

E-QUAL Avoidable Imaging Wave III: Benchmarking Activity Data Submission Guide

The following definitions and instructions are designed to support your ED in collection and submission of data for Activities 2 and 10 as part of the E-QUAL Avoidable Imaging Wave III learning collaborative.

We have summarized each of the steps below to match the E-QUAL Avoidable Imaging Portal.

Step 1: Select target

In Activity 2 of the Avoidable Imaging Portal you will be asked to select a target for quality improvement. Your site may engage in multiple QI activities across multiple targets, but for the purposes of E-QUAL we ask you identify your top priority. Please note data and collected in Activity 2 and 10 must be for the same target to support your measurement of improvement.

You can select from one of five targets based on the [ACEP Choosing Wisely™ List](#):

- Atraumatic Low Back Pain Imaging Utilization
- Head CT after minor head injury
- Abdominal CT for renal colic
- Head CT for syncope
- Chest CT for pulmonary embolism

Step 2: Review metrics

Each target requires submission of 1-3 utilization metrics for benchmarking. Please review which metrics are required for your Avoidable QI target.

Target	Metric(s)
Atraumatic Low Back Pain	<ol style="list-style-type: none"> 1. XR Imaging Utilization for back pain 2. CT Imaging Utilization for back pain 3. MRI Imaging Utilization for back pain
Minor Head Injury	<ol style="list-style-type: none"> 1. Head CT Utilization for Minor Head Trauma 2. Head CT Diagnostic Yield for Minor Head Trauma
Renal Colic	<ol style="list-style-type: none"> 1. Abdomen CT Utilization for Renal Colic
Syncope	<ol style="list-style-type: none"> 1. Head CT Utilization for Syncope
Pulmonary Embolism	<ol style="list-style-type: none"> 1. Chest CT Utilization for ED visits 2. Chest CT Diagnostic Yield for pulmonary embolism

Step 3: Download and share metrics to collect numerator and denominator information

We understand that most sites do not have ready access to all data necessary for imaging quality improvement. As such, we have designed each metric to be a simple proportion of key utilization markers that can help assess and guide your QI efforts. These metrics have been designed to utilize ED encounter data often available in standard electronic health records or billing data streams.

New for 2018: For Wave III we have added age-based exclusion criteria for several metrics. Specifically patients over age 65 are excluded from the metrics for the minor head injury, low back pain, syncope and renal colic quality improvement targets. For more details about this new exclusion you can review this short 10 minute [webinar](#).

If you cannot access the webinar please contact the E-QUAL Team at equal@acep.org

Metric – Back Pain (XR Utilization)

XR utilization among ED discharges with atraumatic low back pain

- Exclude age >65

Denominator (2 criteria)

- CRITERION #1: all discharged ED patients 18-65 years AND
- CRITERION #2: patients with back pain, as defined by one of the following diagnosis codes:
 - M43.20
 - M43.25-M43.28
 - M43.5X5-M43.5X9
 - M43.8X5-M43.8X9
 - M43.9
 - M46.46-M46.47
 - M47.20
 - M47.26-M47.28
 - M47.816-M47.819
 - M47.896-M47.9
 - M48.06
 - M48.07
 - M51.26-M51.27
 - M51.34-M51.37
 - M51.86-M51.87
 - M53.2X7-M53.2X8
 - M53.3
 - M53.86-M53.88
 - M54.30-M54.32
 - M54.40-M54.42
 - M54.5
 - M54.89
 - M54.9
 - M99.03-99.04
 - M99.23
 - M99.33
 - M99.43
 - M99.53
 - M99.63
 - M99.73
 - M99.83-M99.84
 - S33.5XXA-S33.9XXS

Numerator

- **XR of low back performed in the ED, as defined by one of the following CPT codes:**
 - **72100**
 - **72110**
 - **72114**
 - **72120**
 - **72200**
 - **72202**
 - **72220**

Metric – Back Pain Utilization (CT Utilization)

CT utilization among ED discharges with atraumatic low back pain

- Exclude age >65

Denominator (2 criteria)

