
Data Quality/Submission Report Using the Virginia Repository



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Purpose

The purpose of this document is to provide information on two items.

- The first item will cover information contained in the Data Quality/Submission report
- The second item is to provide guidance to the EMS agency on how to review data quality and data submission issues within the Virginia EMS Data Repository.

What is “The Data Quality/Submission Report”?

The Data Quality/Submission report is provided to agencies by the Regulation and Compliance, Enforcement Division to inform them of general issues with data quality and issues with data submissions on a monthly basis. Data quality shown on the report is based on the follow scale:

- Green/Acceptable 98.00 to 100.00
- Yellow/Below Avg 95.00 to 97.99
- Red/Poor 0.01 to 94.99

In addition, this report will show the number of records if any that failed to process into the repository. This is a new addition to this report. Previously, OEMS was not able to easily determine if records failed to process by individual agencies. OEMS always depended on agencies to review their data submission and verify all records processed in successfully. Now, that information is available it is being provided to help agencies identify submission failures, correct those, and provide all EMS data as required per Virginia state regulations (Code of Virginia § 32.1-116.1 and EMS regulations 12VAC5-31-560).

Finally, this report will show agencies that have:

- Submitted required demographic data
- Notified OEMS via approved processes they have No Records to Report for the month reflected
- Proxy agencies or agencies that have been given approval by OEMS to report their records under another agencies license number
- Agencies that have “Failed to submit” any EMS data or notify OEMS they have no records to report

This report will be covered within this document but is easy to interpret.

Using the Virginia EMS Data Repository

In the repository, there are methods available to:

- Identify records that failed to process into the repository
- Determine why those records failed to process into the repository
- Identify records with data quality scores below 100
- Identify data quality issue(s) that occurred within each record with a score below 100

These methods will be covered within this document.

Addressing Issues – Informational

While this document will cover the basics on how to read these reports and determine issues, it will not go into detail on how to correct issues that may occur. Each issue may be unique to specific records and it is not possible to cover all possible issues and potential solutions within this document. Recommendations will be made where appropriate.

Considerations

All screenshots contained in this document are designed to provide general guidance only. No references to actual agency information or patient information is displayed. Any slight differences in fonts or font shading is related to removing agency or patient specific information and will not occur in the actual program. However, all items and functionality discussed will match what is available to each agency. All information and screenshots are accurate as of the time this document is published and subject to change (this document will be updated as required).

Support Contact Information

For questions concerning ESO functionality, please contact ESO support: support@eso.com or (866) 766-9471 option 3/1/1.

For questions concerning this document, please contact OEMS support: support@vaemstcc.zendesk.com

If you are unsure of whom to contact, please contact OEMS support. While OEMS support may not be able to address an agencies specific need or question, OEMS support will ensure the proper group is notified. The only exception to this is if a non-ESO EMS software vendor needs to be contacted. In that instance, OEMS support may ask the agency to contact their vendor since the agency has the contractual relationship with that company to initiate the communication between their vendor, OEMS, and ESO.

Virginia Data Quality Report

Below is a screenshot of the new Virginia Data Quality/Submission Report.

Agency Code	Agency Name	Region	DEM File On Record	Month Records Submitted	Month Records Failed	Month Records Passed	Month Data Quality
#####	AGENCY NAME 1	Unique Region	Yes	100	0	100	95.13
#####	AGENCY NAME 2	Unique Region	Yes	Proxy	Proxy	Proxy	Proxy
#####	AGENCY NAME 3	Unique Region	Yes	75	5	70	99.27
#####	AGENCY NAME 4	Unique Region	Yes	22	0	22	89.90
#####	AGENCY NAME 5	Unique Region	Yes	37	3	34	94.68
#####	AGENCY NAME 6	Unique Region	No	Failed to Submit	Failed to Submit	Failed to Submit	Failed to Submit
#####	AGENCY NAME 7	Unique Region	No	171	0	171	100.00
#####	AGENCY NAME 8	Unique Region	Yes	No Runs to Report	No Runs to Report	No Runs to Report	No Runs to Report

- Agency Code – This contains the agency’s 5-digit state license (id) number as assigned by Regulation and Compliance.
- Agency Name – This contains the agency’s name based on the license as assigned by Regulation and Compliance.
- Region – This contains the name of the region the agency’s headquarters is located.
- DEM File On Record – This identifies agencies that have not submitted a Demographics data file to the repository as required under state regulations. If your agency is marked as No, you will need to contact your EMS software vendor (even agencies using ESO as the primary method of EMS documentation) and request they submit a NEMSIS 3.4 demographics data file. All NEMSIS-certified vendors are familiar with this process. If they encounter issues, they need to contact OEMS support.
- Month Records Submitted – This column will reflect the month (i.e. January, February, March, etc.) the report represents and will show the total number of records submitted by the agency
- Month Records Failed – This column will reflect the month (i.e. January, February, March, etc.) the report represents and will show the total number of records submitted by the agency that failed to be accepted for some reason (that will be covered in another section within the document).
- Month Records Passed – This column will reflect the month (i.e. January, February, March, etc.) the report represents and will show the total number of records submitted by the agency that passed the submission process and were accepted by the state.
- Month Data Quality – This column will reflect the month (i.e. January, February, March, etc.) the report represents and will show the average data quality score of the records submitted by the agency that passed the submission process.

