



U.S. Department of Transportation
Federal Motor Carrier Safety Administration

FMCSA Data Quality Improvement Program

Life of a Record After MCSAP

March 1, 2021

U.S. DOT Volpe Center

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Learning Objectives

- Understand how uploaded records affect the SSDQ measures
- Understand the resources for improving data after it has been uploaded
- Understand the Data Quality Specialists role



Agenda

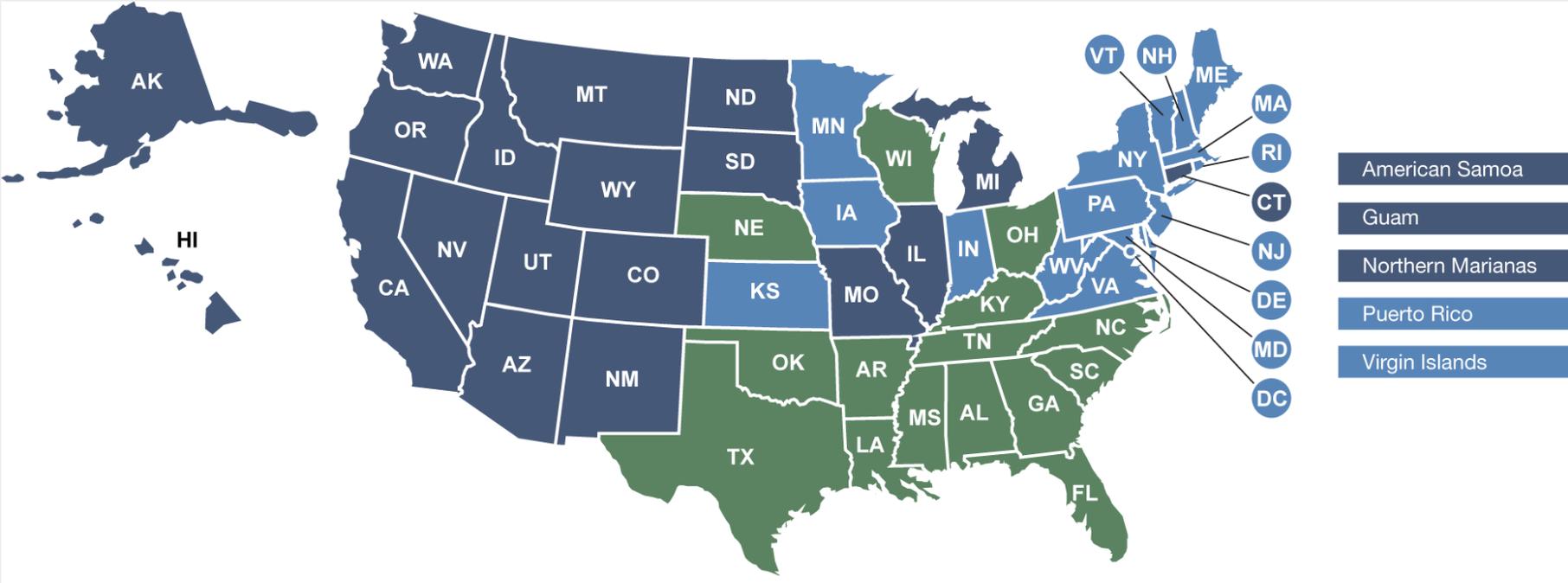
- Who is your Data Quality Specialist (DQS)
- What happens after records are uploaded
- Available resources for improving the quality of the data
- SSDQ success stories
- Wrap up and ask questions

Data Quality Specialists

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Data Quality Website Demo

Poll



Data Quality Resources

- Your Data quality Specialist
 - What do we do?
- Driver Information Resource
- Learning Center

Role of the Data Quality Specialist

- Monitor **inspection and crash rejected records**
 - These are **records rejected by MCMIS**
 - They need to **corrected and re-uploaded**
- This information is also in your SAFETYNET's **Activity Log**
- A lot of rejections can be **prevented by running the SAFETYNET DQ Tool**