- **CRITERION #1:** all discharged ED patients 18-65 years AND
- **CRITERION #2:** patients with back pain, as defined by one of the following diagnosis codes:
 - M43.20
 - M43.25-M43.28
 - M43.5X5-M43.5X9
 - M43.8X5-M43.8X9
 - M43.9
 - M46.46-M46.47
 - M47.20
 - M47.26-M47.28
 - M47.816-M47.819
 - M47.896-M47.9
 - M48.06
 - M48.07
 - M51.26-M51.27
 - M51.34-M51.37
 - M51.86-M51.87
 - M53.2X7-M53.2X8
 - M53.3
 - M53.86-M53.88
 - M54.30-M54.32
 - M54.40-M54.42
 - M54.5
 - M54.89
 - M54.9
 - M99.03-99.04
 - M99.23
 - M99.33
 - M99.43
 - M99.53
 - M99.63
 - M99.73
 - M99.83-M99.84
 - S33.5XXA-S33.9XXS

Numerator

- **CT of low back performed in the ED, as defined by one of the following CPT codes:**
 - 72131
 - 72132
 - 72133

Metric – Back Pain (MRI Utilization)

MRI utilization among ED discharges with atraumatic low back pain

- Exclude age >65

Denominator (2 criteria)

- **CRITERION #1:** all discharged ED patients 18-65 years AND
- **CRITERION #2:** patients with back pain, as defined by one of the following diagnosis codes:
 - M43.20
 - M43.25-M43.28
 - M43.5X5-M43.5X9
 - M43.8X5-M43.8X9
 - M43.9
 - M46.46-M46.47
 - M47.20
 - M47.26-M47.28
 - M47.816-M47.819
 - M47.896-M47.9
 - M48.06
 - M48.07
 - M51.26-M51.27
 - M51.34-M51.37
 - M51.86-M51.87
 - M53.2X7-M53.2X8
 - M53.3
 - M53.86-M53.88
 - M54.30-M54.32
 - M54.40-M54.42
 - M54.5
 - M54.89
 - M54.9
 - M99.03-99.04
 - M99.23
 - M99.33
 - M99.43
 - M99.53
 - M99.63
 - M99.73
 - M99.83-M99.84
 - S33.5XXA-S33.9XXS

Numerator

- **MRI of low back performed in the ED, as defined by one of the following CPT codes:**
 - 72148
 - 72149
 - 72158

Metric – Minor Head Injury (CT Utilization)

Head CT Utilization among ED discharges for minor head injury

- Exclude age >65

Denominator (2 criteria)

- **CRITERION #1:** all discharged ED patients aged 18-65 years

AND

- **CRITERION #2:** patients presenting with minor head injury, as defined by one of the following diagnosis codes:
 - S00.03XA
 - S00.33XA
 - S00.431A
 - S00.432A
 - S00.439A
 - S00.531A
 - S00.532A
 - S00.83XA
 - S00.93XA
 - S06.0X0A
 - S06.0X1A
 - S09.10XA
 - S09.11XA
 - S09.19XA
 - S09.8XXA
 - S09.90XA
 - S09.92XA
 - S09.93XA
 - S10.0XXA
 - S10.83XA
 - S10.93XA

Numerator

- Number of patients who had a noncontrast CT head performed in the ED, as defined by the following CPT code:
 - 70450

Metric – Minor Head Injury (CT Yield)

Head CT diagnostic yield among ED discharges and admits receiving non contrast Head CT

- Exclude age >65

Denominator (3 Criteria)

- **CRITERION #1:** All ED patients (including discharged and admitted) aged 18-65 years

AND

- **CRITERION #2:** patients with head injury, defined as one of the following diagnosis codes:

- S00.03XA
- S00.33XA
- S00.431A
- S00.432A
- S00.439A
- S00.531A
- S00.532A
- S00.83XA
- S00.93XA
- S02.0XXA
- S02.101A
- S02.102A
- S02.109A
- S02.110A
- S02.111A
- S02.112A
- S02.113A
- S02.118A
- S02.119A
- S02.11AA
- S02.11BA
- S02.11CA
- S02.11DA
- S02.11EA
- S02.11FA ○
- S02.11GA ○
- S02.11HA ○
- S02.19XA
- S02.2XXA
- S02.30XA
- S02.31XA
- S02.32XA
- S02.400A
- S02.401A
- S02.402A
- S02.40AA
- S02.40BA
- S02.40CA
- S02.40DA
- S02.40EA
- S02.40FA
- S02.411A