Within the Monthly columns, there are the following notations:

- Proxy – This indicates the agency has been granted permission by OEMS to submit data under a parent agency’s license number. It is still that agencies responsibility to ensure all EMS responses are reported per state regulations.
- No Runs to Report – This indicates the licensed agency did not have any EMS responses to report to the state for the month the report represents and that the agency notified OEMS using approved processes (for information on approved processes, contact OEMS support).
- Failed to Submit – This indicates the licensed agency did not submit any EMS data to the repository and failed to inform OEMS the agency did not have any runs for the month represented.

Virginia (ESO) Repository access

To log into the Virginia Repository, go to the following website: <https://www.esosuite.net/login/>

Once on this site, the follow screen will appear:

Username

Password

Agency Code

Let's go!

Forgot your password? [Click here](#)

eso

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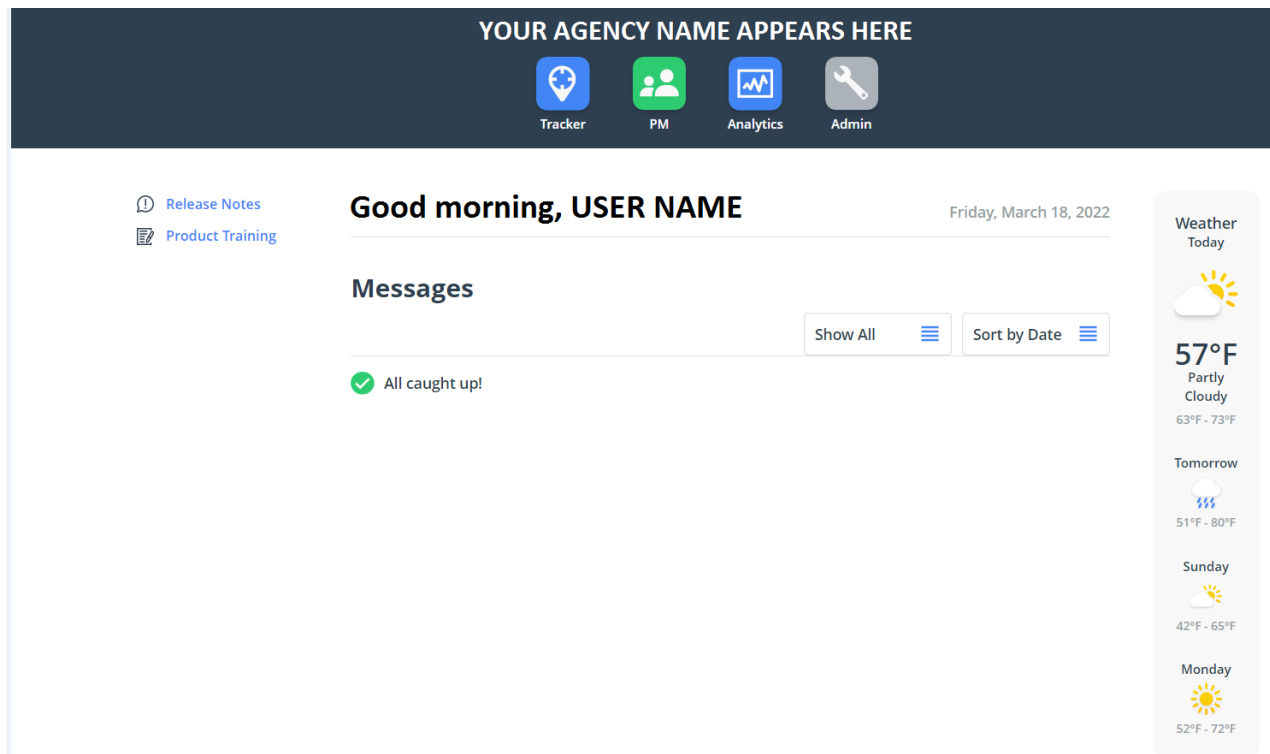
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(Please note that information displayed such as the reference to the ESO Wave 2022 conference is controlled by ESO and subject to change)

On this screen, the user will need to log in with credentials provided by their agency administrator. If you are unsure of how to obtain this information, please contact ESO support (support@eso.com)

