

# Appendices

## Data and Methods

This criminal justice system report card is comparative. It is based on objective, available data from individual provinces and territories. The calculation of grades was a quantitative statistical exercise, not a subjective qualitative one.

We examined how each province and territory performed in relation to each other on a variety of metrics and we assigned grades using a standard normal transformation. We did not assign quotas for how many grades of each category would be assigned, but the nature of the approach means that some provinces and territories must earn grades at B or above and some others must earn grades of C+ or below.<sup>1</sup> As discussed below, standard deviations were used to assign these grades. Currently there are no Canadian standards for these metrics so we are simply comparing the jurisdictions against each other. We hope that this report card generates some discussion around what appropriate benchmarks should be, much as has been done with health care wait times. For example, some provinces have set their own targets for certain metrics that could be valuable as a starting point.

As in any data reporting initiative, we made assumptions on how to best treat the data to give an accurate reflection of how each province performed. Drawing on the analogy of a student's report card, we think of each province and territory as an individual and we examine their performance on a wide range of indicators (like a test or assignment), which we aggregate to a domain which is one of the core objectives of the criminal justice system (like a subject grade) and then aggregate the subject grades to an overall grade.

In the first instance, we sought to update measures used in the previous report card with whatever new data were captured over the past year. For these measures, the scores represent the most recent year of data. Several measures have not been updated in the past year and for these we used the most recent data, which were last year's results consisting of a three-year average. When new data for these measures become available, they will be added to future report cards. We believe that it is better to report limited data than impose exclusion criteria that would leave measures unreported if the data collection was incomplete. We hope this creates an incentive for better reporting in the future.

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<sup>1</sup> A province or territory that scored exactly average would be between a "B" and a "C+." We look at enough places past the decimal point in each case so that no grade falls exactly at the midpoint between two grades.

Below we highlight a number of technical points related to the analysis of the data:

- While individual metrics are normalized (e.g., per capita, per 1,000 crimes, etc.) for overall outcomes we averaged across provinces, but did not weight the data by province size. Had we done so, it would have had the effect of compressing the data towards the score of Ontario; data from smaller provinces would have had very little impact on the overall average.<sup>2</sup>
- For metrics where new data are available, the standard deviation is calculated from the most recent year's data. Where there are no new data, we use the standard deviation of the three-year average that was used in the previous iteration of the Justice Report Card.
- The results for the territories are often well out of line with those for the provinces, so to avoid significantly skewing the data, these are not used in the calculations of the means and standard deviations for each metric. However, scores and grades were calculated for the territories using the means and standard deviations computed for the provinces.
- Figures for the most current year were averaged across the 10 provinces. Then the standard deviation of the 10 provinces was calculated. The difference between each province's score and the mean score is divided by the standard deviation.
- For many of the metrics, a higher value means the province is doing worse, and in these cases the score calculated above is multiplied by -1 (or reverse scored).
- Scores are capped at +3 and -3 standard deviations so that extreme values for individual metrics will not skew the overall results. This only affected scores for the territories.
- Letter grades were then assigned as follows:  
  
Score -1.50 or lower = F  
Between -1.50 and -1.00 = D  
Between -1.00 and -0.50 = C  
Between -0.50 and 0.00 = C+  
Between 0.00 and 0.50 = B  
Between 0.50 and 1.00 = B+  
Between 1.00 and 1.50 = A  
Greater than 1.50 = A+
- Scores and grades are provided for each individual metric.
- Within each domain (i.e., each core objective of the criminal justice system) the scores for each available metric are averaged to give a score.
- As noted above, not all provinces and territories have scores for all metrics. We calculated averages based on the available data.

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<sup>2</sup>A simple example illustrates: suppose we were looking at the average case length. Assume that there are two provinces in a country and Province A has 90 percent of the population and Province B has 10 percent. The average length of a case in Province A is 100 days and in Province B it is 200 days. If we calculate the average of the two provinces, the average case length would be 150 days. However, if we weighted the results, since Province A has 90 percent of the cases, we should calculate it as  $0.9 \times 100 + 0.1 \times 200 = 110$  days. Since our objective is not to calculate a national average, but rather to compare provinces, we do not use weighting when we calculate averages.

