estimating the impact of the CDS on recidivism discussed above, DHS noted the limitation that current recidivism data are based on apprehensions within a given fiscal year, and not the date when an individual was repatriated to their country of origin.<sup>17</sup>

### *We identified:*

- In January 2017, we reported that some unlawful border crossers were incorrectly classified based on CDS guidance.<sup>18</sup> U.S. Border Patrol (Border Patrol) agents implement CDS by classifying apprehended aliens

<sup>15</sup>Voluntary return allows individuals to voluntarily depart from the United States in lieu of being subject to formal removal or expedited removal proceedings, thereby effectively withdrawing as an applicant for admission. Warrant of arrest or notice to appear refers to the initiation of formal removal proceedings in immigration court. See 8 U.S.C. §§ 1229, 1229a. Expedited removal is the process by which a DHS immigration officer may, subject to statutory criteria, order arriving and other designated foreign nationals removed from the United States without a formal removal proceeding. See 8 U.S.C. § 1225(b). Reinstatement of removal refers to the process by which a prior order of removal is reinstated because of illegal reentry after being removed or having departed voluntarily under such prior removal order. See 8 U.S.C. § 1231(a)(5).

<sup>16</sup>For crossers who have a more extensive history of attempting to cross, Border Patrol applies consequences designed to have a greater deterrent impact. For example, Border Patrol utilizes partnerships with the Department of Justice to prioritize and prosecute individuals with six or more apprehensions.

<sup>17</sup>This was a limitation we previously identified in our January 2017 report reviewing Border Patrol's oversight of post-apprehension consequences. See GAO, *Border Patrol: Actions Needed to Improve Oversight of Post-Apprehension Consequences*, [GAO-17-66](#) (Washington, D.C.: Jan. 12, 2017). In that review, we found that using a crosser's apprehension history beyond 1 fiscal year, and excluding crossers that have not been previously removed, among other things, produces a significantly different rate compared to how DHS currently calculates it.

<sup>18</sup>[GAO-17-66](#).

into one of seven noncriminal or criminal categories and then applying one or more of eight different consequences; therefore, determining the correct classification of the unlawful border crosser is important for identifying and applying the appropriate consequence. Our analysis of Border Patrol apprehension data from fiscal year 2013 through 2015 showed that Border Patrol did not classify 11 percent of apprehensions in accordance with the agency's guidance. We recommended that Border Patrol provide consistent guidance for classification and take steps to ensure the integrity of classification data. Border Patrol implemented this recommendation as of December 2017, but the issue could potentially have implications for the data DHS used in this metric, which was for fiscal years 2012 through 2016.

## **Additional information and planned actions by the Department of Homeland Security**

According to its report, DHS is refining its analysis and will seek to specifically address the limitations discussed above in the fiscal year 2018 version of the *Border Security Metrics Report*.

## **At Ports of Entry Domain Metrics**

Ports of entry are U.S. government facilities that provide for the controlled entry into or departure from the United States. There are 328 ports of entry in the United States. Specifically, a port of entry is any officially designated location (seaport, airport, or land border location) where U.S. Customs and Border Protection (CBP) officers or employees are assigned to clear passengers, merchandise and other items, collect duties, and enforce customs laws; and where CBP officers inspect persons seeking to enter or depart, or apply for admission into, the United States pursuant to U.S. immigration law and travel controls. CBP's Office of Field Operations (OFO) is the lead DHS component responsible for carrying out activities at POEs. The 15 metrics in this domain measure the number of travelers attempting to enter the United States at ports of entry, illicit drugs seized at ports of entry, and cargo entering the United States, among other things.<sup>19</sup> DHS included 11 of the 15 metrics called for in the NDAA for this domain in its fiscal year 2017 *Border Security Metrics Report*, as shown in table 5.

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<sup>19</sup>We currently have a review underway looking at CBP's inspection activities at land ports of entry. We plan to issue a report on our findings in spring 2019.

**Table 5: Status of Metrics for Securing the Border at Ports of Entry in the Department of Homeland Security's (DHS) Fiscal Year 2017 Border Security Metrics Report**

Metric		Included in the fiscal year 2017 <i>Border Security Metrics Report</i>	Not included in the fiscal year 2017 <i>Border Security Metrics Report</i>
1	Total inadmissible travelers at ports of entry <sup>a</sup>	✓	
2	Refusal and interdiction rates at ports of entry <sup>b</sup>	✓	
3	Unlawful entries at ports of entry <sup>c</sup>		✓
4	Illicit drugs seized at ports of entry <sup>d</sup>	✓	
5	Port of entry illicit drug seizure rate <sup>e</sup>	✓	
6	Major infractions at ports of entry <sup>f</sup>	✓	
7	Cocaine seizures effectiveness rate <sup>g</sup>	✓	
8	Average wait times and traffic volume <sup>h</sup>	✓	
9	Infrastructure capacity utilization rate <sup>i</sup>	✓	
10	Secondary examination rate <sup>j</sup>	✓	
11	Secondary examinations effectiveness rate <sup>k</sup>		✓
12	Number of potentially "high-risk" cargo containers <sup>l</sup>	✓	
13	Ratio of potentially high-risk cargo containers scanned relative to high-risk containers entering in previous fiscal year <sup>m</sup>	✓	
14	Potentially high-risk cargo containers scanned upon arrival at a U.S. port of entry <sup>n</sup>		✓
15	Potentially high-risk cargo containers scanned before arrival at a U.S. port of entry <sup>o</sup>		✓

Source: GAO analysis of DHS's Fiscal Year 2017 *Border Security Metrics Report*. | GAO-19-305

<sup>a</sup>Total inadmissible travelers who attempt to, or successfully, enter the United States at a port of entry. 6 U.S.C. § 223(c)(1)(A)(i).

<sup>b</sup>The rate of refusals and interdictions for travelers who attempt to, or successfully, enter the United States at a port of entry. Id. at § 223(c)(1)(A)(ii).

<sup>c</sup>The number of unlawful entries at a port of entry. Id. at § 223(c)(1)(A)(iii). According to DHS's report, DHS does not currently have a methodology to reliably estimate the number of successful unlawful entries through ports of entry but is working to establish one. According to DHS officials, they project being able to produce such an estimate in time to be included in the fiscal year 2019 report.

<sup>d</sup>The amount and type of illicit drugs seized by U.S. Customs and Border Protection's (CBP) Office of Field Operations (OFO) at ports of entry during the previous fiscal year. Id. at § 223(c)(1)(B).

<sup>e</sup>An illicit drugs seizure rate for drugs seized by OFO, which compares the ratio of the amount and type of illicit drugs seized by OFO in any fiscal year to the average of the amount and type of illicit drugs seized by OFO in the immediately preceding 5 fiscal years. Id. at § 223(c)(1)(C).

<sup>f</sup>The number of infractions related to travelers and cargo committed by major violators who are interdicted by OFO at ports of entry, and the estimated number of such infractions committed by major violators who are not so interdicted. Id. at § 223(c)(1)(D).

<sup>g</sup>In consultation with the heads of the Office of National Drug Control Policy and the United States Southern Command, a cocaine seizure effectiveness rate, which is the percentage resulting from dividing the amount of cocaine seized by OFO by the total estimated cocaine flow rate at ports of entry along the United States land border with Mexico and Canada. Id. at § 223(c)(1)(E).

<sup>h</sup>A wait time ratio that compares the average wait times to total commercial and private vehicular traffic volumes at each land port of entry. Id. at § 223(c)(1)(F)(i).

<sup>i</sup>An infrastructure capacity utilization rate that measures traffic volume against the physical and staffing capacity at each land port of entry. Id. at § 223(c)(1)(F)(ii).

<sup>j</sup>A secondary examination rate that measures the frequency of secondary examinations at each land port of entry. Id. at § 223(c)(1)(F)(iii).

<sup>k</sup>An enforcement rate that measures the effectiveness of such secondary examinations at detecting major violators. Id. at § 223(c)(1)(F)(iv). According to DHS's report, this metric is under review and DHS did not provide a timeframe as to when it will be included in future reports.

<sup>l</sup>Id. at § 223(c)(1)(G)(i).

<sup>m</sup>Comparison of potentially high-risk cargo containers scanned by OFO at sea ports of entry during a fiscal year to total high-risk containers entering at such sea ports in the previous fiscal year. Id. at § 223(c)(1)(G)(ii).