After logging in, users will typically be presented with a screen similar to this:

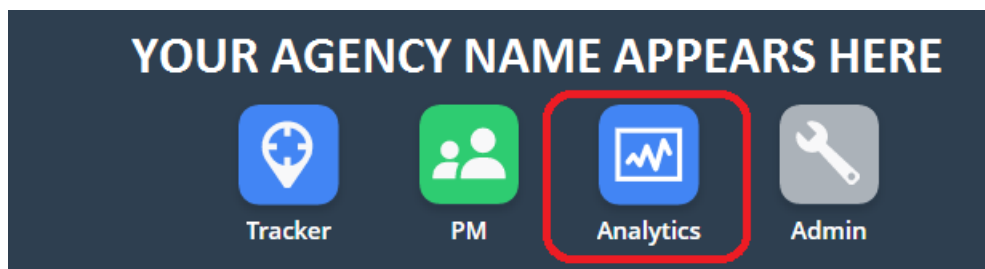


While this screen has been adjusted and identifying information replaced by generic references, your screen should have similar options. If you do not see the Analytics icon above please contact your agency administrator to review your access rights. For further assistance regarding system access, please contact ESO support.

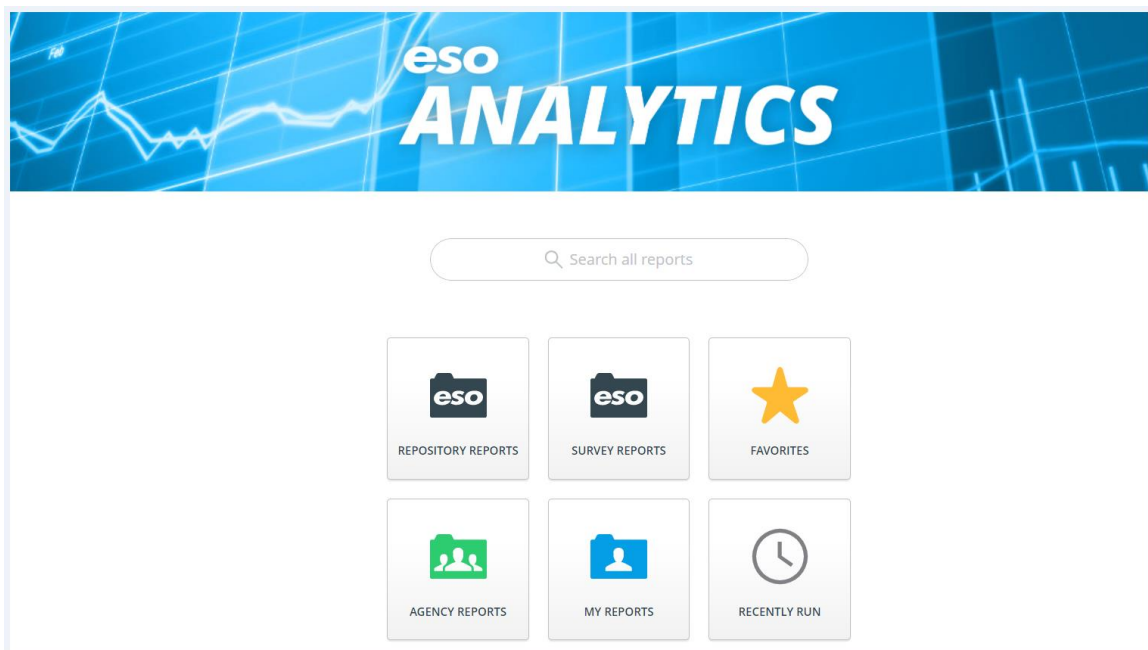
For the remainder of the document, we'll be accessing items under the Analytics section.