STATE	FILE TYPE	REPORT NUMBER	REPORT DATE	REPORT TIME	MULTI SEQUENCE NUMBER	ERROR MESSAGE(S)	BATCH ID(s)	SOURCE OFFICE	LAST SOURCE DATE
XX	CRASH	XX0020067729	5/5/2020	08:22	1	Hazmat Placard must be Y	003114, 003116, 003118, 003120, 003122	1XXS001	9/6/2020
XX	CRASH	XX0020089425	6/17/2020	15:07	1	Non-Motor Carrier cannot have a DOT Number	003114, 003116, 003118, 003120, 003122	1XXS001	9/6/2020
XX	CRASH	XX0020107715	7/28/2020	10:46	2	Carrier ZIP/Postal Code must not be blank	003114, 003116, 003118, 003120, 003122	1XXS001	9/6/2020
XX	CRASH	XX0020113089	8/8/2020	08:30	1	Driver License Class must be A,B,C,D,M or blank	003114, 003116, 003118, 003120, 003122	1XXS001	9/6/2020

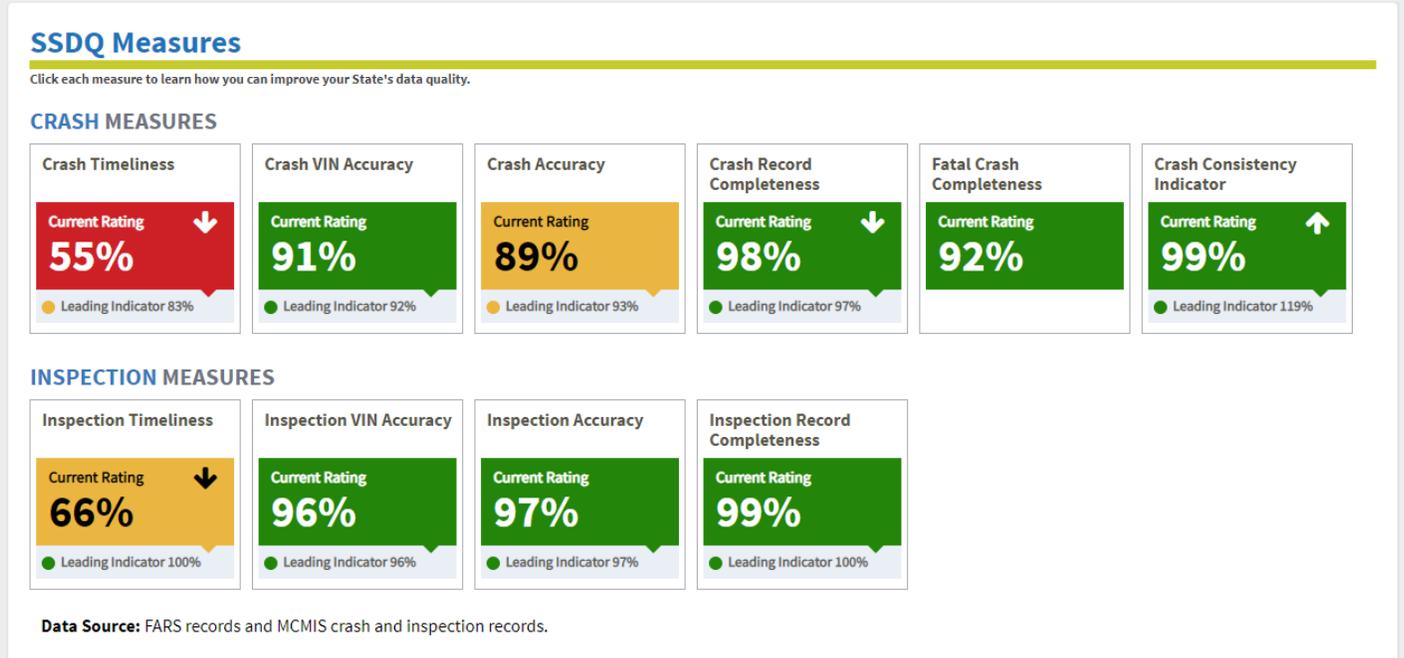
Role of the Data Quality Specialist

- Monitor **inspection and crash deleted records**
 - These are **records deleted in SAFETYNET and subsequently in MCMIS**
 - We look for high counts
- These counts are found in **the MCMIS Upload Edit Results report**