<sup>n</sup>Potentially high-risk cargo containers scanned upon arrival at a U.S. sea port of entry. Id. at § 223(c)(1)(G)(iii). According to DHS's report, this metric is under review. DHS officials said that, as of December 2018, they do not plan to include this metric in the fiscal year 2018 report and they did not provide a timeframe as to when it will be included in future reports.

<sup>o</sup>Potentially high-risk cargo containers scanned before arrival at a U.S. sea port of entry. Id. at § 223(c)(1)(G)(iv). According to DHS's report, this metric is under review. DHS officials said that, as of December 2018, they do not plan to include this metric in the fiscal year 2018 report and they did not provide a timeframe as to when it will be included in future reports.

DHS reported that the four metrics for which it did not provide information did not yet have a reliable methodology or were under review, and that DHS was in the process of developing methodologies to capture the data needed for the requested metrics. DHS officials said these four metrics would not be ready for inclusion in the next annual report.

## Description

This metric is a count of total inadmissible travelers, and requires an estimate of the number of inadmissible travelers who successfully enter at a port of entry without being detected.<sup>20</sup> The metric is the sum of the number of inadmissible travelers interdicted and the estimated number of inadmissible travelers who successfully enter at a port of entry without being detected.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) does not have a methodology to estimate the number of inadmissible travelers who successfully enter at a port of entry without being detected. Therefore, DHS only presented data on known inadmissible travelers.

## Limitations

None identified.

## Additional information and planned actions by the Department of Homeland Security

DHS projected that the department may be able to include estimates on the number of inadmissible travelers who successfully enter at a port of entry in its fiscal year 2019 *Border Security Metrics Report* to Congress. According to U.S. Customs and Border Protection (CBP) officials, they are in the process of determining whether CBP's Compliance Measurement Examination (COMPEX) program could be used as a means to reliably measure undetected inadmissible travelers.<sup>21</sup>

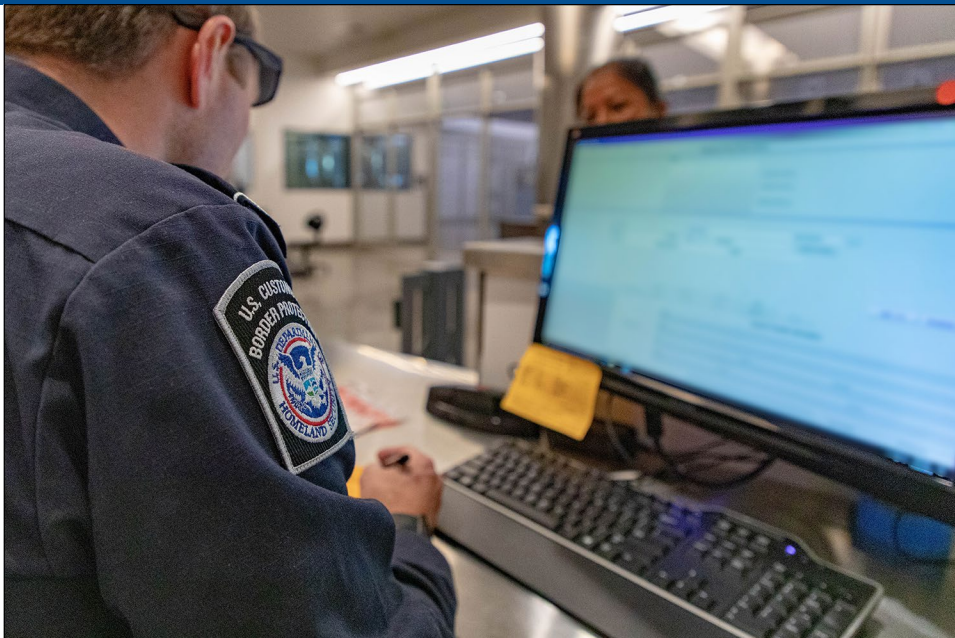
<sup>20</sup>Inadmissible travelers are travelers seeking admission at a port of entry who are determined to be statutorily inadmissible upon inspection by a CBP officer, and therefore ineligible for admission. See 8 U.S.C. § 1182(a).

<sup>21</sup>The COMPEX program is designed to help measure the effectiveness of CBP's inspections and audit its violation detection processes. CBP uses a computer generated random sample to select travelers transiting through POEs where COMPEX is in operation for a compliance examination who would not otherwise be referred for a secondary inspection. Through a standardized secondary inspection exam, officers identify violations that CBP would otherwise have missed. CBP then uses the number of violations found in the COMPEX sample to estimate the total number of violations among the traveler population that CBP would otherwise have missed. CBP carries out the COMPEX program at a limited number of airports and land ports of entry and excludes pedestrian and sea travelers as well as general aviation and cargo operations.

# Refusal and Interdiction Rates at Ports of Entry

## Description

These metrics are rates that require data on travelers seeking admission at a port of entry, interdictions of inadmissible travelers, and an estimate of the number of inadmissible travelers who successfully enter at a port of entry without being detected. The refusal rate is calculated by dividing the number of inadmissible travelers interdicted by all people seeking admission at a port of entry. The interdiction rate is calculated by dividing the number of inadmissible travelers interdicted by the total number of inadmissible travelers who attempt to enter at a port of entry.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) did not have a methodology to estimate the number of inadmissible travelers who successfully enter at a port of entry without being detected. Therefore, DHS only presented data on the refusal rate.

## Limitations

None identified.

## Additional information and planned actions by the Department of Homeland Security

DHS projected that the department may be able to include estimates on the number of inadmissible travelers who successfully enter at a port of entry in its next *Border Security Metrics Report* to Congress. According to U.S. Customs and Border Protection (CBP) officials, they are in the process of reviewing data and program policies for CBP's Compliance Measurement Examination program to determine if the program could be used as a means to reliably measure undetected inadmissible travelers, which would then be used in calculating the interdiction rate.



Description

This metric is a count of the amount in kilograms of illicit drugs seized by U.S. Customs and Border Protection officers at ports of entry. In an appendix to the report, the Department of Homeland Security listed out 34 different types of illicit drugs and the amounts seized for each for fiscal years 2007 through 2016.

Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security’s report

None identified.

Limitations

None identified.

Additional information

None.

## Description

This metric is a rate that compares the amount of illicit drugs seized (in kilograms) by Office of Field Operations officials at ports of entry in 1 fiscal year to the average amount seized in the immediately preceding 5 fiscal years.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The National Defense Authorization Act for Fiscal Year 2017 did not prescribe the illicit drugs to be included in the metric. The Department of Homeland Security provided rates for cocaine, methamphetamine, marijuana, and heroin for fiscal years 2012 through 2016.

## Limitations

None identified.

## Additional information

None.

## Description

This metric is a count of the number of infractions related to travelers and cargo committed by major violators, and an estimate of the number of major infractions not interdicted. The Department of Homeland Security (DHS) calculated an infraction rate by dividing the number of major infractions by the total number of passengers at ports of entry for fiscal years 2007 through 2016.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

- DHS officials reported that DHS does not have a methodology to track major violators as defined in the National Defense Authorization Act for Fiscal Year 2017 (NDAA).<sup>22</sup> As an alternative, for the purpose of its report, DHS defined a major infraction as an arrest, including arrests related to terrorism, drugs, criminal aliens, and currency, among other things.
- DHS reported that it does not have a methodology in place to estimate the number of undetected major infractions. Therefore, only data on known infractions are included.
- DHS only included data for passenger infractions and not cargo-related infractions.
- Although not requested by the NDAA, DHS provided an infraction rate by dividing the number of known infractions by the total number of travelers at ports of entry.

## Limitations

*We identified:* Given that DHS's alternative approach to this metric involves using arrests as a proxy for major infractions, it is unclear whether there is a one-to-one correspondence between the arrest of a major violator and the number of infractions committed.<sup>23</sup>

## Additional information

According to U.S. Customs and Border Protection (CBP) officials, they plan to use data from CBP's Compliance Measurement Examination program as a means to report estimated undetected major infractions starting with DHS's fiscal year 2019 report.

<sup>22</sup>The NDAA defines the term "major violator" to mean anyone engaging in serious criminal activities at a port of entry, including possession of illicit drugs or illegal weapons, smuggling of humans or prohibited products, use of fraudulent documents, or any other serious offense warranting arrest. 6 U.S.C. § 223(a)(5).

<sup>23</sup>We currently have a review under way looking at CBP's inspection activities at land ports of entry. We plan to issue a report on our findings in spring 2019.