Analytics

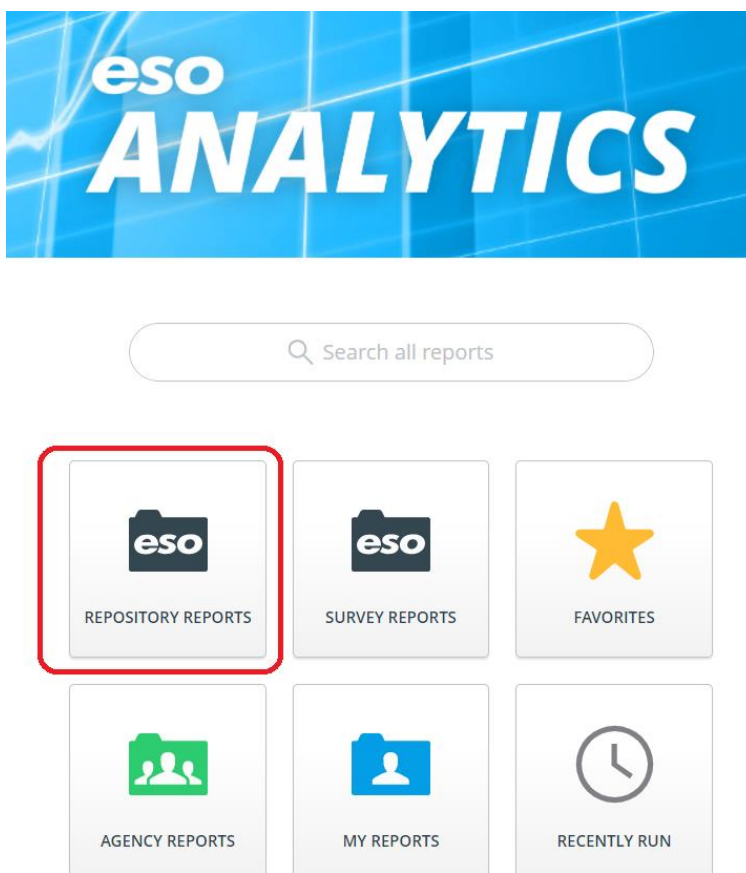
Once logged into the system, select the Analytics option at the top of the screen:



Once selected, the ESO Analytics screen is displayed:



Next, select the Repository Reports option.



In the Repository Reports folder, the following options are available:



The first item to review is the State Submission Summary Report.

State Submission Summary Report

While the State Submission Summary Report can serve several options, this document will cover the use of this report to identify any records that have failed to submit to the state repository.

To open the State Submission Summary Report, click once on the option circled in the screenshot:



The following screen will appear:

<div> <div>eso</div> <div>ANALYTICS</div> <div>State Submission Summary</div> </div> <div> <div>Last 7 Days</div> <div>Mar 11, 2022 - Mar 17, 2022</div> <div>Filters</div> </div>						
Organization	Agency	Submitted	Pending	Failed	Passed	Avg Points Deducted
VA	AGENCY NAME	10	0	0	10	2
####	AGENCY NAME	10	0	0	10	2

(Again, your agency name and number will appear in the proper fields)

Setting Dates

Since this report defaults to the previous 7 days and the anticipation is the user will be reviewing records from a previous period, here are steps on changing the date range.

There are two options for changing dates. The first one is located by selecting this option:



After selecting this, the following choices appear:

YEARS

Current Year
Previous Year
Current and Previous Year

MONTHS

Current Month
Previous Month
Current and Previous Month

WEEKS

Current Week
Previous Week
Current and Previous Week

DAYS

Yesterday
Today
Last 7 Days
Last 30 Days
Last 60 Days
Last 90 Days
Last 120 Days
Last 180 Days
Last 365 Days

These choices are fairly obvious and will not be individually covered here. However, if there are any questions, please contact ESO support at support@eso.com.

To change the data range using one of these preset choices, simply click on the required choice (in this example, “Previous Month” was selected):

YEARS	DAYS
Current Year	Yesterday
Previous Year	Today
Current and Previous Year	Last 7 Days
MONTHS	Last 30 Days
Current Month	Last 60 Days
Previous Month	Last 90 Days
Current and Previous Month	Last 120 Days
WEEKS	Last 180 Days
Current Week	Last 365 Days
Previous Week	
Current and Previous Week	

The data range will update and the requested data retrieved:

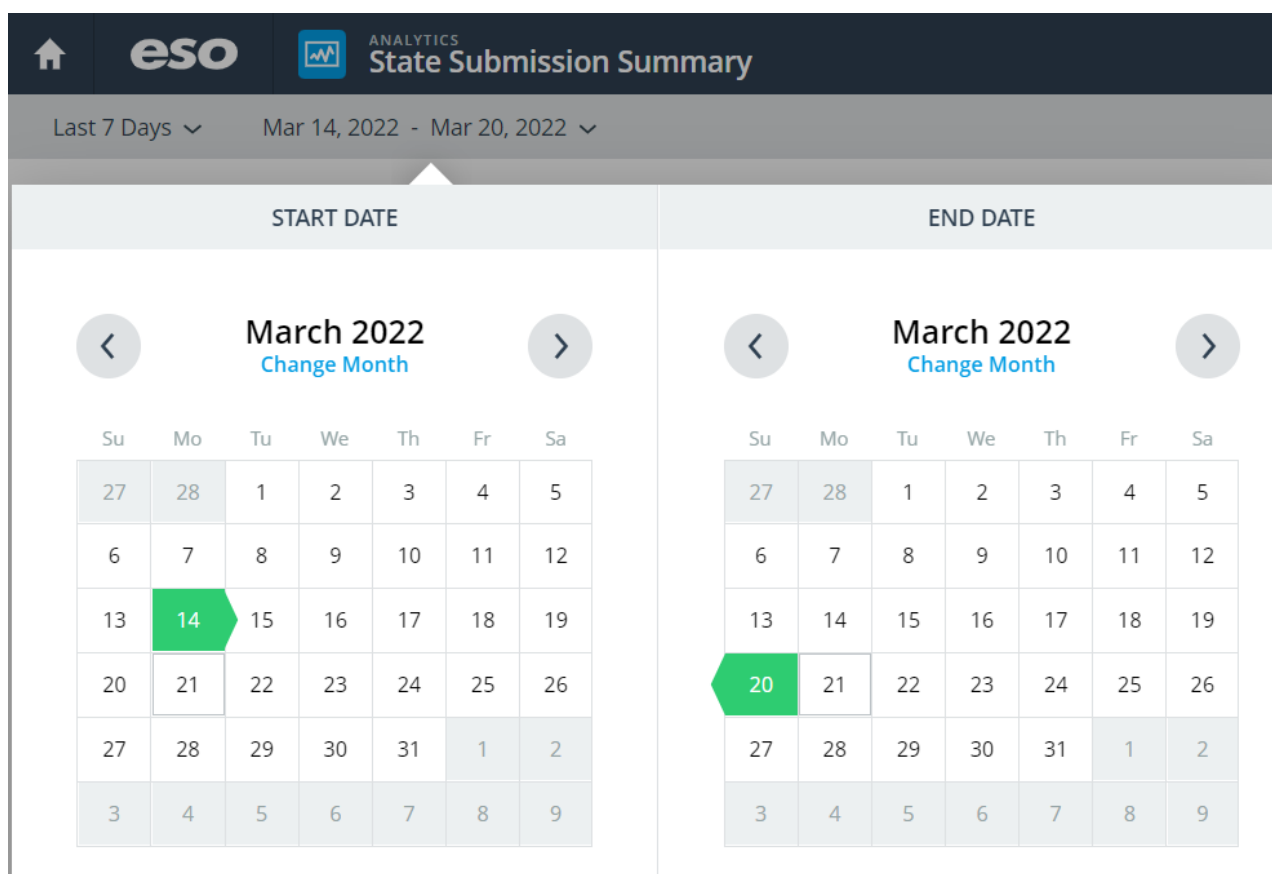
eso ANALYTICS State Submission Summary EDITED						
Previous Month ▾		Feb 1, 2022 - Feb 28, 2022 ▾		Filters		
Organization	Agency	Submitted	Pending	Failed	Passed	Avg Points Deducted
VA	AGENCY NAME	59	0	4	55	1
#####	AGENCY NAME	59	0	4	55	1

(The preset date option selected is noted to the right of the date range shown)

If none of the preset options will return the desired results, the dates can be set manually. To do this, select this option:



Once selected, the following calendar screen will appear:



The left calendar sets the start date and the right side sets the end date. This is used to establish the date range for the information to be displayed.

Simply use the left and right arrow buttons to move between months. Once the proper month has been selected, select the beginning date (left side), ending date (right side), click outside of the calendar screen, and the report will process and retrieve information based on the date range selected.



The word “Custom” to the left of the date range indicates that the calendar option was used.

While there are other options available to establish the date range for this (or any) report, only these two basic options will be covered here. For additional information, please contact ESO support.

Using the Report – Main Screen

Once the date is set, the report will return the following screen:

Organization	Agency	Submitted	Pending	Failed	Passed	Avg Points Deducted
VA	AGENCY NAME	59	0	4	55	1
#####	AGENCY NAME	59	0	4	55	1

Please note: The line that begins with VA need to be disregarded. This line shows the status of submissions from the repository to the National EMS Information System (NEMSIS). While submissions to NEMSIS are important, the state currently accepts responsibility for all NEMSIS submissions and will work with agencies as needed.

The information shown on this initial screen covers the following:

- Organization – This will show the 5-digit state-assigned license number for the agency.
- Agency – This will show the name of the agency as it appears on the state license .
- Submitted – This will show the number of records the agency submitted during the date range specified.
- Pending – This will show the number of records submitted and waiting to be processed.
 - The field will typically show a count of zero (0). If it does show anything other than 0, and the date range displayed does not include the current date, please report this to OEMS support so the pending records can be investigated and resolved.
- Failed – This will show the number of records submitted yet failed to process into the repository.
- Passed – This will show the number of records submitted, passed all Schematron error level requirements, and were successfully processed into the repository.
- Avg Points Deducted – This number displays the average number of validation points deducted for the total number of records submitted. While informational, there is a better report to use when identifying records with validation scores to be investigated. That is covered in another section.

