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# Overview of Hospital Overall Star Ratings

Alabama Hospital Association Fall Quality Forum

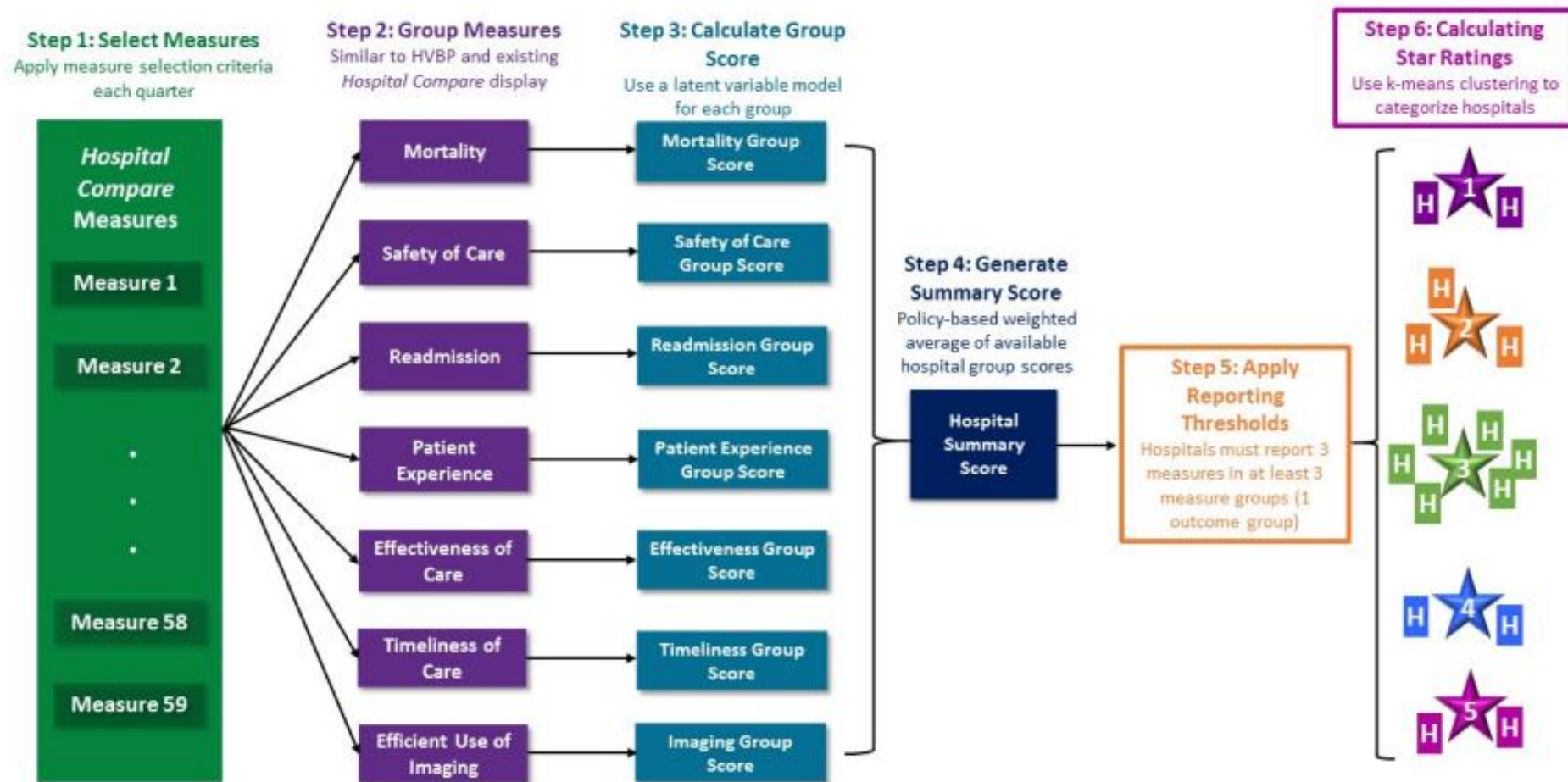
October 16, 2018

# CMS Hospital Overall Star Ratings



- Initial publication in July 2016
- Subsequently discovered significant calculation errors with chosen methodology
  - CMS temporarily suspended and made changes
  - Re-published in Dec 2017
- **Update was planned in July 2018, but postponed** due to unexpected shifts in ratings
- CMS soliciting further input and expected to release revised methodology
  - Listening sessions
  - Timing of next star ratings update TBD

