

2020 Annual NEMSIS V3 Implementation Meeting

(September 15th, 2020)





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09:15 AM - 10:15 AM	NHTSA's OFFICE OF EMS (Dr. John Krohmer)
10:15 AM - 10:25 AM	BREAK
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11:40 AM - 12:40 PM	EMS Software Vendor Compliance Q&A
12:40 PM - 12:55 PM	Q&A
12:55 PM - 01:00 PM	CLOSING

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Note: Session times may be adjusted due to discussion

Questions? Contact:
chris.hoffman@hsc.utah.edu
801.581.5278



RULES



of ENGAGEMENT

Featured Presentation

Dr. Jon Krohmer

Director, Office of EMS, NHTSA



Mr. Eric Chaney

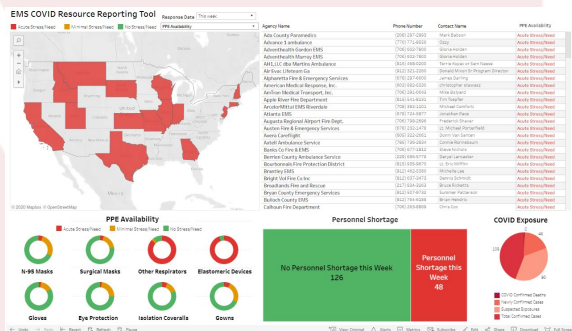
EMS Specialist, Office of EMS, NHTSA



COVID-19 Epidemic: Custom Element/Value Additions

COVID-19: Custom Elements/Values

- Six custom elements
- Seven custom values
- One ICD-10-CM recommendation
- One REDCap Survey



Infectious Disease National Custom Elements

Travel and Exposure Elements

Element	Title	Description
eHistory.901	Recent Travel	Prior to symptom onset, did the patient travel outside their community? The time frame "prior to symptom onset" and the term "community" are defined by state or local jurisdictions.
eHistory.902	Recent Local Travel	Document all places and locations the patient has traveled to that might have posed a significant threat of exposure prior to symptom onset. The time frame "prior to symptom onset" is defined by state or local jurisdictions. (Max Length of 255)
eHistory.903	Recent Exposure to Infectious Disease	Prior to symptom onset, has the patient had close contact with someone with similar symptoms or a confirmed diagnosis of the illness for which you are screening? The time frame "prior to symptom onset" is defined by state or local jurisdictions.
eHistory.904	Recent International Travel	Document all the countries (outside the US) the patient has traveled to prior to symptom onset. The time frame "prior to symptom onset" is defined by state or local jurisdictions. Use NEMSIS data type ANSICountryCode.
eHistory.905	Recent State Travel	Document all the states the patient has traveled to prior to symptom onset. The time frame "prior to symptom onset" is defined by state or local jurisdictions. Use NEMSIS data type ANSIStateCode.
eHistory.906	Recent City Travel	Document all the cities the patient has traveled to prior to symptom onset. The time frame "prior to symptom onset" is defined by state or local jurisdictions. Use NEMSIS data type CityGnisCode

- Please note that for travel and exposure-related national custom elements, states or local jurisdictions are required to define the time frame "prior to symptom onset" based on the incubation period of the pathogen under consideration.
- In addition, states or local jurisdictions must define "community" to best characterize the geographic area considered the current exposure zone. National custom elements/values related to travel are "specific" allowing for state adoption of few (or many) elements as an outbreak/epidemic/pandemic escalates and/or identification criteria change.
- Custom Elements (National or State) are not sent to the National EMS Data Repository.

Additional Values

Element	Value
eOther.03: PPE Used	Gown Face Shield Isolation Coveralls
eDisposition.21: Type of Destination	Alternate Care Site
eDisposition.24: Destination Team Pre-Arrival Alert	Yes – Biological/Infectious Precautions
dFacility.01: Type of Facility	Alternate Care Site
eVitals.25: Temperature Method	No Touch (e.g., Infrared)

Break-Out Room Questions (#1)

- What attributes of the EMS response to COVID-19 were not adequately addressed by custom elements/values?
- What topics should we now preemptively consider for additional custom elements/values?
 - Influenza season
 - Community vaccination programs
 - Supply of needles/syringes

Break-Out Room Questions (#2)

- Should (could) the NEMESIS DEM dataset section be used to address resource-related issues?
 - PPE shortages
 - COVID exposures
 - Manpower shortages
 - Financial viability

EMS Software Vendor Compliance Q/A

NEMESIS Software Compliance Policy

- Testing (then retesting) within two years of the last successful compliance test.
 - California enforcing “within one year”
- Participation on 70% of bi-monthly V3 Implementation webinars.
- Representation at the Annual V3 Implementation Meeting.