- S02.412A
- S02.413A
- S02.42XA
- S02.600A
- S02.601A
- S02.602A
- S02.609A
- S02.610A
- S02.611A
- S02.612A
- S02.620A
- S02.621A
- S02.622A
- S02.630A
- S02.631A
- S02.632A
- S02.640A
- S02.641A
- S02.642A
- S02.650A
- S02.651A
- S02.652A
- S02.66XA
- S02.670A
- S02.671A
- S02.672A
- S02.69XA
- S02.80XA
- S02.81XA
- S02.82XA
- S02.91XA
- S02.92XA
- S06.0X0A
- S06.0X1A
- S06.0X2A
- S06.0X3A
- S06.0X4A
- S06.0X9A
- S06.1X0A
- S06.1X1A
- S06.1X2A
- S06.1X3A
- S06.1X4A
- S06.1X9A
- S06.2X0A
- S06.2X1A
- S06.2X2A
- S06.2X3A
- S06.2X4A
- S06.2X9A
- S06.300A

- S06.301A
- S06.302A
- S06.303A
- S06.304A
- S06.309A
- S06.340A
- S06.341A
- S06.342A
- S06.343A
- S06.344A
- S06.349A
- S06.350A
- S06.351A
- S06.352A
- S06.353A
- S06.354A
- S06.359A
- S06.360A
- S06.361A
- S06.362A
- S06.363A
- S06.364A
- S06.369A
- S06.4X0A
- S06.4X1A
- S06.4X2A
- S06.4X3A
- S06.4X4A
- S06.4X9A
- S06.5X0A
- S06.5X1A
- S06.5X2A
- S06.5X3A
- S06.5X4A
- S06.5X9A
- S06.6X0A
- S06.6X1A
- S06.6X2A
- S06.6X3A
- S06.6X4A
- S06.6X9A
- S06.810A
- S06.811A
- S06.812A
- S06.813A
- S06.814A
- S06.819A
- S06.820A
- S06.821A
- S06.822A
- S06.823A

- S06.824A
- S06.829A
- S06.890A
- S06.891A
- S06.892A
- S06.893A
- S06.894A
- S06.899A
- S06.9X0A
- S06.9X1A
- S06.9X2A
- S06.9X3A
- S06.9X4A
- S06.9X9A
- S09.10XA
- S09.11XA
- S09.19XA
- S09.8XXA
- S09.90XA
- S09.92XA
- S09.93XA
- S10.0XXA
- S10.83XA
- S10.93XA

AND

- Number of patients in the cohort who had CT head, as defined by the following CPT code:
 - 70450

Numerator

- Number of patients who had a "positive" study, as defined by the following diagnoses:
 - S02.0XXA
 - S02.101A
 - S02.102A
 - S02.109A
 - S02.110A
 - S02.111A
 - S02.112A
 - S02.113A
 - S02.118A
 - S02.119A
 - S02.11AA
 - S02.11BA
 - S02.11CA
 - S02.11DA
 - S02.11EA
 - S02.11FA ○
 - S02.11GA ○
 - S02.11HA ○
 - S02.19XA
 - S02.2XXA

- S02.30XA
- S02.31XA
- S02.32XA
- S02.400A
- S02.401A
- S02.402A
- S02.40AA
- S02.40BA
- S02.40CA
- S02.40DA
- S02.40EA
- S02.40FA ○
- S02.411A ○
- S02.412A ○
- S02.413A ○
- S02.42XA ○
- S02.600A ○
- S02.601A ○
- S02.602A ○
- S02.609A ○
- S02.610A ○
- S02.611A ○
- S02.612A ○
- S02.620A ○
- S02.621A ○
- S02.622A ○
- S02.630A ○
- S02.631A ○
- S02.632A ○
- S02.640A ○
- S02.641A ○
- S02.642A ○
- S02.650A ○
- S02.651A ○
- S02.652A ○
- S02.66XA ○
- S02.670A ○
- S02.671A ○
- S02.672A ○
- S02.69XA ○
- S02.80XA ○
- S02.81XA ○
- S02.82XA ○
- S02.91XA ○
- S02.92XA ○
- S06.1X0A ○
- S06.1X1A ○
- S06.1X2A ○
- S06.1X3A ○
- S06.1X4A ○
- S06.1X9A