Source Office	Batch ID	File Type	Validation Date	Confirmation Sent Date	Sent Count	Insert Count	Modify Count	Delete Count	Inactivate Count	Reject Count
3XXS001	14780	CRASH	1/4/2019	1/4/2019	12444	37	7	12332		68
3XXS001	130757	INSPECTION	3/19/2019	3/19/2019	4364	232	3	4129		0
3XXS001	14802	INSPECTION	1/18/2019	1/18/2019	1784	227	22	1532		3
2XXD001	9647	INSPECTION	4/12/2019	4/12/2019	1320	256	43	940		81
4XXS001	5344	CRASH	3/11/2019	3/11/2019	672	1	0	667		4
2XXS001	12428	INSPECTION	7/5/2019	7/5/2019	297	0	0	296		1
2XXD001	9842	INSPECTION	2/2/2020	2/2/2020	675	412	14	168		81

Role of the Data Quality Specialist

- Monitor the **SSDQs and Leading Indicators**
 - Current status
 - Downward trends



Role of the Data Quality Specialist

- Ad Hoc Reports



Data Quality Resources Demo

Poll



Success Stories

- Examples for:
 - Crash Timeliness Measure
 - Crash Completeness Measure
 - Fatal Crash Completeness Measure
- Will show how to use the SSDQ Measures to:
 - Find reporting issues
 - Monitor ongoing issues

Timeliness Measures

Crash Timeliness

- % of fatal and non-fatal crash records **uploaded** to MCMIS within 90 days of the crash event over a 12-month period

Inspection Timeliness

- % of inspection records **uploaded** to MCMIS within 21 days of the inspection event over a 12-month period

Timeliness Measure Usual Suspects: Causes

What are the most common causes of **Timeliness** issues?

- Personnel turnover
- Records arriving late from Agencies
- IT issues
- Crash form changes

Maryland Crash Timeliness Measures

MEASURES: Crash Timeliness

Maryland: Overall State Rating > Measures

Your rating is **FAIR**

Current Measure ↑

76%

● Leading Indicator 98%

Good (100-90)

Fair (89-65)

Poor (64-0)

76% of your State's evaluated crash records were reported within 90 days of the crash. These crashes were first uploaded between 09/01/2019 and 08/31/2020. Your rating is fair because your percentage is between 65%-89%. [Learn how this rating is calculated.](#)

NOTE: INSUFFICIENT DATA: State has < 15 records reported in current timeframe AND percentage reported within 90 Days is < 65%

What to do next

Make sure that you understand this measure and your State's rating.

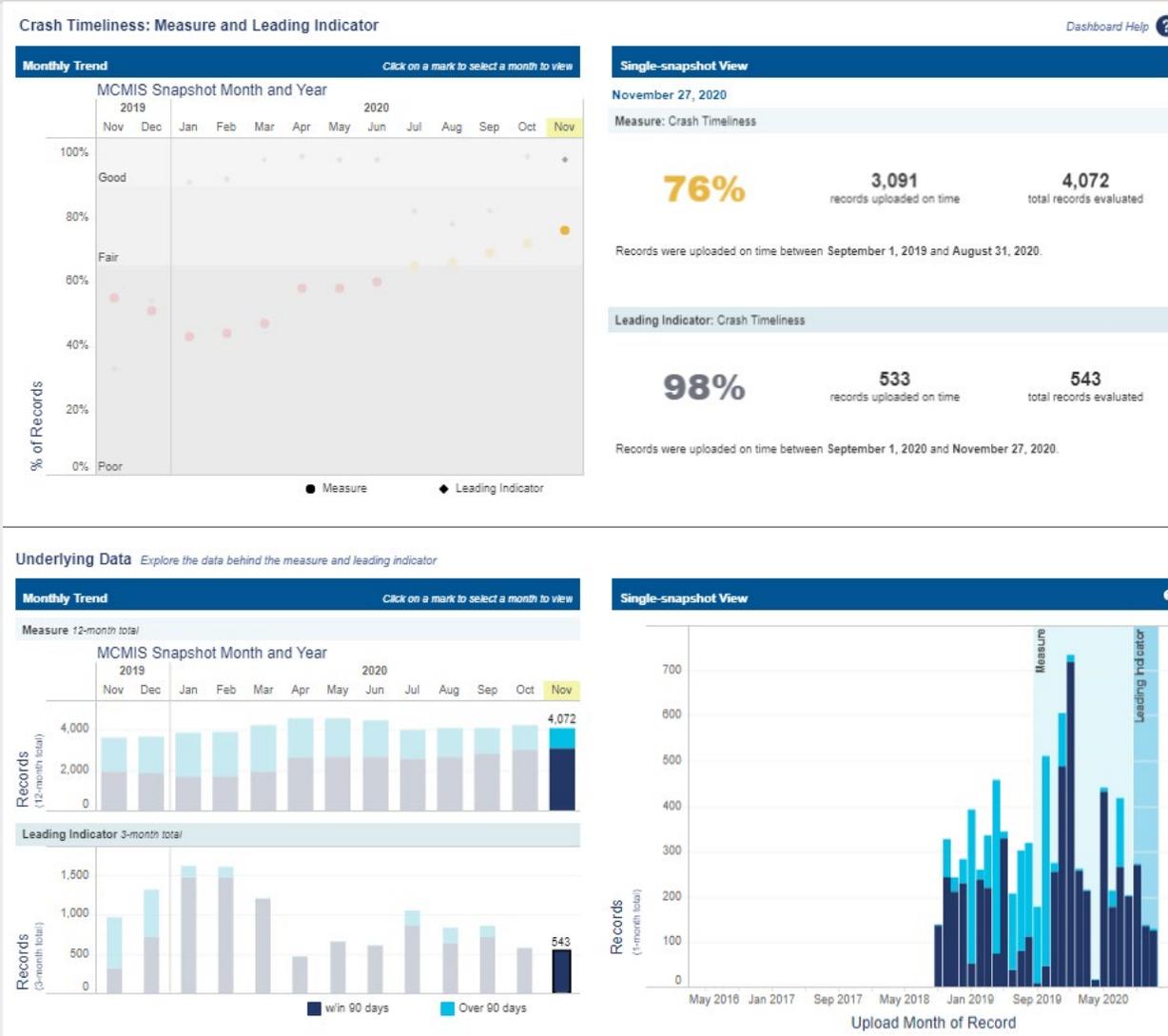
- You can use the dashboard below to view the measure, leading indicator, and dig deeper into the data behind each measure. Select a data point on any of the tables below to learn more about that month's data.
- Hover over the Dashboard Help icon for additional information.