## Description

This metric is a rate that compares the amount of cocaine seized at land ports of entry to the total estimated flow of cocaine.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

As defined by the National Defense Authorization Act for Fiscal Year 2017, this metric requires an estimate of the total flow of cocaine through land ports of entry. The Office of National Drug Control Policy produces annual estimates for total cocaine flow into the United States, but does not have a methodology to estimate the flow of cocaine through land ports of entry alone. Therefore, the estimates the Department of Homeland Security used included cocaine flow through all domains. According to the U.S. Drug Enforcement Administration's National Drug Threat Assessment, the southwest border remains the key entry point for the majority of the cocaine entering the United States.

## Limitations

None identified.

## Additional information

None.

## Description

This metric is a rate that compares the average wait time for vehicles to pass through a land port of entry to the total number of commercial and private vehicles at each land port of entry.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) did not present data for every port of entry because wait time data were not available for every port of entry, such as small ones with negligible wait times.

## Limitations

*We identified:* We reported in July 2013 that commercial vehicle wait time data were unreliable due to inconsistent data collection processes at ports, and made two recommendations to DHS to improve the reliability of the data.<sup>24</sup> While DHS implemented these recommendations in 2018, older data, including the data for the years presented in the report (fiscal years 2012 through 2016), remain unreliable.

<sup>24</sup>We recommended that DHS identify and carry out steps to help CBP officials overcome challenges to consistent implementation of wait time estimation methodologies, and assess the feasibility of replacing current manual calculation methods with automated methods. GAO, *U.S.-Mexico Border: CBP Action Needed to Improve Wait Time Data and Measure Outcomes of Trade Facilitation Efforts*, [GAO-13-603](#) (Washington, D.C.: July 24, 2013).

## **Additional information and planned actions by the Department of Homeland Security**

U.S. Customs and Border Protection (CBP) officials clarified that the wait times shown in the report reflect the average of all hourly recordings for wait times at ports of entry rather than the average passenger or vehicle experience because CBP did not report a volume-weighted measure of wait times. According to the report, CBP's wait time policy is currently under review and new guidance will be issued in the future to account for improvements in automation and recording.

**Description**

This metric is a rate that measures traffic volume at land ports of entry against the physical and staffing capacity at each land port of entry. The Department of Homeland Security (DHS) calculated the average number of vehicles processed per booth, per hour at each land port of entry.

**Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security’s report**

None.

**Limitations**

None identified.

**Additional information**

In addition to reporting utilization at each port of entry, DHS provided the average utilization rate for all northern border land ports of entry and all southern border land ports of entry.



## Description

This metric is a rate that measures the frequency of secondary examinations at each land port of entry.<sup>25</sup> The Department of Homeland Security (DHS) calculated the rate by dividing the recorded number of passengers sent for secondary inspection by the total number of recorded passengers at each land port of entry.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

DHS did not include data on secondary examinations of cargo or shipments.

## Limitations

None identified.<sup>26</sup>

## Additional information

None.

<sup>25</sup>A secondary examination is when a U.S. Customs and Border Protection (CBP) officer at a port of entry refers a traveler to a separate area, outside the primary inspection area, to complete the inspection or examination process without causing delays for other travelers. Reasons a traveler may be referred for a secondary examination include when the CBP officer cannot verify a traveler's information or a traveler does not have all the required documentation, for example.

<sup>26</sup>We currently have a review under way looking at CBP's inspection activities at land ports of entry. We plan to issue a report on our findings in spring 2019.

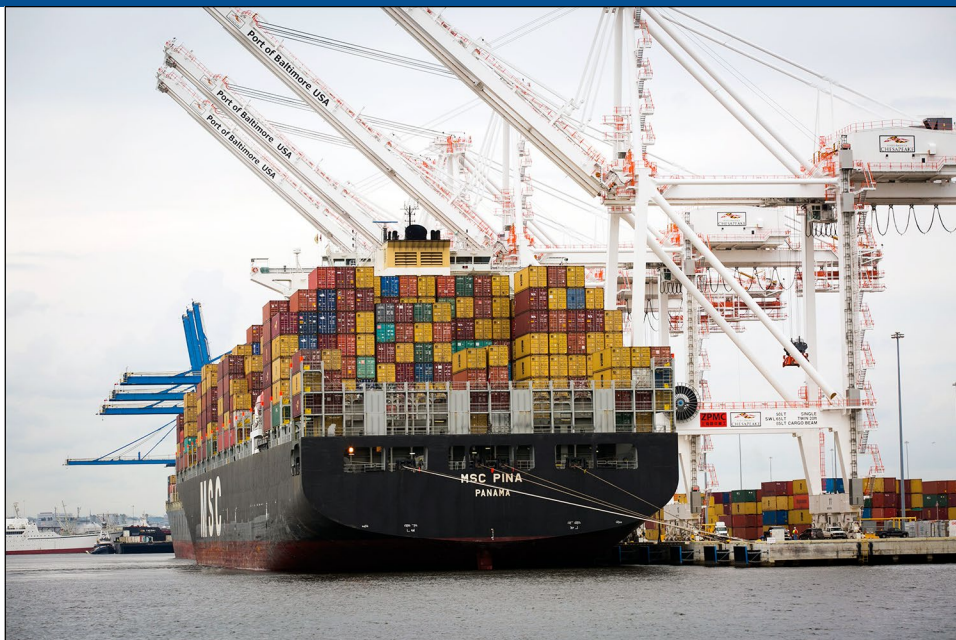


## At Ports of Entry Domain

# Number of Potentially “High-Risk” Cargo Containers

## Description

This metric is a count of the number of cargo containers at sea ports that DHS identified as potentially high-risk using National Targeting Center (NTC) security criteria.<sup>27</sup> According to the Department of Homeland Security (DHS), all international cargo shipments coming to the United States are screened to identify potentially high-risk containers, which may then be reviewed, scanned, or physically inspected prior to lading at a port of entry.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security’s report

None identified.

## Limitations

*We identified:* U.S. Customs and Border Protection (CBP) officials said that the process of defining and identifying “high-risk” shipments can exclude some shipments, such as those in free trade zones.

<sup>27</sup>The NTC, which is operated by U.S. Customs and Border Protection (CBP), identifies high-risk people and cargo traveling to the United States prior to their arrival. The NTC coordinates examination of cargo that may be connected to terrorist or other crimes, such as narcotics smuggling, human trafficking, merchandise counterfeiting, and money laundering. Importers are responsible for providing data on their cargo to CBP, which are automatically fed into CBP’s Automated Targeting System (ATS). ATS uses a set of rules that assess different factors in the data to determine the risk level of a shipment and automatically places high-risk shipments on hold. CBP officials use information in ATS to identify which high-risk shipments should be examined or waived. If a shipment is held for examination, officials may scan the cargo with radiation detection and nonintrusive inspection equipment to detect anomalies or shielding that could indicate the presence of weapons of mass destruction or other contraband. If an anomaly is detected, the shipment is physically examined.

## Additional information

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DHS's report said that the NTC periodically refines, improves, and revises the security criteria for high-risk shipments, which can affect the number of cargo shipments identified as high-risk.

**At Ports of Entry  
Domain**

# Ratio of Potentially High-Risk Cargo Containers Scanned Relative to High-Risk Containers Entering in Previous Fiscal Year

## Description

This metric is a rate comparing the number of potentially high-risk cargo containers scanned at each sea port of entry during a fiscal year to the total number of high-risk cargo containers that entered the United States at each sea port of entry during the previous fiscal year.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security (DHS) does not have data on cargo containers that were scanned separate from cargo containers that were reviewed or assessed; instead, DHS tracks these inspection methods collectively. Therefore, DHS also included data on potentially high-risk cargo containers that were reviewed or assessed as well as those that were scanned in its report.

## Limitations

*DHS identified:* In its report, DHS noted that ratio data are not available for fiscal year 2014 because U.S. Customs and Border Protection did not collect comparable container-level data (as opposed to shipment-level data) in fiscal year 2013. DHS also noted that the totals across the ports or field offices may include duplicate container counts.