Compliance Policy: Defined Lists

- Enforced for V3.5.0 Compliance Testing
 - Deploy current “defined list” for each appropriate element.
 - Additional values may appear in the lists.
 - Testing web conference section
 - Software review to ensure that all items on the defined list for appropriate elements are implemented in the interface.

NEMSIS TAC Version 3 Policy



NEMSIS Version 3 Compliance Policy

Date

September 18, 2015
September 29, 2017 (Updated)
December 3, 2019 (process changes and v3.5.0 testing)
September 10, 2020 (added “defined lists” requirement)

NEMSIS V3 Compliance Testing

NEMSIS v3.5.0 Compliance Process— “Collect Data” Software

Date

December 3, 2019 (process changes and v3.5.0 testing)
February 25, 2020 (updated web service URLs, changed test case key elements)
September 10, 2020 (added “defined lists” testing)

Break-Out Room Questions (#3)

- How can we improve the efficiency of the NEMESIS Compliance Process?

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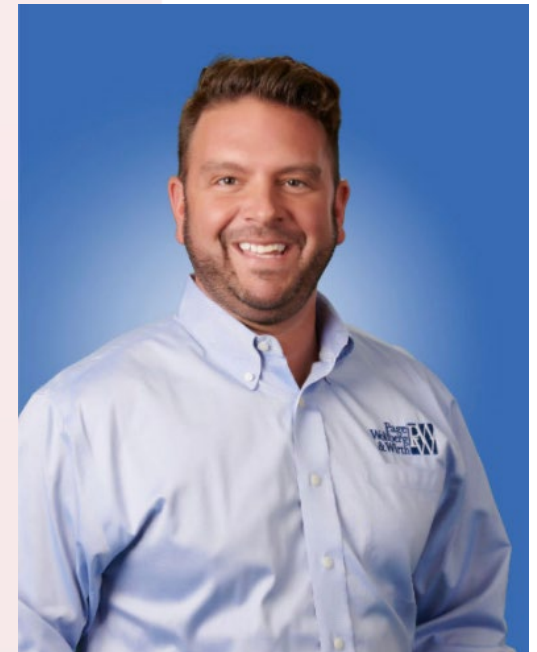
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Featured Presentation

Mr. Ryan Stark

Managing Partner at Page, Wolfberg and Wirth, LLC



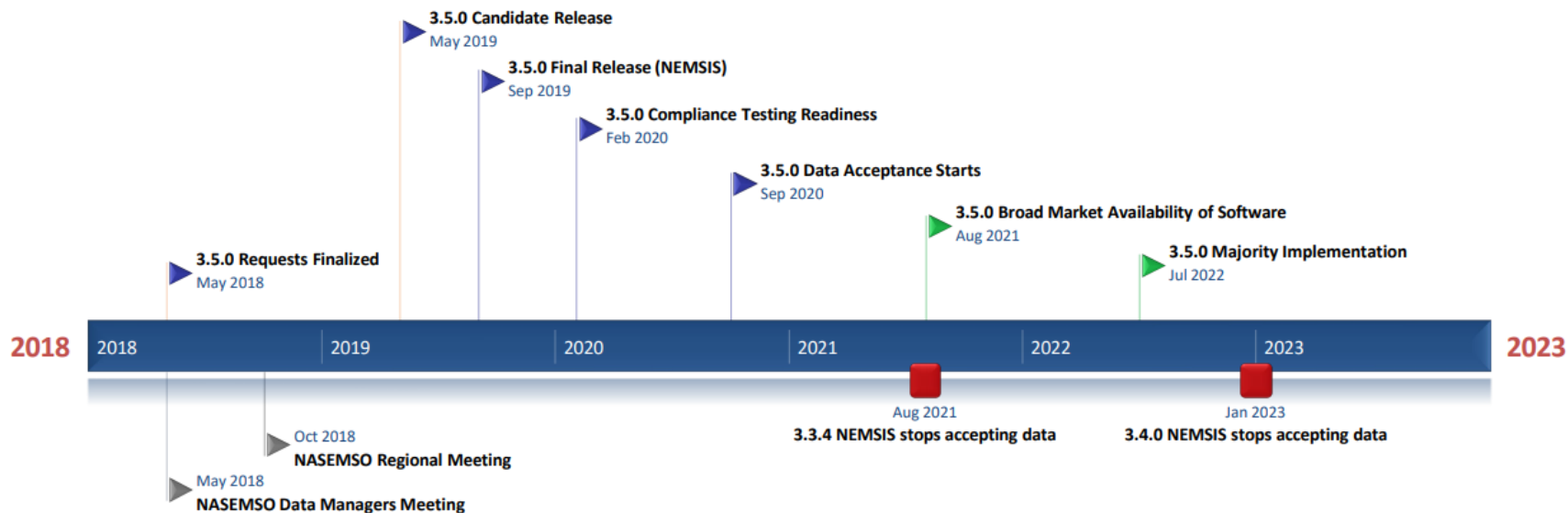
Break-Out Room Questions (#4)