- The overall grade is the average of the domain scores and grades are assigned using the rubric above.
- Five year trends are calculated using the slope function within Microsoft Excel. The slope is multiplied by the number of data points (typically five) and divided by the standard deviation of that metric to create a score.
- A score between -0.5 and +0.5 is coded as yellow, indicating that the trend for that metric is flat.
- A score greater than 0.5 for metrics whereby higher scores are worse are coded as red, indicating that the metric is getting observably worse. Conversely, if the score is less than -0.5 for a metric whereby a lower score is a worse outcome, this is also coded as red, again indicating that this metric is getting observably worse.
- A score of greater than 0.5 for metrics whereby higher scores are better is coded as green, indicating that the metric is getting observably better. If the score is less than -0.5 for a metric where a lower score is a better outcome, this is again coded as green, indicating that this metric is getting observably better.
- All calculations were done using Microsoft Excel.

## Data Sources and Limitations

The table on the next page shows each metric used, the years of data available, the source for that data, and any calculations used. In many cases the data available were counts or totals and to account for different population sizes these had to be normalized, typically by the population of that province or territory, or the number of crimes reported in the province or territory for that year.

As noted earlier, not all data were available for all years for all provinces and territories. We hope that in future years, data become more complete.

We also believe that there are many important features of the justice system that are not captured here, simply because the data are not available, or at least not available at the provincial and territorial level. Many provinces do not report civil court data. There is limited information on recidivism and unreported crimes, and the perceptions of individuals towards key justice institutions are not regularly captured. We hope that this report card sparks a wider discussion on justice statistics, what should be measured, and by whom.

The approach taken here is comparative and with this comes an assumption that an average performance warrants a grade of C+ or B. It may be that there are areas where Canada does especially well in comparison to other countries and that all of the provinces and territories deserve higher scores if compared on that basis. By contrast, there may be areas where Canada does especially poorly and all provinces and territories deserve lower grades if assessed globally or based on peer countries. However, determining which metrics these might be and what a “good” or “bad” score would look like is extremely subjective and as such we choose to report the data without imposing such subjective judgments. This report card has the advantage of highlighting over- and under-performing metrics by jurisdiction within Canada, which is in itself a valuable exercise.

Based on feedback from our inaugural criminal justice report card and our own review of the report, we made several changes when we prepared this year’s report card to improve its quality. First, two new data metrics were added to the fairness and access to justice measure: confidence in police and confidence in the justice system. Second, we removed data metrics related to guilty rates because they had been treated inconsistently in the inaugural report and we did not find that they provided any meaningful insights given the litany of accompanying explanations for higher or lower guilty rates. Third, this report uses the more statistically appropriate median rather than average for criminal case length. Finally, several metrics were normalized based on crimes, but are now normalized by offences. All data in this year’s report was extracted directly from CANSIM (Statistics Canada) in 2017, which means that there are some non-material variances in some metrics from last year’s report.