*We identified:*

- NTC officials said that the definition of “high-risk” shipments excludes some shipments, such as those in free trade zones.
- NTC officials noted that assessing, reviewing, and scanning containers are different activities and reflect different levels of inspection or review. For example, NTC officials said that while all containers are “assessed” in order to determine their risk level, only higher risk containers may be scanned using radiation detection and nonintrusive inspection equipment. Consequently, when DHS included data on containers that were assessed or reviewed but not scanned, the resulting count was higher.
- In an appendix to its report, DHS presented a column of data called the “percentage of potentially high-risk containers scanned (same fiscal year)” for each fiscal year. Given DHS’s inability to separate data on the different inspection methods, the data in this column included containers that were reviewed by all inspection methods, not just scanning.
- In its appendix, DHS did not present data on the number of containers that “entered the United States,” even though it used those data to calculate the ratio and they are specified in the National Defense Authorization Act for Fiscal Year 2017. As a result, it is not possible to verify the accuracy of DHS’s ratio calculations.

## Additional information

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None.

## Maritime Border Domain Metrics

The U.S. maritime border domain encompasses ports, internal or inland waters, and coastal waters, as well as the territorial sea (waters 12 nautical miles seaward of the U.S. coast), contiguous zone (waters adjacent to and seaward of territorial sea and extending 24 nautical miles from shore), and exclusive economic zone (waters seaward of and adjacent to territorial sea and extending out to 200 nautical miles from shore).<sup>28</sup> U.S. Coast Guard (Coast Guard), Air and Marine Operations, and U.S. Border Patrol share responsibility for patrolling the U.S. maritime borders, and territorial sea.<sup>29</sup> The Coast Guard is a component of DHS and the lead federal maritime law enforcement agency on the high seas (waters beyond 12 nautical miles seaward of the U.S. coast) and all other waters under U.S. jurisdiction.<sup>30</sup> The Coast Guard responds to a variety of maritime border security issues, including trafficking of narcotics, people, illicit goods, unlawful migration, illegal exploitation of natural resources, potential terrorist activities, and the disruption of maritime commerce. The metrics in this domain measure the number of migrants and illicit drugs removed, among other things. DHS included 4 of 6 metrics called for in the NDAA for this domain in its fiscal year 2017 *Border Security Metrics Report*, as shown in table 6.

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<sup>28</sup>33 C.F.R. pt. 2, subpt. B.

<sup>29</sup>The term “U.S. territorial sea” generally refers to the waters, 12 nautical miles wide, adjacent to the U.S. coast and seaward of the territorial sea baseline—normally the mean low water line along the U.S. coast—consistent with the principles, as recognized by the United States, of the Convention on the Territorial Sea and the Contiguous Zone, 15 U.S.T. 1606, and the 1982 United Nations Convention on the Law of the Sea (UNCLOS), 21 I.L.M. 1261. See 33 C.F.R. §§ 2.20, 2.22(a); and Territorial Sea of the United States of America, Pres. Proc. No. 5928, 54 Fed. Reg. 777 (Dec. 27, 1988). In addition, CBP’s immigration-related enforcement authority over any U.S. external boundary encompasses U.S. land boundaries and territorial sea 12 nautical miles from U.S. baselines, consistent with international law. See 8 C.F.R. § 287.1(a)(1).

<sup>30</sup>For purposes of special maritime and territorial U.S. jurisdiction under 18 U.S.C. § 7, “high seas” means all waters seaward of the shore. Under customary international law, and unless clearly indicated otherwise, “high seas” means all waters that are not the exclusive economic zone, territorial sea, or internal waters of the United States or any other nation. See 33 C.F.R. §§ 2.22, 2.30, 2.32. Coast Guard’s, and AMO’s, law enforcement authorities on the high seas are generally defined in statute and regulation. See, e.g., 14 U.S.C. § 89 (states Coast Guard’s law enforcement authority on the high seas and U.S. waters, and provides that Coast Guard officers engaging in law enforcement pursuant to this section are deemed agents of the particular department or agency charged with the administration of the law being enforced); 19 U.S.C. § 1581 (CBP officers’ authority over vessels or vehicles in the United States or within U.S. customs waters or a customs-enforcement area, or any other authorized place); Pres. Proc. No. 4865, 46 Fed. Reg. 48,107 (Sept. 29, 1981); and 19 C.F.R. § 162.3(a) (CBP officers may board any vessel in the United States or within U.S. customs waters; any American vessel on the high seas; and any vessel within a customs-enforcement area, but a foreign vessel is not to be boarded in violation of any treaty with the foreign government, or in the absence of a special arrangement).

**Table 6: Status of Metrics for Securing the Maritime Border in the Department of Homeland Security's (DHS) Fiscal Year 2017 *Border Security Metrics Report***

Metric		Included in the fiscal year 2017 <i>Border Security Metrics Report</i>	Not included in the fiscal year 2017 <i>Border Security Metrics Report</i>
1	Situational Awareness in the Maritime Environment <sup>a</sup>	✓ <sup>b</sup>	
2	Known Maritime Migrant Flow Rate <sup>c</sup>	✓	
3	Illicit Drugs Removal Rate <sup>d</sup>	✓	
4	Cocaine Removal Effectiveness Rate <sup>e</sup>	✓	
5	DHS Maritime Threat Response Rate <sup>f</sup>		✓
6	Intergovernmental Maritime Threat Response Rate <sup>g</sup>		✓

Source: GAO analysis of DHS's fiscal year 2017 *Border Security Metrics Report*. | GAO-19-305

Notes:

<sup>a</sup>6 U.S.C. § 223(d)(1)(A).

<sup>b</sup>DHS reported several proxy metrics for situational awareness in the maritime environment while it develops the metric.

<sup>c</sup>Id. at § 223(d)(1)(B)

<sup>d</sup>An illicit drugs removal rate for drugs removed inside and outside of a transit zone, which compares the amount and type of illicit drugs removed, including drugs abandoned at sea, by the maritime security components of DHS in any fiscal year to the average of the amount and type of illicit drugs removed by such maritime components for the immediately preceding 5 fiscal years. Id. at § 223(d)(1)(C).

<sup>e</sup>A cocaine removal effectiveness rate for cocaine removed inside a transit zone and outside a transit zone, which compares the amount of cocaine removed by the maritime security components of DHS by the total documented cocaine flow rate, as contained in federal drug databases. Id. at § 223(d)(1)(D)

<sup>f</sup>A response rate, which compares the ability of the maritime security components of DHS to respond to and resolve known maritime threats, whether inside or outside a transit zone, by placing assets on-scene, to the total number of events with respect to which the department has known threat information. Id. at § 223(d)(1)(E). According to DHS officials, they are developing this metric and expect to include it in the fiscal year 2019 report.

<sup>g</sup>An intergovernmental response rate, which compares the ability of the maritime security components of DHS or other U.S. government entities to respond to and resolve actionable maritime threats, whether inside or outside a transit zone, with the number of such threats detected. Id. at § 223(d)(1)(F). According to DHS officials, they are developing this metric and expect to include it in the fiscal year 2019 report.

DHS officials reported that they were still exploring options to collect response rate measures data for the “DHS Maritime Threat Response Rate” and the “Intergovernmental Maritime Threat Response Rate” metrics that would meet the intent of the NDAA. DHS officials estimated that these metrics would be included in the fiscal year 2019 *Border Security Metrics Report*.

## Description

This metric was not specifically defined in the National Defense Authorization Act for Fiscal Year 2017 (NDAA). The NDAA described situational awareness as the knowledge and understanding of current unlawful cross-border activity, including (1) threats and trends concerning illicit trafficking and unlawful crossings, (2) the ability to forecast future shifts in such threats and trends, (3) the ability to evaluate such threats and trends at a level sufficient to create actionable plans, and (4) the operational capability to conduct persistent and integrated surveillance of the international borders of the United States.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The Department of Homeland Security's (DHS) report stated that the department is in the process of developing a measure for situational awareness in the maritime domain that meets the intent of the NDAA. While this effort is in process, DHS presented data on U.S. Coast Guard and U.S. Customs and Border Protection (CBP) asset (aircraft and cutter or boat) hours contributing to situational awareness or interdiction support and the number of vessel manifests screened.

## Limitations

None identified.

## Additional information

According to CBP Air and Marine Operations officials, they did not have confidence that the data for years prior to fiscal year 2016 were consistent enough for making comparisons across years. Consequently, only data for fiscal year 2016 were included in DHS's report for the metrics related to CBP.



## Description

This metric is a count of the total number of undocumented migrants interdicted, identified directly or indirectly but not interdicted, or otherwise believed to have unlawfully entered the United States through the maritime border.<sup>31</sup>



Source: U.S. Coast Guard. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

None identified.