Supplemental Reports

- Prior Methodology Results
- Records to Research
- Evaluation by Upload Month
- Frequency of Record Uploads to MCMIS



Maryland Crash Timeliness Measures



Record Completeness Measures

Crash Record Completeness

- % of fatal and non-fatal crash records uploaded to MCMIS over a 12-month period, which contain complete driver and vehicle information

Inspection Record Completeness

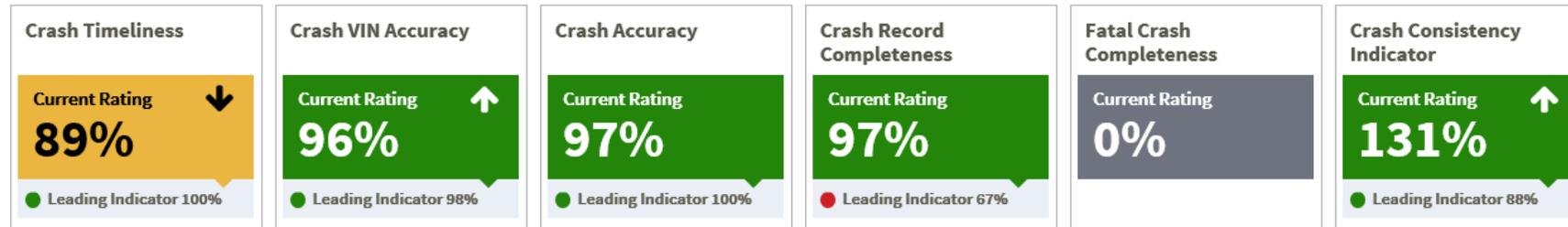
- % of inspection records uploaded to MCMIS over a 12-month period, which contain complete driver and vehicle information

Record Completeness Measures

SSDQ Measures

Click each measure to learn how you can improve your State's data quality.

