Evidence of Performance Gap

As shown in Table 2, three facilities had positive chest imaging for 100% of patients who received a diagnosis and treatment for pneumonia while the poorest performing hospital had positive chest imaging only in 78.3% of eligible hospitalizations. The lowest performing decile of hospitals obtained imaging 83.5% of the time, as compared to 98.3% of the time for the highest performing facilities. Given there is variation in performance score and all hospitals were not already following diagnostic standard of care for pneumonia, there is evidence of an existing performance gap within the healthcare system examined. Furthermore, the VA has devoted considerable effort system-wide to encouraging providers to follow evidence-based care. A gap in performance observed within VA hospitals suggests less resourced hospitals are likely to also have an existing performance gap that is the same or larger than in the VA. While overall performance score is high, it is not 100% for all eligible hospitalizations at all hospitals which suggests a measure focused on nudging diagnostic behavior toward guideline concordant practice is necessary. An eCQM focused on only treatment prior to achieving higher performance on the currently proposed pneumonia diagnosis eCQM could lead to unintended patient harm if a baseline of guideline-based diagnostic behavior is not first established.

Table 2. Distribution of hospital performance on proposed eCQM of proportion of pneumonia diagnoses and treatment with chest imaging-confirmation, deciles assigned by performance score (100 VA hospitals; 8,253 hospitalizations), 1/1/2021-12/31/2021.

	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	Overall
Mean Score (SD)	78.3	83.5 (2.6)	88.7 (0.6)	90.4 (0.5)	91.7 (0.3)	92.6 (0.3)	93.7 (0.4)	94.3 (0.2)	95.0 (0.3)	96.1 (0.4)	98.3 (1.3)	100	92.4 (4.1)
N Entities	1	10	10	10	10	10	10	10	10	10	10	3	100
N Encounters	60	787	677	984	783	736	893	823	1,121	802	647	95	8,253

In an alternative method for examining whether there is preliminary evidence of a performance gap on the proposed eCQM, an empirical Bayes smoothed performance score distribution is presented (Table 3). Here, the mean scores shrink closer together and become more similar as an effect of using information on the overall mean distribution of performance scores to weight and adjust estimates for facilities with small denominators that may result in unreliable mean estimates. The results are generally similar between the two methods of presenting the distribution of eCQM performance score across a year of data from 100 VA facilities.

Table 3. Distribution of hospital performance on proposed eCQM of proportion of pneumonia diagnoses and treatment with chest-imaging confirmation, deciles assigned by performance score using empirical Bayes-smoothed scores. 100 VA Facilities, 8,253 hospitalizations, 1/1/2021-12/31/2021.

	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	All
Mean Score (SD)	90	90.5	91.4	91.9	92.2	92.5	92.9	93.3	93.8	94.3	97.1	100	93.0 (1.9)
Entities	1	10	10	10	10	10	10	10	10	10	10	3	100
N Encounters	283	1,016	965	562	688	707	629	901	1,035	1,003	747	95	8,253

Table 4. Assessment of Chest Imaging-Consistent Pneumonia Diagnosis eCQM for "Topped Out" Status.

Measure	N	75th Percentile	90th Percentile	Std. Error	Statistically Indistinguishable	Truncated Mean	Truncated SD	TCV	TCV ≤0.10
Imaging-pneumonia diagnosis eCQM	8,253	94.95	96.78	0.50	No	92.6	3.1	0.03	Yes

Abbreviations: eCQM, electronic clinical quality measure; std., standard; SD, standard deviation; TCV, truncated coefficient of variation (equal to truncated standard deviation divided by truncated mean)

The measure has statistically distinguishable (>2 standard errors apart) 75th and 90th percentile performance scores (NOT topped out) but did have a TCV less than 0.10 (Table 4). However, the chest imaging-confirmed pneumonia diagnosis eCQM did not meet both components so is not considered a topped-out measure.