- S06.2X0A
- S06.2X1A
- S06.2X2A
- S06.2X3A
- S06.2X4A
- S06.2X9A
- S06.300A
- S06.301A
- S06.302A
- S06.303A
- S06.304A
- S06.309A
- S06.340A
- S06.341A
- S06.342A
- S06.343A
- S06.344A
- S06.349A
- S06.350A
- S06.351A
- S06.352A
- S06.353A
- S06.354A
- S06.359A
- S06.360A
- S06.361A
- S06.362A
- S06.363A
- S06.364A
- S06.369A
- S06.4X0A
- S06.4X1A
- S06.4X2A
- S06.4X3A
- S06.4X4A
- S06.4X9A
- S06.5X0A
- S06.5X1A
- S06.5X2A
- S06.5X3A
- S06.5X4A
- S06.5X9A
- S06.6X0A
- S06.6X1A
- S06.6X2A
- S06.6X3A
- S06.6X4A
- S06.6X9A
- S06.810A
- S06.811A
- S06.812A

- S06.813A
- S06.814A
- S06.819A
- S06.820A
- S06.821A
- S06.822A
- S06.823A
- S06.824A
- S06.829A
- S06.890A
- S06.891A
- S06.892A
- S06.893A
- S06.894A
- S06.899A
- S06.9X0A
- S06.9X1A
- S06.9X2A
- S06.9X3A
- S06.9X4A
- S06.9X9A

Metric – Renal Colic (CT Utilization)

Non-contrast Abdomen CT utilization among ED discharges with back pain, flank pain, and nephrolithiasis

- Exclude age >65

Denominator (2 criteria)

- CRITERION #1: all discharged ED patients aged 18-65 years

AND

- CRITERION #2: Discharge diagnosis of back pain, flank pain, or nephrolithiasis, as defined by one of the following diagnosis codes:
 - N20
 - N21
 - N22
 - N23
 - M43.20
 - M43.25-M43.28
 - M43.5X5-M43.5X9
 - M43.8X5-M43.8X9
 - M43.9
 - M46.46-M46.47
 - M47.20
 - M47.26-M47.28
 - M47.816-M47.819
 - M47.896-M47.9
 - M48.06
 - M48.07
 - M51.26-M51.27
 - M51.34-M51.37
 - M51.86-M51.87
 - M53.2X7-M53.2X8
 - M53.3
 - M53.86-M53.88
 - M54.30-M54.32
 - M54.40-M54.42
 - M54.5
 - M54.89
 - M54.9
 - M99.03-99.04
 - M99.23
 - M99.33
 - M99.43
 - M99.53
 - M99.63
 - M99.73
 - M99.83-M99.84
 - S33.5XXA-S33.9XXS

Numerator

- Noncontrast abdominal CT was performed in the ED, as defined by the following CPT code:
 - 74176

Metric – Syncope (CT Utilization)

Head CT utilization among ED syncope discharges and admits

- Exclude age >65

Denominator (2 criteria)

- **CRITERION #1:** all ED patients aged 18-65 years (discharged or admitted) AND
- **CRITERION #2:** First diagnosis of syncope, as defined by the following codes:
 - R55
 - T67.1
 - I95.1
 - F48.8

Numerator

- **Noncontrast CT head was performed in the ED as defined by the following CPT code:**
 - 70450

Metric – Pulmonary Embolism (CT Utilization)

Pulmonary Embolism CT utilization among ED visits

- *No age exclusion*

Denominator (1 criterion)

- **CRITERION #1:** all discharged ED patients 18 years and older

Numerator

- **CT chest for PE was done in ED, as defined by the following CPT codes:**
 - **71275**
 - **71260**

Metric – Pulmonary Embolism (CT Yield)

Pulmonary Embolism CT diagnostic yield among ED visits with a contrast Chest CT

- *No age exclusion*

Denominator (1 criterion)

- **CRITERION #1:** All ED patients 18 years and older (discharged and admitted) who had CT of chest performed, as defined by the following codes:
 - **71275**
 - **71260**

Numerator

- **Diagnosis of pulmonary embolism, as defined by the following code and all its subcodes:**
 - **I26**