## Limitations

*Department of Homeland Security (DHS) identified:* The accuracy of migrant flow counts depends on partners to report interdictions and the ability to detect migrants. According to the DHS report, the U.S. Coast Guard relies on partners to report interdictions for compilation in the U.S. Coast Guard's database. Interdictions may be double-counted by the U.S. Coast Guard and its partners because they cooperate during operations and some interdictions by partners may not get reported. Further, some migrants may not be apprehended and leave no evidence, and are therefore excluded from the known flow figures.

*We identified:* According to U.S. Coast Guard officials, there is no centralized database for tracking migrant interdictions, and the decentralized nature of the data collection could lead to errors.

<sup>31</sup>The National Defense Authorization Act for Fiscal Year 2017 defines the known maritime migrant flow as the sum of the number of undocumented migrants that are interdicted in the waters over which the United States has jurisdiction; identified at sea either directly or indirectly, but not interdicted; and those who were otherwise reported, with a significant degree of certainty, as having entered, or attempted to enter the United States through the maritime border.



## Additional information

According to the U.S. Coast Guard, about 90 percent of the data on migrant interdictions and flow originate from U.S. Coast Guard records. U.S. Coast Guard officials said that as part of a department-wide initiative to standardize illegal immigration statistics, they are in the preliminary stages of building a centralized database to enter and maintain information on migrant interdictions.<sup>32</sup> Additionally, officials said they take steps to ensure the reliability of externally reported data such as communicating with partners and working together to reconcile any errors. Within the U.S. Coast Guard, meetings are held regularly to discuss and vet the accuracy of migrant flow data.

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<sup>32</sup>This DHS initiative is known as the Immigration Data Integration Initiative which seeks to ensure that DHS and its components have real-time access to all relevant immigration data needed to support operations, analysis, reporting, and strategic decisions.

## Description

This metric is a rate comparing the amount and type of illicit drugs removed by the Department of Homeland Security (DHS) maritime security components in any fiscal year, including drugs abandoned at sea, to the average amount removed or abandoned in the immediately preceding 5 fiscal years.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

The National Defense Authorization Act for Fiscal Year 2017 called for the metric to include illicit drug removals by all DHS maritime security components, but DHS only provided data on removals by the U.S. Coast Guard.

## Limitations

*We identified:*

- DHS did not explain in its report why it only included data from the U.S. Coast Guard. DHS officials said that the U.S. Coast Guard is the primary DHS component involved in this activity and was the only component that provided data for this metric, but this was not noted in the report.
- According to U.S. Coast Guard officials, some of the data for fiscal 2013 was misreported. Specifically, the quantity removed for methamphetamine should be 0 (report shows 17.4) while the value should be 7.9 kilograms for heroin (report shows 0).

## Additional information

None.

## Description

This metric is a rate comparing the amount of cocaine removed by the Department of Homeland Security (DHS) maritime security components inside and outside the maritime transit zone to the total documented cocaine flow rate.<sup>33</sup> DHS used estimates of noncommercial maritime cocaine flow from the Consolidated Counter Drug Database, which are derived from intelligence reporting and case data.



Source: U.S. Coast Guard. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

None identified.

## Limitations

**DHS identified:** There is less robust intelligence on noncommercial maritime cocaine flow outside the transit zone than inside the transit zone, so data for outside the transit zone are not considered reliable.

**We identified:**

Precise cocaine flow estimates through a particular mode or domain can be difficult to obtain. In our prior work, officials with the Office of National Drug Control Policy and other departments and agencies involved in U.S. counternarcotics efforts told us that it is difficult to obtain precise estimates of cocaine flow because of the difficulty in obtaining specific information about the production of cocaine and how it gets to the

<sup>33</sup>The National Defense Authorization Act for Fiscal Year 2017 defines the transit zone as the sea corridors of the western Atlantic Ocean, the Gulf of Mexico, the Caribbean Sea, and the eastern Pacific Ocean through which undocumented migrants and illicit drugs transit, either directly or indirectly, to the United States. The Joint Interagency Task Force South, under the U.S. Southern Command, oversees detection and monitoring operations of drug smuggling in the transit zone, relying on the vessel and aircraft resources provided by the U.S. Coast Guard, other federal agencies and allied countries.

United States.<sup>34</sup> We have also previously reported that when confronted with threats to their activities, drug-trafficking organizations use a variety of techniques to quickly change their modes of operation, thus avoiding capture of their personnel and seizure of their illegal drugs. For example, when air interdiction efforts have proven successful, traffickers have increased their use of maritime and overland transportation routes.<sup>35</sup>

## Additional information

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According to U.S. Coast Guard officials, DHS officials hold quarterly inter-agency meetings to review the reliability of performance data related to cocaine interdiction performance.

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<sup>34</sup>GAO Drug Control: Agencies Need to Plan for Likely Declines in Drug Interdiction Assets, and Develop Better Performance Measures for Transit Zone Operations, [GAO-06-200](#) (Washington, D.C.: Nov. 15, 2005).

<sup>35</sup>GAO Drug Control: Long-Standing Problems Hinder U.S. International Efforts, [GAO/NSIAD-97-75](#) (Washington, D.C.: Feb. 27, 1997).

## Air and Marine Security in the Land Domain

Air and Marine Operations (AMO) is a federal law enforcement agency within CBP that interdicts unlawful people and cargo approaching U.S. borders, investigates criminal networks, and provides domain awareness in the air and maritime environments, among other things.<sup>36</sup>

The metrics in this domain measure AMO's flight hours, individuals detected, and apprehensions, among other things. DHS included 7 of 8 metrics within this domain called for in the NDAA in its fiscal year 2017 *Border Security Metrics Report*, as shown in table 7.

**Table 7: Status of Air and Marine Security Metrics in the Land Domain in the Department of Homeland Security's (DHS) Fiscal Year 2017 Border Security Metrics Report**

Metric	Included in the fiscal year 2017 <i>Border Security Metrics Report</i>	Not included in the fiscal year 2017 <i>Border Security Metrics Report</i>
1 Flight hour effectiveness rate <sup>a</sup>	✓	
2 Funded flight hour effectiveness rate <sup>b</sup>	✓	
3 Air and Marine Operations (AMO) readiness rate <sup>c</sup>	✓	
4 AMO weather-related cancellation rate <sup>d</sup>	✓	
5 AMO individuals detected <sup>e</sup>	✓	
6 AMO apprehensions assisted <sup>f</sup>	✓	
7 Illicit drug seizures assisted by AMO <sup>g</sup>	✓	
8 AMO actionable intelligence <sup>h</sup>		✓

Source: GAO analysis of DHS's fiscal year 2017 *Border Security Metrics Report*. | GAO-19-305

<sup>a</sup>A flight hour effectiveness rate, which compares AMO flight hours requirements to the number of flight hours flown by AMO. 6 U.S.C. § 223(e)(1)(A).

<sup>b</sup>A funded flight hour effectiveness rate, which compares the number of funded flight hours appropriated to AMO to the number of actual flight hours flown by AMO. Id. at § 223(e)(1)(B).

<sup>c</sup>A readiness rate, which compares the number of aviation missions flown by AMO to the number of aviation missions cancelled by AMO due to maintenance, operations, or other causes. Id. at § 223(e)(1)(C).

<sup>d</sup>The number of missions cancelled by AMO due to weather compared to the total planned missions. Id. at § 223(e)(1)(D).

<sup>e</sup>The number of individuals detected by AMO through the use of unmanned aerial systems and manned aircraft. Id. at § 223(e)(1)(E).

<sup>f</sup>The number of apprehensions assisted by AMO through the use of unmanned aerial systems and manned aircraft. Id. at § 223(e)(1)(F).

<sup>g</sup>The number and quantity of illicit drug seizures assisted by AMO through the use of unmanned aerial systems and manned aircraft. Id. at § 223(e)(1)(G).

<sup>h</sup>The number of times that actionable intelligence related to border security was obtained through the use of unmanned aerial systems and manned aircraft. Id. at § 223(e)(1)(H). DHS reported that the "AMO actionable intelligence" metric was under review and estimated that the department would provide information on this metric in its fiscal year 2019 report to Congress.

DHS reported that the "AMO actionable intelligence" metric was under review and estimated that the department would provide information on this metric in its 2019 annual report to Congress.

<sup>36</sup>Interdiction means to intercept, apprehend, or disrupt threats in the land, sea, and air domains as they move toward or across the U.S. borders.