- What additional legal (instructional) documents would be helpful in facilitating bi-directional data exchange?
 - Guide to EMS Agency Policies for data security / confidentiality?
 - Would hospitals feel more comfortable with a recognized/standard EMS policy?
 - Are there other policies that should be considered?

Developing a Schedule and Tools for the Roll-Out of NEMESIS V3.5.0

Schedule and Tools for the Roll-Out of NEMSIS V3.5.0

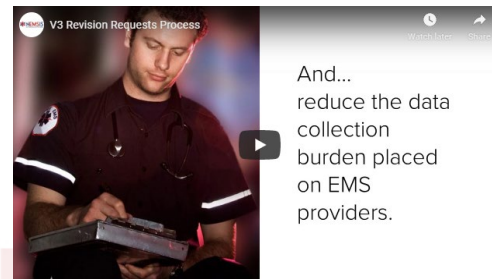
NEMSIS Versioning Schedule



Updated June 2020

Roll-Out Tools for V3.5.0

- Justification
YouTube videos, PP presentations
- Fact Sheets
– UUID, Disposition group, Defined lists, CARES
- Universal Version Timeline
- Improved Data Dictionary/Schematron



Technical Assistance Center Bulletin
October 2019

v3.5.0 Data Standard: Patient and Incident Disposition

Associated Validation Rules		
Rule ID	Level	Message
...t_eArrest.17	Warning	Cardiac Rhythm on Arrival at Destination should be recorded when Incident/Patient Disposition is "Patient Dead at Scene... (with Transport)" or "Patient Treated, Transported by this EMS Unit" and Cardiac Arrest is "Yes..."
..._eArrest.16	Warning	Reason CPR/Resuscitation Discontinued should be recorded when Incident/Patient Disposition is "Patient Dead at Scene-Resuscitation Attempted..."
...sposition.05	Warning	Destination State should be recorded when Incident/Patient Disposition is "... (With Transport)" or "Patient Treated, Transported by this EMS Unit".

Break-Out Room Questions (#5)

- Is the current timeline too aggressive?
- How do we roll-out V3.5.0 information to States and agencies?
- What additional items should be produced to roll-out to States and agencies?
- What would be the best process to track State's transitions to V3.5.0?

Break-Out Room Objectives (#6)

- **Improving Health Information Exchange/Bidirectional Flow of Data (V3.5.0)**
 - Objective: Devise a scope of work (SOW) for EMS data exchange/flow for 2020-2021.
- **Proposed NASEMSO Resolution: Release of Geo-data for Surveillance**
 - Objective: Finish NASEMSO resolution for public release of State and County identifiers for bio-surveillance.

Improving HIE/Bidirectional Flow of Data (V3.5.0)

- Exchanges to consider:
 - Patient-side “pull” from HIE (Search)
 - Transport Unit “push” to ED/Hospital HER (Alert)
 - Hospital EHR “push/pull” to EMS record (File)
 - “Push” eOutcomes from EMS Record to NEMSIS
- ONC Cures Act Final Rule – in effect June 30, 2020
 - Implementations using FHIR (Version 4)
 - Use of U.S. Core Data for Interoperability (USCDI v1)
 - Takes the place of the Common Clinical Data Set (CCDS)

Transport Unit “push” to ED/Hospital EHR (Alert)