CRASH MEASURES

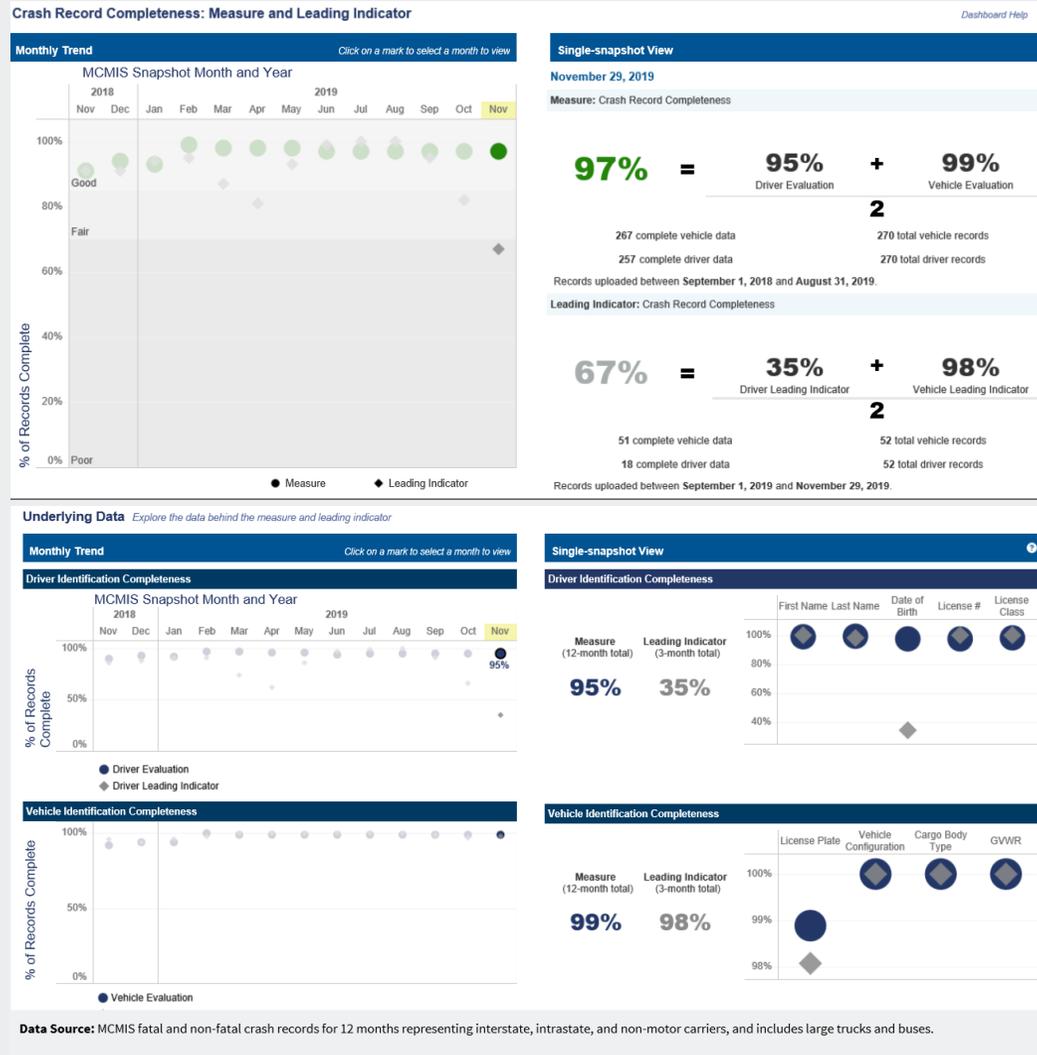


INSPECTION MEASURES



Data Source: FARS records and MCMIS crash and inspection records.

Record Completeness Measures



Record Completeness Measures

SSDQ Measures

Click each measure to learn how you can improve your State's data quality.