Using the Report – Detailed Screen

To view the details of the submission report, simply click (single-click) anywhere in the gray area of the line listing the summary information:

Organization	Agency	Submitted	Pending	Failed	Passed	Avg Points Deducted
VA	AGENCY NAME	59	0	4	55	1
#####	AGENCY NAME	59	0	4	55	1

Once selected, the following screen will appear:

PCR ID	Incident ID	Status	Incident	Submitted	Warnings	Errors	Fatafs	Points Deducted
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Succe...	mm/dd/yyyy	mm/dd/yyyy	0	0	0	0
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Succe...	mm/dd/yyyy	mm/dd/yyyy	1	0	0	0
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Succe...	mm/dd/yyyy	mm/dd/yyyy	2	0	0	3
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Succe...	mm/dd/yyyy	mm/dd/yyyy	0	0	0	0

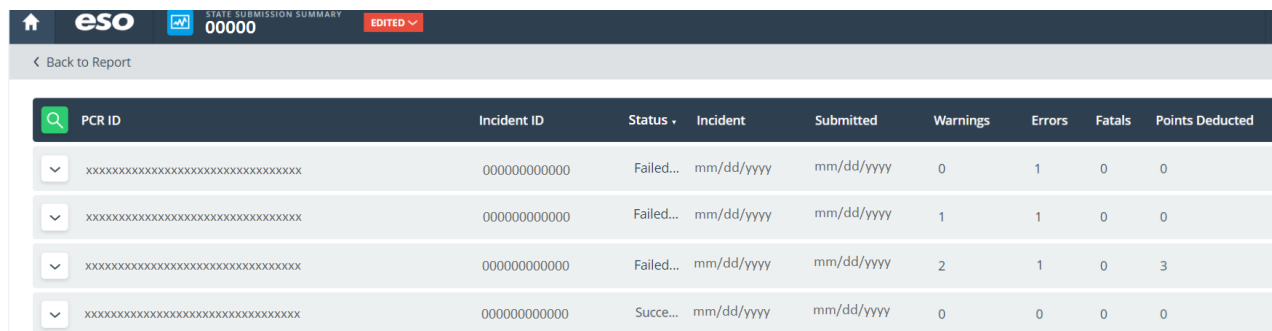
(Please note that any references to specific agencies or specific incidents have been masked).

Since the primary purpose for this report being discussed here is to review failed records, this is the only option that will be covered here.

Once this information is displayed, the column headers can be sorted by clicking on the individual column labels:

PCR ID	Incident ID	Status	Incident	Submitted	Warnings	Errors	Fatafs	Points Deducted
--------	-------------	--------	----------	-----------	----------	--------	--------	-----------------

Simply click on the word “Status” twice to sort the records so that any records with a failed status are located at the top of the report:

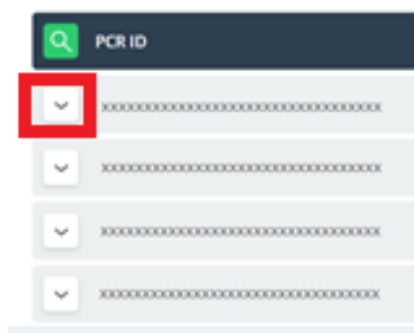


PCR ID	Incident ID	Status	Incident	Submitted	Warnings	Errors	FataIs	Points Deducted
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Failed...	mm/dd/yyyy	mm/dd/yyyy	0	1	0	0
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Failed...	mm/dd/yyyy	mm/dd/yyyy	1	1	0	0
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Failed...	mm/dd/yyyy	mm/dd/yyyy	2	1	0	3
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	000000000000	Succe...	mm/dd/yyyy	mm/dd/yyyy	0	0	0	0

Using the Report – Viewing Errors That Occurred

Now that the details of each submission report is available and the information sorted, the next step is to check out the errors.

To view the errors for individual records, click on the down arrow to the left of each record to be reviewed:



Once selected, a screen similar to this will appear:

Health Data Repository Submission

OK

PCR ID -
Incident ID -
Incident Date -
Submission Date -

Information was removed for the purpose of creating this document. Information for records you access will be visible

WARNING

Score: 0

nemSch_consistency_eSituation_injury_eSituation.02- Possible Injury should be "Yes" when a symptom or impression is injury-related.

WARNING

Score: 0

nemSch_consistency_eVitals.VitalGroup_all_eVitals.01- Date/Time Vital Signs Taken should be recorded, unless Obtained Prior to this Unit's EMS Care is "Yes".

FATAL

Score: 100

RestrictDestinationCodeToName- Submitted value for Destination Code (eDisposition.02) with Destination Name (eDisposition.01) does not exist in the system.

Messages listed as “**FATAL**” are the ones that caused the record to fail submission to the state repository. (Warning type messages will be covered in the data quality section).

Messages that start with nemSch can be disregarded at this time.