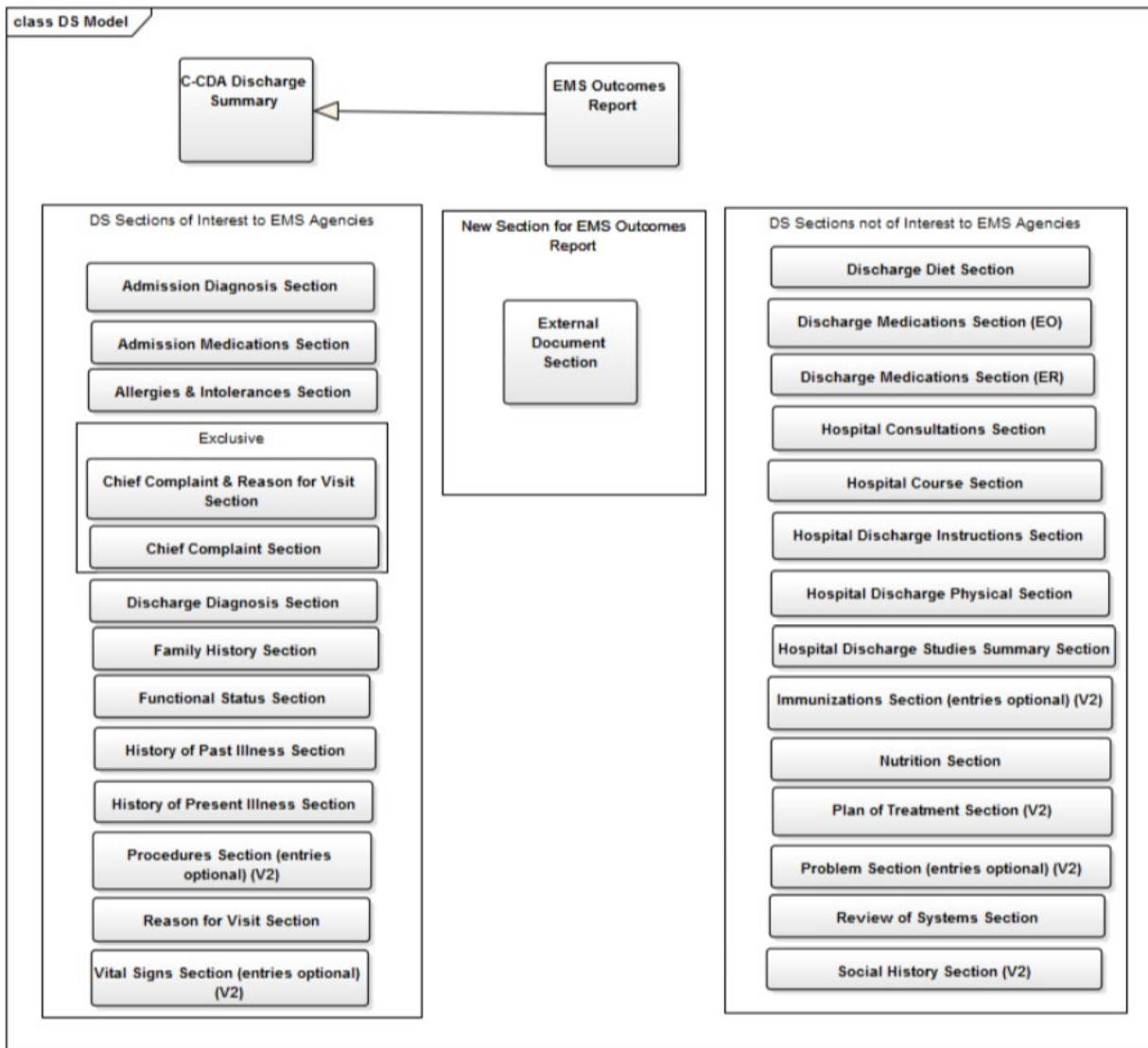
- Develop of a HL7 FHIR (version 4) Implementation Guide for “common” ePCR elements.
- Is this the right approach?
- Are there other “short-term” options that should be considered?

Hospital EHR “push/pull” to EMS Record (File)

- Develop a V3.5.0 HL7 C-CDA R2 Discharge Summary Implementation Guide for select elements...but, divergent expectations.
 - Idea: Develop a new “eOutcomes” document type, not a specialization of the Discharge Summary.
- Should we consider an HL7 FHIR (version 4) implementation?