CRASH MEASURES

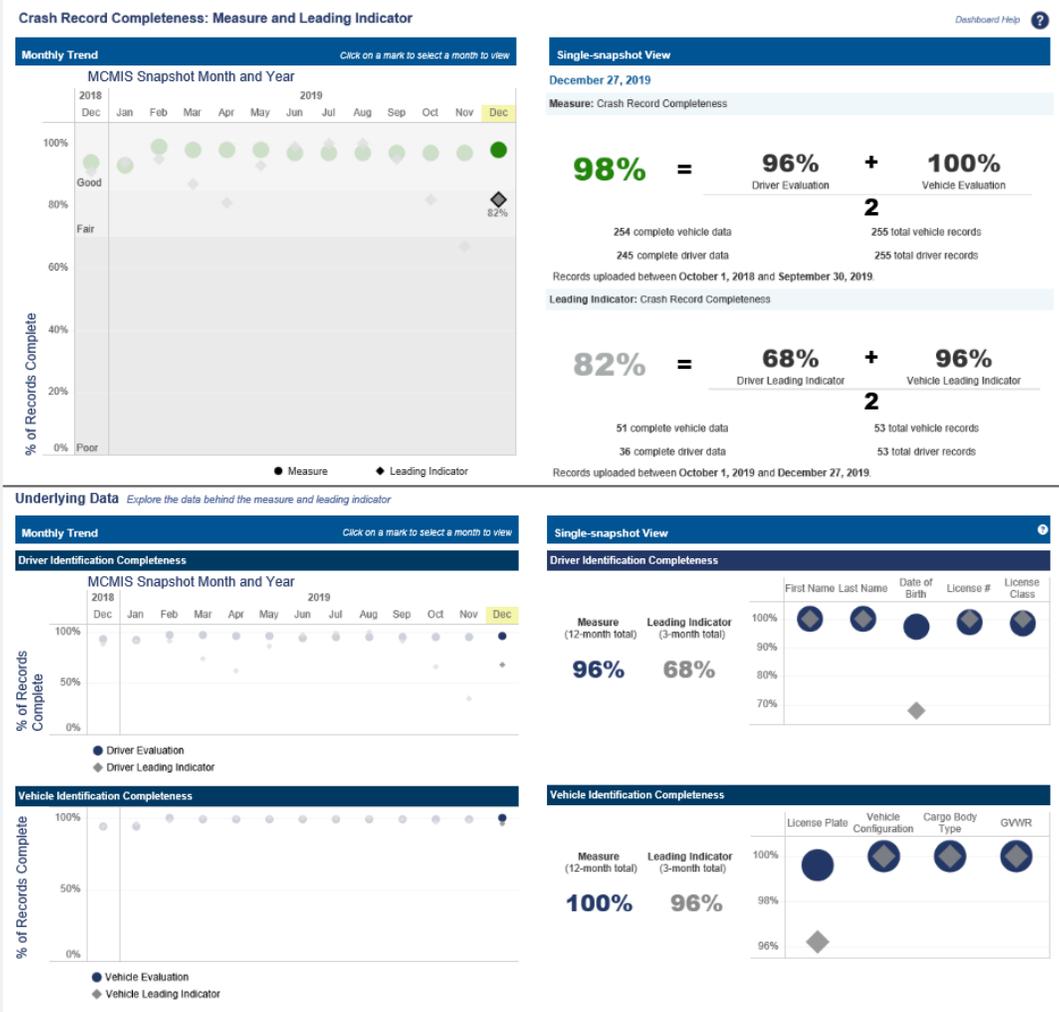
Crash Timeliness Current Rating 88% ↓ ● Leading Indicator 100%	Crash VIN Accuracy Current Rating 95% ↓ ● Leading Indicator 100%	Crash Accuracy Current Rating 97% ● Leading Indicator 98%	Crash Record Completeness Current Rating 98% ↑ ● Leading Indicator 82%	Fatal Crash Completeness Current Rating 0%	Crash Consistency Indicator Current Rating 121% ↓ ● Leading Indicator 91%
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INSPECTION MEASURES

Inspection Timeliness Current Rating 95% ↓ ● Leading Indicator 99%	Inspection VIN Accuracy Current Rating 99% ● Leading Indicator 99%	Inspection Accuracy Current Rating 98% ● Leading Indicator 98%	Inspection Record Completeness Current Rating 100% ● Leading Indicator 100%
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Data Source: FARS records and MCMIS crash and inspection records.

Record Completeness Measures



Fatal Crash Completeness

- Evaluates a **full calendar year** of fatal crash records to determine your State's rating
- A record is evaluated if the **date of the crash event** (not the date of upload to FMCSA) **falls within that calendar year**
- **Differs from the SSDQ measures**, which evaluates a rolling 12-month period
- Measure **compares the number** of large truck fatalities **in MCMIS** to the number of large truck fatalities in **FARS**

Fatal Crash Completeness - Enhancement

- Allow States to **identify non-commercial vehicles that qualify in FARS** due to weight
- By **adding a specific comment to the record in the FARS-MCMIS Matching Tool**, this record will be bypassed in the FARS count for the FCC measure
- Comment to exclude record:
 - *FARS Exclusion - medium/heavy duty truck that qualifies as personal use*

Fatal Crash Completeness

MEASURES: Fatal Crash Completeness

Colorado: Overall State Rating > Measures

Your rating is GOOD

Current Measure ↑
107%

Good (100-90)

Fair (89-80)

Poor (79-0)

107% of your State's evaluated fatal crash records were reported to MCMIS as compared to the number of fatal crash records in FARS. These crashes occurred in calendar year 2018. Your rating is good because the number of MCMIS records as a percentage of FARS records is greater than or equal to 90%. [Learn how this rating is calculated.](#)

NOTE: INSUFFICIENT DATA: State has < 10 FARS records AND MCMIS as a % of FARS is < 89%

What to do next

Make sure that you understand this measure and your State's rating.