## **Description**

This metric is a rate comparing the number of flight hour requirements to the number of flight hours flown by Air and Marine Operations (AMO) in the land domain.

## **Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report**

None identified.

## **Limitations**

*Department of Homeland Security (DHS) identified:* Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.

*We identified:* DHS used the terms “funded flight hours,” “unfunded flight hours,” and “unconstrained flight hours” in the report without clearly defining them. AMO officials stated that a definition of these terms will be included in the next report.

## **Additional information**

AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.

## **Description**

This metric is a rate comparing the number of funded flight hours appropriated to Air and Marine Operations (AMO) to the number of actual flight hours flown.

## **Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report**

None identified.

## **Limitations**

*Department of Homeland Security (DHS) identified:* Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.

## **Additional information**

AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.

## Description

This metric is a rate comparing the number of aviation missions flown by Air and Marine Operations (AMO) to the number of aviation missions cancelled by AMO due to maintenance, operations, or other causes.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

For the denominator for this rate, the National Defense Authorization Act for Fiscal Year 2017 only requested the number of missions cancelled due to causes within AMO control, such as maintenance, personnel, and asset availability. However, the Department of Homeland Security (DHS) used the total number of mission requests, which also includes the number of missions flown in addition to the number of missions cancelled for reasons within AMO control.

## Limitations

*DHS identified:* Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.

## Additional information

AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.



## **Description**

This metric is a rate comparing the number of missions cancelled by Air and Marine Operations (AMO) due to weather compared to the total planned missions.

## **Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report**

None identified.

## **Limitations**

*Department of Homeland Security (DHS) identified:* Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.

## **Additional information**

AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.

## Description

This metric is a count of the number of individuals detected by Air and Marine Operations (AMO) through the use of unmanned aerial systems and manned aircraft.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

None identified.

## Limitations

*Department of Homeland Security (DHS) identified:*

- Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.
- DHS data on detections from manned aircraft were limited to those that led to apprehensions and arrests, and data from unmanned aircraft were limited to the number of Vehicle and Dismount Exploitation Radar (VADER) detections.<sup>37</sup> AMO did not track data from all sensors on unmanned and manned aircraft, and considers this metric to be a work in progress.

*We identified:* In February 2017 we reported that some mission data (such as asset assists) for unmanned aerial systems were collected inconsistently across operation locations, which could affect the accuracy of the counts provided.<sup>38</sup> We recommended that U.S. Customs and Border Protection—of which AMO is a component—update and maintain guidance for recording mission information in its data collection system, and provide training to users of the system. DHS completed implementation of these recommendations in July 2018. Although the recommendations have been implemented, this limitation is relevant because the data presented (for fiscal year 2016) were collected prior to their implementation.

## Additional information and planned actions by the Department of Homeland Security

DHS expects to provide more comprehensive data for this metric in the next annual report. AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.

<sup>37</sup>VADER is a radar system that collects radar images of moving objects. U.S. Customs and Border Protection tracks the number of detections of cross-border illegal activity made using VADER equipped on its Predator B aircraft.

<sup>38</sup>GAO, *Border Security: Additional Actions Needed to Strengthen Collection of Unmanned Aerial Systems and Aerostats Data*, [GAO-17-152](#) (Washington, D.C.: Feb. 16, 2017).

## Description

This metric is a count of the number of apprehensions assisted by Air and Marine Operations (AMO) through the use of unmanned aerial systems and manned aircraft.



Source: U.S. Customs and Border Protection. | GAO-19-305

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

None.

## Limitations

*Department of Homeland Security (DHS) identified:* Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.

*We identified:* In February 2017 we reported that some mission data (such as asset assists) for unmanned aerial systems were collected inconsistently across operation locations, which could affect the accuracy of the counts provided.<sup>39</sup> We recommended that U.S. Customs and Border Protection—of which AMO is a component—update and maintain guidance for recording mission information in its data collection system, and provide training to users of the system. DHS completed implementation of these recommendations in July 2018.

Although the recommendations have been implemented, this limitation is relevant because the data presented (for fiscal year 2016) were collected prior to their implementation.

<sup>39</sup>[GAO-17-152](#).

## Additional information

In addition to the number of apprehensions assisted, DHS also provided the number of enforcement flight hours used for the assists. AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.

## Description

This metric is a count of the number and quantity of illicit drug seizures assisted by Air and Marine Operations (AMO) through the use of unmanned aerial systems and manned aircraft.

## Differences between the National Defense Authorization Act for Fiscal Year 2017 and the Department of Homeland Security's report

None.

## Limitations

*Department of Homeland Security (DHS) identified:* Data prior to fiscal year 2016 were unavailable. According to AMO officials, this is because AMO did not collect these data prior to fiscal year 2016, or because older data were not comparable.

*We identified:* In February 2017 we reported that some mission data (such as asset assists) for unmanned aerial systems were collected inconsistently across operation locations, which could affect the accuracy of the counts provided.<sup>40</sup> We recommended that U.S. Customs and Border Protection—of which AMO is a component—update and maintain guidance for recording mission information in its data collection system, and providing training to users of the system. DHS completed implementation of these recommendations in July 2018. Although the recommendations have been implemented, this limitation is relevant because the data presented (for fiscal year 2016) were collected prior to their implementation.

## Additional information

In addition to the drug seizures assisted (in pounds), DHS also provided the number of enforcement flight hours used for the assists. AMO officials said they have taken steps to improve how they track flight hour data, such as by adding new data fields to AMO's system and providing training to staff.

<sup>40</sup>[GAO-17-152](#).

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# Appendix II: Other Metrics the Department of Homeland Security Could Use to Measure the Effectiveness of Border Security

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Based on findings from previous reviews of border security programs and efforts, we have recommended other metrics that the Department of Homeland Security (DHS) could use to help measure the effectiveness of border security. The tables that follow provide information about these recommended metrics in each of the four domains listed in the National Defense Authorization Act for Fiscal Year 2017—between ports of entry, at ports of entry, in the maritime border domain, and the air and marine security in the land domain. The recommendations listed in the tables below remain open; however, implementing them would provide DHS with additional indicators and metrics that could provide important insights into the state of border security.

**Table 8: Other Metrics the Department of Homeland Security (DHS) Could Use to Measure the Effectiveness of Border Security Between Ports of Entry**

Product title and number	Summary and finding	Recommended metric	Status of recommendation implementation
<i>Southwest Border Security: Additional Actions Needed to Better Assess Fencing's Contributions to Operations and Provide Guidance for Identifying Capability Gaps</i> (GAO-17-331)	In February 2017, we reported on the use of border fencing along the southwest border. We found that, among other things, U.S. Border Patrol (Border Patrol) collects data that could be useful to assess the contributions of border fencing to border security operations, but had not conducted such an assessment.	Border Patrol should develop metrics to assess the contributions of pedestrian and vehicle fencing to border security along the southwest border using the data Border Patrol already collects and apply this information, as appropriate, when making investment and resource allocation decisions.	DHS agreed with the recommendation and reported that Border Patrol planned to develop and incorporate metrics into its operational control framework for southwest border security operations. As of October 2018, Border Patrol planned to test the metrics and implement them in the framework by September 2019. To fully implement this recommendation, Border Patrol should complete its efforts to develop metrics for assessing the contributions of pedestrian and vehicle fencing to border security operations and apply these metrics when making resource allocation decisions.
<i>Arizona Border Surveillance Technology Plan: Additional Actions Needed to Strengthen Management and Assess Effectiveness</i> (GAO-14-368) <sup>a</sup>	In March 2014, we reported on the status of DHS's Arizona Border Surveillance Plan—a plan for security technology deployment across the Arizona border which includes a mix of radars, sensors, and cameras to help provide security for the Arizona border. We found that while U.S. Customs and Border Protection (CBP) defined mission benefits for the technology programs under the Plan, the agency did not develop key attributes for performance metrics for all surveillance technologies to be deployed as part of the Plan.	CBP should analyze available data on apprehensions and seizures and technological assists, in combination with other relevant performance metrics or indicators, as appropriate, to determine the contribution of surveillance technologies to CBP's border security efforts.	CBP agreed with the recommendation and in May 2017, Border Patrol officials demonstrated a new system, intended to allow for more comprehensive analysis of the contributions of surveillance technologies to Border Patrol's mission. In July 2018 Border Patrol distributed a report to its leadership that included, among other things, the proportion of apprehensions in which certain surveillance technologies were utilized during the first three quarters of fiscal year 2018. However, according to Border Patrol officials, some of the data in the report were not reliable due to data entry errors. Border Patrol officials stated they have plans for training, system integration, and additional steps intended to improve data entry and reporting consistency by the first quarter of fiscal year 2020.