## Metrics, Years and Sources

METRIC	SOURCE	YEAR	NOTES
<b>PUBLIC SAFETY</b>			
Violent Crime Rate per 100,000 Population	CANSIM Table 252-0051 Incident-based crime statistics, by detailed violations, annual	2012-2016	
Property Crime Rate per 100,000 Population	CANSIM Table 252-0051 Incident-based crime statistics, by detailed violations, annual	2012-2016	
Traffic Crime Rate per 100,000 Population	CANSIM Table 252-0051 Incident-based crime statistics, by detailed violations, annual	2012-2016	
Federal Statute Violations per 100,000 Population	CANSIM Table 252-0051 Incident-based crime statistics, by detailed violations, annual	2012-2016	
Other Crime per 100,000 Population	CANSIM Table 252-0051 Incident-based crime statistics, by detailed violations, annual	2012-2016	
Violent Crime Clearance Rate	CANSIM Table 252-0052 Crime severity index and weighted clearance rates, annual	2012-2016	
Non-Violent Crime Clearance Rate	CANSIM Table 252-0052 Crime severity index and weighted clearance rates, annual	2012-2016	
Failure to Appear per 1,000 Offences	CANSIM Table 252-0056 Adult criminal courts, guilty cases by type of sentence, annual	2011-2015	Divided by number of crimes each year x 1,000
Breach of Probation per 1,000 Offences	CANSIM Table 252-0053 Adult criminal courts, number of cases and charges by type of decision, annual	2011-2015	Divided by number of crimes each year x 1,000
Unlawfully at Large per 1,000 Offences	CANSIM Table 252-0053 Adult criminal courts, number of cases and charges by type of decision, annual	2011-2015	Divided by number of crimes each year x 1,000
Failure to comply per 1,000 Offences	CANSIM Table 252-0053 Adult criminal courts, number of cases and charges by type of decision, annual	2011-2015	Divided by number of crimes each year
Police Effective at Enforcing the Law	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	
Police Effective at Ensuring Safety	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	
Proportion Satisfied with Safety	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	
<b>SUPPORT FOR VICTIMS</b>			
Proportion of Offenders Given Restitution Orders per 1,000 crimes	Table 252-0056 Adult criminal courts, guilty cases by type of sentence, annual	2011-2015	Divided by number of guilty convictions x 1,000
Police Supplying Information*	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	

Police Being Approachable*	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	
Referrals to Victim Services per 1,000 crimes*	Table 256-0019 Victim services survey, number of clients assisted by victim service agencies, occasional	2008, 2010, 2012	Number divided by crimes that year *1,000
<b>COSTS AND RESOURCES</b>			
Cost of Corrections per capita in Doilars	Table 251-0018 Adult correctional services, operating expenditures for provincial, territorial and federal programs, annual	2012- 2016	Amount divided by resident population that year
Average Daily inmate Cost in Dollars	Table 251-0018 Adult correctional services, operating expenditures for provincial, territorial and federal programs, annual	2012- 2016	
Number of Police per 100,000 pop	<a href="http://www.statcan.gc.ca/tables-tableaux/sum-som/I01/cst01/legal05a-eng.htm">http://www.statcan.gc.ca/tables-tableaux/sum-som/I01/cst01/legal05a-eng.htm</a>	2012- 2016	Number divided by resident population that year
Cost of Public Safety per person* in Dollars	<a href="http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&amp;p2=33&amp;id=3850040">http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&amp;p2=33&amp;id=3850040</a>	2012- 2014	Cost divided by resident population that year
<b>FAIRNESS AND ACCESS</b>			
Confidence in Police	<a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2013	
Confidence in Justice System	<a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2013	
Legal Aid Expenditure on Criminal Matters per crime	Table 258-0007 Legal aid plan expenditures, by type of expenditure, annual	2011- 2015	Amount divided by number of crimes
Proportion of Indigenouss Persons in Total Custodial Admissions	Table 251-0022 Adult correctional services, custodial admissions to provincial and territorial programs by Indigenous identity, annual	2012- 2016	Proportion of Indigenouss in custodial admissions divided by Indigenous proportion of population
Perception of Police Being Fair*	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	
<b>EFFICIENCY</b>			
Percent of Cases Stayed or withdrawn	Table 252-0053 Adult criminal courts, number of cases and charges by type of decision, annual	2012- 2016	
Median Criminal Case Length (days)	Table 252-0055 Adult criminal courts, cases by median elapsed time in days, annual	2012- 2016	
Criminal Code Incidents per Police Officer	Table 252-0051 Incident-based crime statistics, by detailed violations, annual	2012- 2016	Number of incidents divide by number of police
Number of Accused on Remand per 1,000 crimes	Table 251-0005 Adult correctional services, average counts of adults in provincial and territorial programs, annual	2012- 2016	Divided by number of crimes x 1,000
Police Responding Promptly*	<a href="http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm">http://statcan.gc.ca/pub/85-002-x/2012001/article/11647/tbl/tbl08-eng.htm</a> <a href="http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm">http://www.statcan.gc.ca/pub/89-652-x/2015007/t/tbl04-eng.htm</a>	2009, 2014	