- You can use the dashboard below to view the measure and dig deeper into the data behind each measure. Select a data point on any of the tables below to learn more about that month's data.
- Hover over the Dashboard Help icon for additional information.

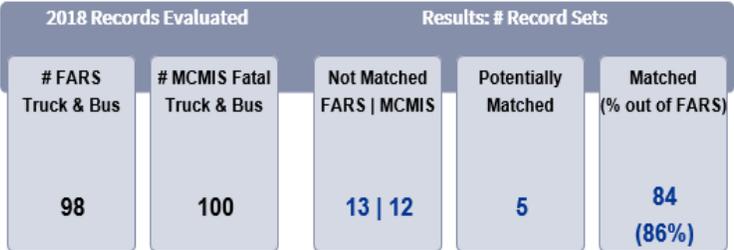
Supplemental Reports

- [Prior Methodology Results](#)
- Use the [FARS/MCMIS Matching Tool](#).
- Talk with your State's FARS Analyst to ensure that you have all the records you should in MCMIS. If needed, reach out to your DQ Specialist for help to connect with your FARS Analyst.

FARS/MCMIS Matching Tool

2018 Show all comments

Colorado: FARS/MCMIS Matching Tool
 Quarterly Results as of October 25, 2019



2018 Colorado Results: MCMIS to FARS Matched Record Sets

#	Source	Date	Time	Case/Report #	County	Vehicle Identification Number	US DOT #	MC/MX #	Driver Age	Driver License State	Vehicle Type	Fatal?
1	FARS	12/30/2018	06:42 AM	572	ADAMS	15GGD2714H11	0157882		65	CO	Bus	Y
	MCMIS	12/30/2018	06:42 AM	CO2018002863	ADAMS	15GGD2714H1188601	157882	57250	65	CO	Bus	Y
2	FARS	12/27/2018	10:48 AM	575	EL PASO	4V4NC9EJ0BN2	2069424		51	CO	Truck	Y
	MCMIS	12/27/2018	10:48 AM	CO2018002866	EL PASO	4V4NC9EJ0BN297672	2069424	723390	51	CO	Truck	Y
3	FARS	12/27/2018	02:50 AM	569	WELD	5KJJABCK17PY	773004		39	IA	Truck	Y
	MCMIS	12/27/2018	02:50 AM	CO2018002856	WELD	5KJJABCK17PY53859	773004	347136	39	IA	Truck	Y

FARS/MCMIS Matching Tool

- Use the **FARS-MCMIS Matching Tool** to improve your **Fatal Crash Completeness Measure**
- Colorado – Background
 - Created a New Crash Repository
 - Resulted in certain records not being identified as reportable
 - 2017 FARS release resulted in the FCC measure dropping from 95% to 57%

FARS/MCMIS Matching Tool

- Use the **FARS-MCMIS Matching Tool to improve your Fatal Crash Completeness Measure**
- Colorado – Improvement Actions
 - Used the FARS-MCMIS Matching Tool to identify fatal records not in MCMIS
 - Researched why these records had been bypassed
 - Updated the extract logic to include these records

FARS/MCMIS Matching Tool

- Use the **FARS-MCMIS Matching Tool to improve your Fatal Crash Completeness Measure**
- Colorado – Improvement Results
 - Improved the FCC measure from 57% to 93%
 - New extract logic also identified reportable non-fatal crashes which had been bypassed
 - Crash Consistency Indicator increased from 85% to 114%
 - With the 2018 FARS release the state's Fatal Crash Completeness measure is 107%

Have Questions?



Have Questions? Let Us know!



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Additional Resources:

Data Quality Website

<http://ai.fmcsa.dot.gov/DataQuality>

DataQs Website

<http://dataqs.fmcsa.dot.gov/>

Thank You!