**Appendix II: Other Metrics the Department of Homeland Security Could Use to Measure the Effectiveness of Border Security**

<b>Product title and number</b>	<b>Summary and finding</b>	<b>Recommended metric</b>	<b>Status of recommendation implementation</b>
<i>Arizona Border Surveillance Technology: More Information on Plans and Costs Is Needed before Proceeding</i> (GAO-12-22) <sup>a</sup>	<p>In November 2011, we reported on CBP's plans for developing and implementing a new approach for using surveillance technology (Arizona Border Surveillance Technology Plan) along the southwest border in Arizona.</p> <p>We found that CBP did not have the information needed to fully support and implement the Plan in accordance with DHS and Office of Management and Budget guidance. Further, we found that CBP had not defined the mission benefits expected from implementing the new Plan. We concluded that defining the expected benefits could help improve CBP's ability to assess the effectiveness of the Plan.</p>	CBP should determine the mission benefits to be derived from implementation of the Arizona Border Surveillance Technology Plan and develop and apply key attributes for metrics to assess program implementation.	DHS agreed with the recommendation and the Border Patrol has made some progress in identifying key attributes for metrics to assess implementation of the Plan, such as the proportion of apprehensions in which certain technologies were utilized, but it has not yet fully assessed implementation of the Plan. In December 2018, Border Patrol officials stated they planned to meet in early 2019 to discuss additional actions to ensure they have access to and are using performance information about existing technologies as they make decisions about future resource investments in additional or new technologies.
<i>Border Patrol: Checkpoints Contribute to Border Patrol's Mission, but More Consistent Data Collection and Performance Measurement Could Improve Effectiveness</i> (GAO-09-824) <sup>b</sup>	In August 2009, we reported on the contributions and impact of checkpoints along the southwest border. We found that Border Patrol had identified some measures to evaluate the impact checkpoints have on local communities in terms of quality of life, but Border Patrol had not implemented the measures. As a result, Border Patrol lacked information on how checkpoint operations could affect nearby communities.	CBP should implement quality of life measures that have already been identified by Border Patrol to evaluate the impact checkpoints have on local communities. Implementing these measures would include identifying appropriate data sources available at the local, state, or federal level, and developing guidance for how data should be collected and used in support of these measures.	CBP agreed with the recommendation. In June 2018, Border Patrol reported that its Checkpoint Program Management Office is making progress identifying and implementing such performance measures, and Border Patrol expects to fully implement the measures by September 2019.

Source: GAO analysis of GAO reports related to border security. | GAO-19-305

<sup>a</sup>We recently updated our work on this topic, see GAO, *Southwest Border Security: Border Patrol Is Deploying Surveillance Technologies but Needs to Improve Data Quality and Assess Effectiveness*, GAO-18-119, (Washington, D.C.: Nov. 30, 2017).

<sup>b</sup>We recently updated our work on this topic, see GAO, *Border Patrol: Issues Related to Agent Deployment Strategy and Immigration Checkpoints*, GAO-18-50, (Washington, D.C.: Nov. 8, 2017).



**Appendix II: Other Metrics the Department of  
Homeland Security Could Use to Measure the  
Effectiveness of Border Security**

**Table 9: Other Metrics the Department of Homeland Security (DHS) Could Use to Measure the Effectiveness of Border Security At Ports of Entry**

<b>Product title and number</b>	<b>Summary and finding</b>	<b>Recommended metric</b>	<b>Status of recommendation implementation</b>
<i>U.S. Ports of Entry: CBP Public-Private Partnership Programs Have Benefits, but CBP Could Strengthen Evaluation Efforts</i> (GAO-18-268)	In March 2018, we reported on the agreements, funds, and donations that U.S. Customs and Border Protection's (CBP) and General Services Administration have received under the Reimbursable Services Program (RSP) and Donations Acceptance Program (DAP). <sup>a</sup> We found that CBP uses various processes to monitor and evaluate its partnerships, but could benefit from establishing an evaluation plan to assess overall program performance. We concluded that given CBP's staffing challenges and anticipated growth of the RSP and DAP, an evaluation plan could better position CBP to further integrate evaluation activities into program management.	CBP should develop and implement an evaluation plan to be used to assess the overall performance of the RSP and DAP, which could include, among other things, measurable objectives, performance criteria, evaluation methodologies, and data collection plans to inform future program decisions.	CBP agreed with this recommendation and noted that it would take steps to implement it. As of December 2018, CBP developed and is implementing an evaluation plan to assess the overall performance of the RSP and DAP. CBP plans to issue an internal report on its evaluation in April 2019, and thereafter, on an annual basis.
<i>Supply Chain Security: CBP Needs to Enforce Compliance and Assess the Effectiveness of the Importer Security Filing and Additional Carrier Requirements</i> (GAO-17-650)	In July 2017, we reported on CBP's implementation of its Importer Security Filing (ISF) program related to compliance, enforcement, and performance. We found that the ISF rule data have improved CBP's ability to identify high-risk cargo shipments, but CBP could collect additional performance information to better evaluate program effectiveness. <sup>b</sup>	CBP should identify and collect additional performance information on the impact of the ISF rule data, such as the identification of shipments containing contraband, to better evaluate the effectiveness of the ISF program.	CBP agreed with the recommendation. In June 2018, CBP reported that CBP staff continue to work on additional performance metrics to evaluate the effectiveness of the ISF program, and are analyzing data to identify, among other things, the number of unmanifested containers and how or if they were mitigated before arrival. In February 2019, CBP reported that implementation of the recommendation is ongoing and it expects to complete this work by December 2019.

**Appendix II: Other Metrics the Department of  
Homeland Security Could Use to Measure the  
Effectiveness of Border Security**

<b>Product title and number</b>	<b>Summary and finding</b>	<b>Recommended metric</b>	<b>Status of recommendation implementation</b>
<i>Border Security: CBP Aims to Prevent High-Risk Travelers from Boarding U.S.-Bound Flights, but Needs to Evaluate Program Performance</i> (GAO-17-216)	<p>In January 2017, we reported on CBP's air predeparture programs—programs designed to interdict high-risk individuals, such as potential terrorists, human traffickers, drug smugglers, and otherwise inadmissible persons, before they board U.S.-bound aircraft—and CBP's plans to expand them.</p> <p>We found that while CBP's predeparture programs have helped identify and interdict high-risk travelers, CBP had not fully evaluated the overall effectiveness of these programs using performance measures and baselines. CBP tracked some data, such as the number of travelers deemed inadmissible, but had not set baselines to determine if predeparture programs are achieving goals. By developing and implementing a system of performance measures and baselines, CBP would be better positioned to assess if the programs are achieving their goals.</p>	CBP should develop and implement a system of performance measures and baselines to evaluate the effectiveness of CBP's predeparture programs and assess whether the programs are achieving their stated goals.	CBP agreed with the recommendation and the CBP Office of Field Operations reported that it established a working group to develop and implement a system of performance measures and baselines to evaluate the effectiveness of CBP's predeparture programs. As of July 2017, CBP reported that the working group had developed three performance measures for its predeparture programs. At that time, according to Office of Field Operations officials, they expected fiscal year 2018 to be the first complete year that each of these measures is calculated and used as the baseline year for future program assessments.

Source: GAO analysis of GAO reports related to border security. | GAO-19-305

<sup>a</sup>Under the Reimbursable Services Program, partners reimburse CBP for providing services that exceed CBP's normal operations, such as paying overtime for CBP personnel that provide services at ports of entry outside normal business hours. The Donations Acceptance Program enables partners such as local municipalities to donate property or provide funding for port of entry infrastructure improvements.

<sup>b</sup>In January 2009, CBP implemented the ISF and Additional Carrier Requirements, generally referred to as the ISF rule. *Importer Security Filing and Additional Carrier Requirements*, 73 *Fed. Reg.* 71,730 (Nov. 25, 2008) (codified at 19 C.F.R. pts. 4, 12, 18, 101, 103, 113, 122, 123, 141, 143, 149, 178, & 192). The ISF rule requires that importers (who order containerized and break bulk goods—commodities such as bound lumber or goods stacked on wooden pallets—to be shipped from foreign sources to the United States via oceangoing vessels) and vessel carriers (who physically transport goods from foreign ports to ports in the United States) submit additional cargo information, such as country of origin, to CBP before the cargo is loaded onto U.S.-bound vessels. See 19 C.F.R. §§ 4.7c, 4.7d, 149.1-149.6.