Proposed Model

Draft model



“Push” eOutcomes from EMS Record to NEMESIS

- Develop our own eOutcomes XSD template
 - Separate document, separate lifecycle
 - Reconnect to NEMESIS (at National level) with UUID

Proposed Work Group Process

Step 1: Requirements Gathering

Part of the issue here at this point is that we do not have an excellent definitive list of the elements we think are needed by EMS. We cannot limit ourselves to the conceptual model of the eOutcomes section as we all know it has limitations. I would suggest we start as a workgroup by bringing together from our respective constituencies or organizations lists of elements we would add to eOutcomes to support whatever need we have run across thus far.

Step 2: Requirements Consolidation

Like elements are evaluated for consolidation and outliers are discussed for feasibility (is it even commonly available) by your local experts. That should result in a set of features we as a group know we need and a relative complexity or “is it possible or not” from your experts.

Step 3: Evaluate the CCD and the Discharge Summary CDA Template as potentially all-encompassing sources

We had a hope in our discussion that perhaps one or both of these documents might be available enough to EMS and have coverage for all the elements we need. If the workgroup is satisfied with the data element coverage available in these data structures, then we could stop here and avoid the need for the formal process by NEMSIS in the creation of a new XSD supporting outcome data

Step 4: Convert the requirement elements list into a NEMSIS Specific Outcomes.XSD rough draft for comment.

Supply mapping from each of the two common CDA constructs the CCD and the Discharge Summary CDA as well as a standard HL7 2.X discharge summary message as part of this dictionary proposal. The resulting documentation would serve as a field implementation guide for most vendors to support converting the most common data structures you will come across in the field of hospital EHRs.

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Featured Presentation

Mr. Neil Milan

**Public Health Analyst, Center for Medicare and
Medicaid Innovation, CMS**



Migrating Suggested Lists to Defined Lists

eSituation.11 & .12 – EMS Impression

- In 2018, 6,880 ICD-10-CM codes reported.

In 2017, 4,516 ICD-10-CM codes reported

In 2018, 6,880 ICD-10-CM codes reported

In 2019, 8,316 ICD-10-CM codes reported

- The available suggested lists were revamped in 2019-2020
 - 2016 Suggested list: represented 69% of codes submitted in 2018-19, 17 parent codes, 171 codes.
 - 2019 “Defined” list: represented 90.5% of codes submitted in 2018-19, 17 parent codes, 120 codes.

V2 Primary Impression

PROVIDERS PRIMARY IMPRESSION

E09_15

Data [combo] single-choice

National Element

Definition

The EMS personnel's impression of the patient's primary problem or most significant condition which led to the management given to the patient (treatments, medications, or procedures).

XSD Data Type xs:integer

XSD Domain (Simple Type) ProvidersPrimaryImpression

Multiple Entry Configuration No

Accepts Null Values Yes

Required in XSD Yes

Field Values

- | | |
|---|--|
| -25 Not Applicable | -20 Not Recorded |
| -15 Not Reporting | -10 Not Known |
| -5 Not Available | 1615 789.00- Abdominal pain / problems |
| 1620 519.80- Airway obstruction | 1625 995.30- Allergic reaction |
| 1630 780.09- Altered level of consciousness | 1635 312.90- Behavioral / psychiatric disorder |
| 1640 427.50- Cardiac arrest | 1645 427.90- Cardiac rhythm disturbance |
| 1650 786.50- Chest pain / discomfort | 1655 250.90- Diabetic symptoms (hypoglycemia) |
| 1660 994.80- Electrocutation | 1665 780.60- Hyperthermia |
| 1670 780.90- Hypothermia | 1675 785.59- Hypovolemia / shock |
| 1680 987.90- Inhalation injury (toxic gas) | 1685 798.99- Obvious death |
| 1690 977.90- Poisoning / drug ingestion | 1695 659.90- Pregnancy / OB delivery |
| 1700 786.09- Respiratory distress | 1705 799.10- Respiratory arrest |
| 1710 780.30- Seizure | 1715 959.90- Sexual assault / rape |
| 1720 987.90- Smoke inhalation | 1725 989.50- Stings / venomous bites |
| 1730 436.00- Stroke / CVA | 1735 780.20- Syncope / fainting |
| 1740 959.90- Traumatic injury | 1745 623.80- Vaginal hemorrhage |

eSituation.11 & .12 – EMS Impression

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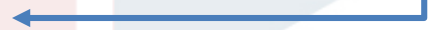
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User Issues Addressed by Defined Lists

- User Issues We are Attempting to Resolve
 - Using different codes for the same issue
 - Reducing the choices available when coding
 - Increasing precision in coding

(mitigate code fatigue)



Keep a Pattern Only for....