Listed above is just one type of fatal message and not all fatal/error messages are due to state-level validation rules. For example, the below error indicates a structural issue with the XML file submitted:

ERROR

Score: 0

XSD Validation Error- The 'http://www.nemsis.org:schemaLocation' attribute is not declared.

These are just two of what can be many types of issues that can cause a record to fail.

When it comes to addressing these issues, our recommendation is as follows:

- Review the message and then check the record in your EMS software system. We try to design the contents of the error messages related to state validation rules in a way where a user may be able to determine the issue, fix the problem, and resend the record.
- If a solution is not readily apparent, then contact your EMS software system vendor. It is always possible there was an issue with how the XML file was created that caused the error or a structural issue with the file as shows above. When this occurs, it is not something you may be able to see in your system. Since repository support techs only have access to the XML data after the fact, they may not be able to help either. This is why we recommend you contact your vendor first.
- If your vendor is unable to determine why the record failed, then ask your vendor to contact OEMS support (be sure they included the person at your agency working this issue in any correspondence). OEMS support will coordinate work with your vendor and ESO on the issue in question.

Monthly PCR Data Quality Report

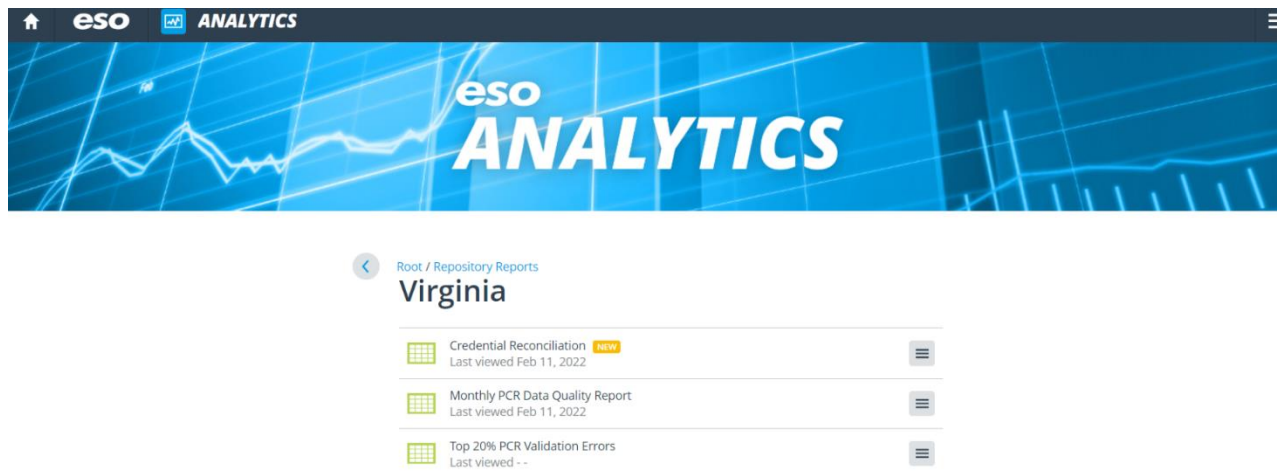
The Monthly PCR Data Quality Report is used to review any records with less than acceptable data quality scores. This report will provide a list of all records submitted (passed) and allows users to view any data quality issues that occurred per record.

To access the Monthly PCR Data Quality report, first follow the steps outlined in the Virginia (ESO Repository Access and Analytics sections previously covered in this document to get to the Repository Reports section.

Once on this screen, select the Virginia folder:



The following screen will appear:



Next, select “Monthly PCR Data Quality Report”:



Using the Report – Main Screen

After selecting Monthly PCR Data Quality Report, the following screen will appear:

Agency Name	Average Validity Score	Total EMS Calls
Agency Name	00.00	00

(Please note that your agency name will appear under the Agency Name section)

The information shown on this initial screen covers the following:

- Agency – This will show the name of the agency as it appears on the state license.
- Average Validity Score – This shows the average score of all records based on the date range selected.
- Total EMS Calls – This shows the total number of EMS records submitted based on the date range selected.

Next, set the date range if needed. (For guidance on this, please refer to the “Setting Dates” section beginning on page 11)

Agency Name	Average Validity Score	Total EMS Calls
Agency Name	00.00	00

Once the date is set, select your agency's name to display records:

Agency Name	Average Validity Score	Total EMS Calls
Agency Name	00.00	00

Using the Report – Detailed Screen

After selecting the Agency Name, the following screen will appear:

 Agency Number	Incident Number	Incident Date	Data Quality Score
▼ 00000	000000000000	mm/dd/yyyy	100
▼ 00000	000000000000	mm/dd/yyyy	100
▼ 00000	000000000000	mm/dd/yyyy	70
▼ 00000	000000000000	mm/dd/yyyy	70
▼ 00000	000000000000	mm/dd/yyyy	99
▼ 00000	000000000000	mm/dd/yyyy	100
▼ 00000	000000000000	mm/dd/yyyy	100
▼ 00000	000000000000	mm/dd/yyyy	100






This screen provides detailed information per incident.