Table 10: Other Metrics the Department of Homeland Security (DHS) Could Use to Measure the Effectiveness of Border Security in the Maritime Border Domain

Product title and number	Summary and finding	Recommended metric	Status of recommendation implementation
Coast Guard: Actions Needed to Enhance Performance Information Transparency and Monitoring (GAO-18-13)	In October 2017, we reported on the U.S. Coast Guard's (Coast Guard) performance goals. We found that although the Coast Guard's performance goals are generally aligned with its statutory missions, the Coast Guard did not explain why certain aspects of mission performance are measured while others are not. We concluded that in the absence of documentation explaining how existing performance goals address each mission, it is unclear the extent to which the Coast Guard's performance goals encompass all of its mission activities.	Coast Guard should either develop new performance goals to address mission activity gaps, or explain in the Coast Guard's Annual Performance Report (APR) why certain aspects of mission performance are measured while others are not.	In October 2017, the Coast Guard agreed with the recommendation and stated that it would add new measures in future APRs and explain what is measured and what is not, as appropriate. In February 2018, the Coast Guard provided us with its updated fiscal year 2017 APR. We found that the updated APR explained why the Coast Guard's two performance goals related to its drug interdiction mission focus only on cocaine interdiction. However, the updated APR did not include additional goals or explain why certain aspects of mission performance were not measured for the four other performance goals we previously identified as not fully addressing all related mission activities. In order to fully implement our recommendation as intended, in instances in which performance goals do not fully address all of the respective mission activities, the Coast Guard's APR should explain the Coast Guard's rationale for why certain aspects of mission performance are measured while others are not.

Source: GAO analysis of GAO report related to border security. | GAO-19-305

Appendix II: Other Metrics the Department of Homeland Security Could Use to Measure the Effectiveness of Border Security

Table 11: Other Metrics the Department of Homeland Security (DHS) Could Use to Measure the Effectiveness of Air and Marine Border Security in the Land Domain

Product title and number	Summary and finding	Recommended metric	Status of recommendation implementation
<i>Border Security: Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling</i> (GAO-17-474) <sup>a</sup>	In May 2017, we reported on DHS's efforts to address threats posed by smuggling in the aerial, subterranean, and maritime environments. We found that DHS components collected various data regarding the prevalence of smuggling using ultralight aircraft, cross-border tunnels, and selected maritime smuggling methods, but had not established performance measures and associated targets to assess the effectiveness of their efforts specific to addressing these threats.	DHS should establish and monitor performance measures and targets related to <ul style="list-style-type: none"> <li>ultralight aircraft;</li> <li>cross-border tunnels; and</li> <li>panga boat (a fishing vessel) and recreational vessel smuggling.</li> </ul>	<p><b>Ultralight aircraft smuggling.</b> DHS agreed with our recommendation related to ultralight aircraft. As of June 2018, U.S. Customs and Border Protection (CBP) reported that Air and Marine Operations and the U.S. Border Patrol drafted a performance measure and that CBP expects that reviews and approval of the measure will be completed by November 2019.</p> <p><b>Cross-border tunnel smuggling.</b> DHS agreed with our recommendation related to cross-border tunnels. As of June 2018, CBP reported that U.S. Immigration and Customs Enforcement (ICE) was taking the lead on developing measures related to cross-border tunnels.</p> <p><b>Panga boats and recreational vessel smuggling.</b> DHS did not agree with our recommendation. DHS stated that it did not believe that performance measures and targets related to smuggling by panga boats would provide the most useful strategic assessment of operations to prevent all illicit trafficking. DHS stated that its Office of Policy, Strategy, and Plans is to work with the U.S. Coast Guard, CBP, and ICE, among others, to better evaluate the effectiveness of all operations that work to prevent the illegal entry of goods and people into the country, as appropriate. We continue to believe that the recommendation is valid and will monitor DHS's efforts to address it.</p>

Source: GAO analysis of GAO report related to border security. | GAO-19-305

<sup>a</sup>In addition to smuggling using ultralight aircraft in the air and marine domain, this work addressed smuggling methods relevant to other domains including cross-border tunnel smuggling which is related to between ports of entry domain, and panga boats and recreational vessels smuggling related to the maritime domain.

# Appendix III: Comments from the Department of Homeland Security



March 7, 2019

Rebecca Gambler  
Director, Homeland Security and Justice  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Re: Management Response to Draft Report GAO-19-305, "BORDER SECURITY: DHS Should Improve the Quality of Unlawful Border Entry Information and Other Metric Reporting"

Dear Ms. Gambler:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's recognition that (1) securing U.S. borders is a complex undertaking for which DHS has made significant investments over the years, (2) having data and information available on the state of border security is important for stakeholders to understand the effectiveness of those investments, and (3) DHS's fiscal year (FY) 2017 "Border Security Metrics Report" (BSMR) makes an important contribution in providing such data and information.

We also note that several limitations GAO identified in the FY 2017 BSMR are already being addressed in the FY 2018 BSMR, which is expected to be released by March 29, 2019. For example, the FY 2018 report will include data on "northern and coastal border apprehensions, including apprehensions of family units and unaccompanied children." The report will also include an estimate of unknown major infractions at ports of entry using Compliance Examination Program data. In addition, as a result of a working group led by the DHS Office of Strategy, Policy, and Plans (PLCY) Office of Immigration Statistics (OIS), with U.S. Customs and Border Protection (CBP) and the United States Coast Guard (USCG), two additional metrics in the maritime domain not addressed in the FY 2017 and FY 2018 reports are on track to be included in the FY 2019 report.

The draft report contained four recommendations with which the Department concurs. Attached find our detailed response to each recommendation. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,



JIM H. CRUMPACKER, CIA, CFE  
Director  
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: Management Response to Recommendations  
Contained in GAO 19-305**

GAO recommended that:

**Recommendation 1:** The Secretary of Homeland Security should develop and implement a process to systematically review the reliability of the data used in its *Border Security Metrics Report* metrics and comprehensively identify any limitation with the data and methodologies that underlie its metrics.

**Response:** Concur. DHS PLCY will work with operational Components (i.e., CBP and USCG) to review the reliability of statistical data derived from operational systems. Given the scope of data collection efforts identified in the BMSR, this review may take until the end of FY 2020 to complete. Estimated Completion Date (ECD): September 30, 2020.

**Recommendation 2:** The Secretary of Homeland Security should ensure the communication of the limitations of the metrics identified through the systemic review in the department's annual *Border Security Metrics Report*.

**Response:** Concur. DHS PLCY OIS has already included a detailed discussion of known limitations in the FY 2017 BMSR, and will continue to identify known limitations as well as any progress made to mitigate previously identified limitations in all subsequent versions of the report (to be released annually). We request that GAO consider this recommendation resolved and closed as implemented.

**Recommendation 3:** The Under Secretary for the Office of Strategy, Policy, and Plans should include the results of sensitivity analyses to key assumptions in its statistical models of unlawful entry estimates in its annual *Border Security Metrics Report*.

**Response:** Concur. DHS PLCY OIS will continue its effort to conduct a sensitivity analysis for the FY 2020 BMSR and will include results in the report, as appropriate. ECD: September 30, 2020.

**Recommendation 4:** The Under Secretary for the Office of Strategy, Policy, and Plans should include measures of statistical uncertainty for all metrics based on estimates derived from statistical models in its annual *Border Security Metrics Report*.

**Response:** Concur. DHS PLCY OIS will continue its effort to estimate statistical uncertainty for the FY 2020 BMSR and will include results in the report, as appropriate. ECD: September 30, 2020.



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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Rebecca Gambler, (202) 512-8777 or [gambler@gao.gov](mailto:gambler@gao.gov)

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## Staff Acknowledgments

In addition to the contact named above, Taylor Matheson (Assistant Director), David Alexander, Kelsey Burdick, Lilia Chaidez, Kathleen Donovan, Michele Fejfar, Sally Gilley, Christopher Hatscher, Eric Hauswirth, Mikaela Meyer, Sasan J. “Jon” Najmi, Kevin Reeves, and Jeff Tessin made key contributions to this report.



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