Elements related to the patient medical history, billing experts, and hospital outcome information:

- Patient Medical Information
 - eHistory.06 – Medication Allergies
 - eHistory.08 – Medical/Surgical History
 - eHistory.12 – Current Medications
- Payment section
 - ePayment.51 – EMS Condition Code
- Outcome Information
 - eOutcome.08 - Emergency Department Recorded Cause of Injury
 - eOutcome.09 - Emergency Department Procedures
 - eOutcome.10 - Emergency Department Diagnosis
 - eOutcome.12 - Hospital Procedures
 - eOutcome.13 - Hospital Diagnosis

Provide Defined Lists (allowing for use of a pattern)

- Symptoms
 - eSituation.09
 - eSituation.10
- Impressions
 - eSituation.11
 - eSituation.12
- Cause of Injury (eInjury.01)
- Incident Location Type (eScene.01)
- Patient Activity (eSituation.17)
- Defined lists are expected to be presented to clinicians in the graphical interface. This expectation will be evaluated during compliance testing.
- Specialty care (air-medical /interfacility/critical care transports) will utilize same defined lists.
- Values outside of defined lists will be allowed for all users through existing patterns.
- Standard “roll-ups” will be provided by the NEMSIS TAC for National and State-level research and performance assessment.

Provide Defined Lists (allowing for use of a pattern)

- Procedures
 - eProcedures.03
 - dConfiguration.03
 - dConfiguration.07
- Medications
 - eMedications.03
 - dConfiguration.04
 - dConfiguration.08
- Included as part of the StateDataSet. State Schematron rules are expected.
- Defined lists for meds/procedures will be limited to those approved for use during a 9-1-1 activated response (all certification levels).
- eMedications.03/eProcedures.03 for air-medical/interfacility/critical care transports can rely on existing patterns.
- Values outside of defined lists will be allowed for all users through existing patterns.
- Standard “roll-ups” will be provided by the NEMSIS TAC for National and State-level research and performance assessment.

Defined Lists Process Resources Available

- A description of the methodology used to “update” the Defined Lists in 2019.
- This PowerPoint presentation outlining the intended use of the Defined Lists and associated compliance testing measures.
- An inventory of codes that did not qualify to inclusion on the Defined Lists for each element.

Suggested Lists → Defined Lists

- What concerns have addressed regarding the Defined List policy?

Break-Out Room Questions (#7)

- How can we help States/agencies limit value additions?
 - Software strategies
 - State-level strategies
- How will we implement analytical roll-ups at the State level?
 - How to implement to meet State/agency needs

Data Submission Lag: Barriers and Solutions

Data Submission Lag: Barriers and Solutions

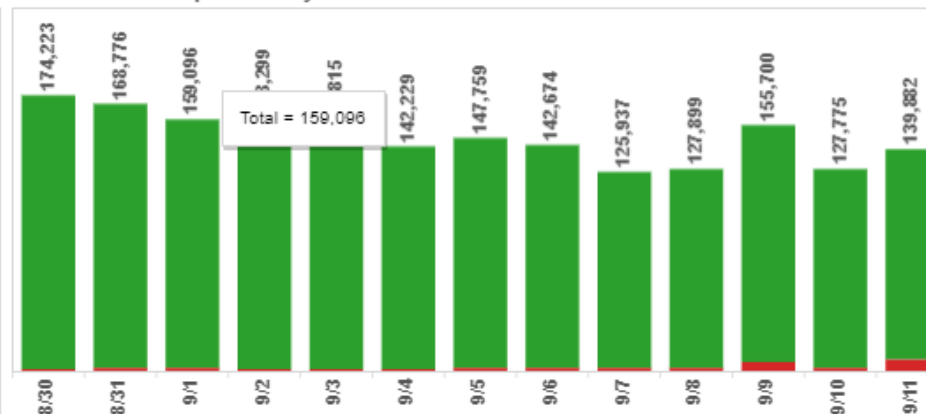
Submissions

Count of Submissions	1,921,064
Count of Submissions Accepted	1,880,358
Count of Submissions Rejected	40,706
Count of Submission Errors	40,893