Since it is normally unnecessary to review any record with a data quality score of 100, the recommendation is to sort the Data Quality Score column so that the records with lower scores appear first.

To sort the column, click on the Data Quality Score label in the blue border to sort the records from lowest to highest:

 Agency Number	Incident Number	Incident Date	Data Quality Score
---	-----------------	---------------	--------------------


Now, the information is listed based on the data quality score:


 Agency Number	Incident Number	Incident Date	Data Quality Score ^
 00000	000000000000	mm/dd/yyyy	70
 00000	000000000000	mm/dd/yyyy	70
 00000	000000000000	mm/dd/yyyy	99
 00000	000000000000	mm/dd/yyyy	99
 00000	000000000000	mm/dd/yyyy	99
 00000	000000000000	mm/dd/yyyy	100
 00000	000000000000	mm/dd/yyyy	100
 00000	000000000000	mm/dd/yyyy	100


Using the Report – Viewing Errors that occurred


Now that the details of each incident are available and the information sorted, the next step is to review the data quality issues for any record with a score of less than 100.


To view this for individual records, click on the down arrow to the left of each record:


 Agency Number

 00000

 00000

 00000

 00000

 00000

The following information is displayed:

Health Data Repository Submission		OK
PCR ID		
Incident ID	<i>Information was removed for the purpose of creating the document. Information for records you access will be visible.</i>	
Incident Date		
Submission Date		
WARNING		Score: 0
nemSch_consistency_eDisposition.12_all_warning_eTimes.12- Destination Patient Transfer of Care Date/Time should be recorded when Incident/Patient Disposition is "... (With Transport)" or "Patient Treated, Transported by this EMS Unit".		
WARNING		Score: 0
nemSch_consistency_eDisposition.12_all_warning_eDisposition.19- Final Patient Acuity should be recorded when Incident/Patient Disposition is "... (With Transport)" or "Patient Treated, Transported by this EMS Unit".		
WARNING		Score: 3
Rule_1665- The Final Patient Acuity should not be blank or a "Not" value used when a transport disposition has been selected.		

As was covered when reviewing failed submissions, any warning that begin with nemSch can be disregarded at this time.

Any warning message with score value of other than zero needs to be reviewed for correction.

When it comes to addressing these issues, our recommendation is as follows:

- Review the message and then review the record in the system your agency used to create the record to see if you can find the issue in question. We try to design the contents of the error messages related to state validation rules in a way where a user may be able to determine the issue, fix the problem, and resend the record.
- If a solution is not readily apparent, then contact your EMS software system vendor for assistance. Your vendor should be the expert on how your EMS software system works. All vendors have access to state validation rules and their design within Schematron and should be able to offer assistance on what sort of corrections may be needed.
- If your vendor is not able to assist, have them contact OEMS support (be sure they included the person at your agency working this issue in any correspondence). OEMS support will work with your vendor to help identify the reason for the issue. Once identified, OEMS will either make recommendations or direct the agency to contact their medical direction group. Should the agency have questions related to software functionality, those will need to be directed to the agency's EMS software vendor.

In general, Who is the best source to work with?

ESO users

For those agencies using ESO as their primary method for documenting EMS incidents, you should contact ESO support. ESO support will be able to review the record and the validation issue and make recommendations on needed actions.

ESO has also created 2 documents to help with validation warnings or fatal errors. You can access these documents once you have logged into [esosuite.net](https://www.esosuite.net).

https://www.esosuite.net/EsoSuite/TrainingMaterials/TrainingMaterials/Configuring_Virginia_Data%20Quality%20Validations.pdf

https://www.esosuite.net/EsoSuite/TrainingMaterials/TrainingMaterials/Configuring_Virginia_EMS_Practice%20Levels.pdf

In the event that ESO support needs input or information from OEMS, ESO support will contact OEMS support directly and both support teams will work on the issue and inform the agency of actions needed.

Non-ESO users

For those agencies using a non-ESO system (I.E. ImageTrend, emsCharts, Zoll, etc.) as their primary method for documenting EMS incidents, you should contact your vendor's software support team. Since XML files submitted are created by your system based on record documentation, your vendor may need to review that first.

If your vendor is unable to determine the cause or does not see any issue when comparing the records XML file to the Schematron files, then ask your vendor to contact OEMS support (again, be sure they included the person at your agency working this issue in any correspondence). OEMS support will review your vendors finding and will coordinate support efforts between your vendor and ESO. Once a solution has been determined, the agency will be notified by the appropriate support group on how the issue can be solved.