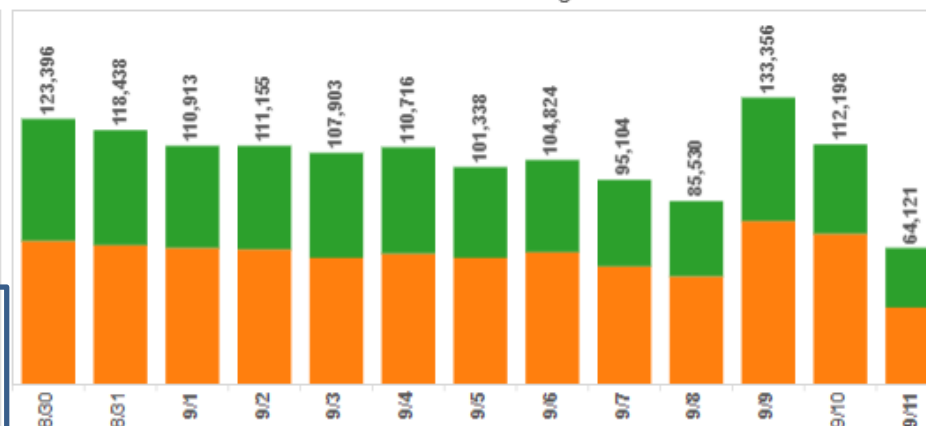
Patient Care Reports (PCR) Processed

Count of Activations	1,378,992
Count of Activations with Violations	790,496
Count of Violations for all Accepted Activations	2,278,151
Violations Per Activation	1.7
Average Activations per Accepted File	1.1
Count of PCRs Resubmitted	141,845
Submission Lag 25% (hours)	32.7
Submission Lag 50% (hours)	99.9
Submission Lag 75% (hours)	337.4

Submissions Accepted vs Rejected



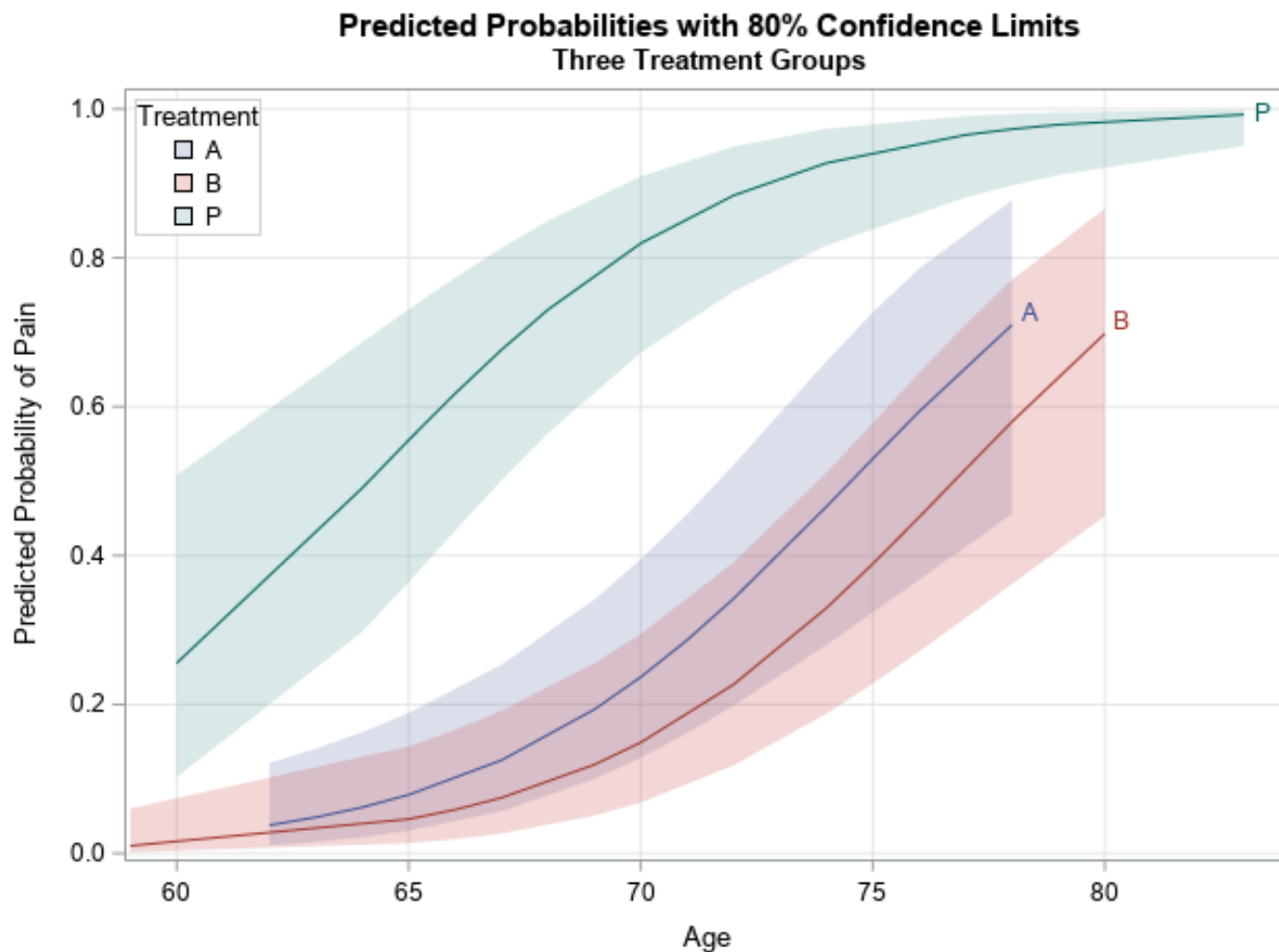
PCRs Processed With & Without Schematron Warnings



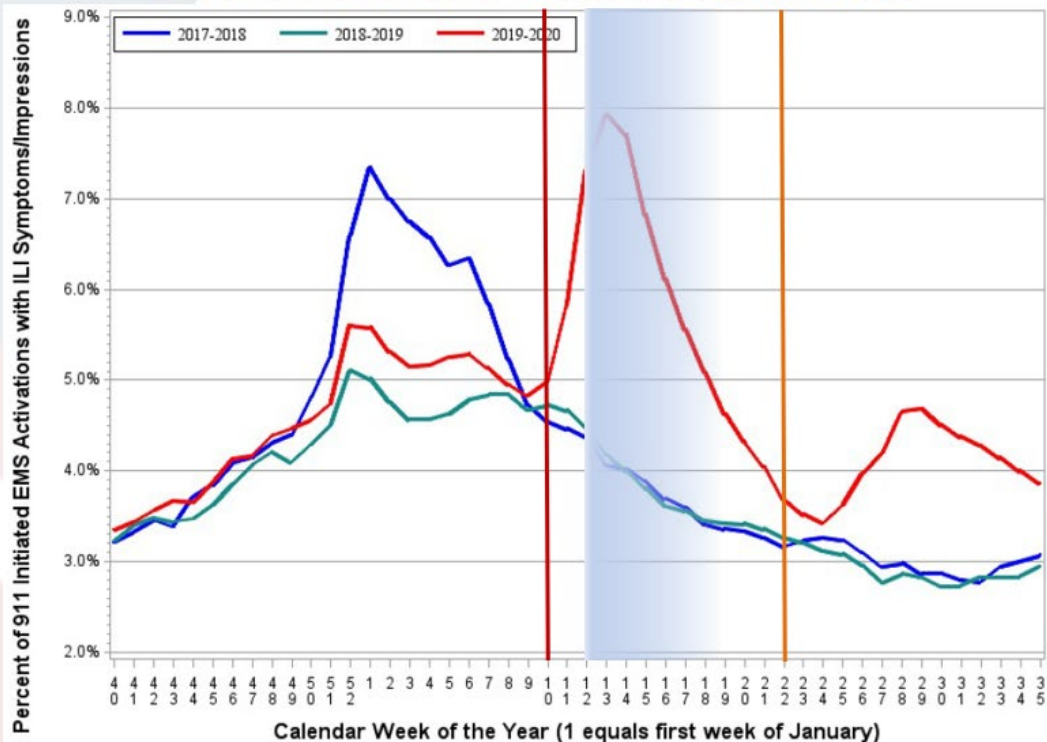
Break-Out Room Questions (#8)

- How do we improve timely EMS record completion? (agency level)
 - Software strategies
 - State-level strategies
- How do we facilitate immediate submission to NEMESIS TAC? (State/software level)
 - Software strategies
 - State-level strategies

Confidence Limits



Rate of ILI Activations



Open Discussion Forum

- Two achievable “lifts”
 - Timely submission of EMS records to the National Repository
 - Allow geographic identifiers to be used for surveillance research

Comments from Mr. Eric Chaney

Questions?

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NEMSIS V3 EMS Data Cube

Now available!