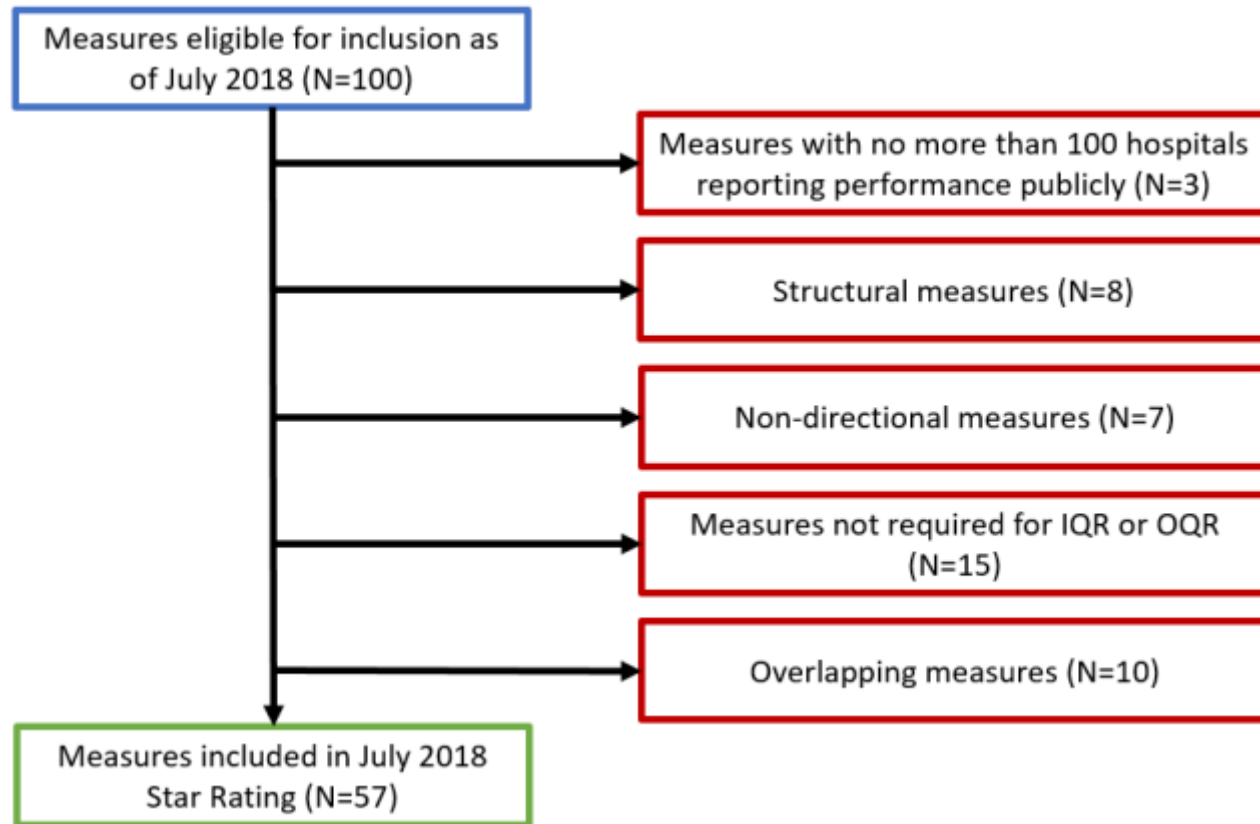
# Hospital Star Ratings Methodology



Source: CMS

# Step 1: Measure Selection

“Universe” of star ratings measures is Hospital IQR and Hospital OQR, subject to several exclusions



Source: CMS

## Step 2: Measure Grouping

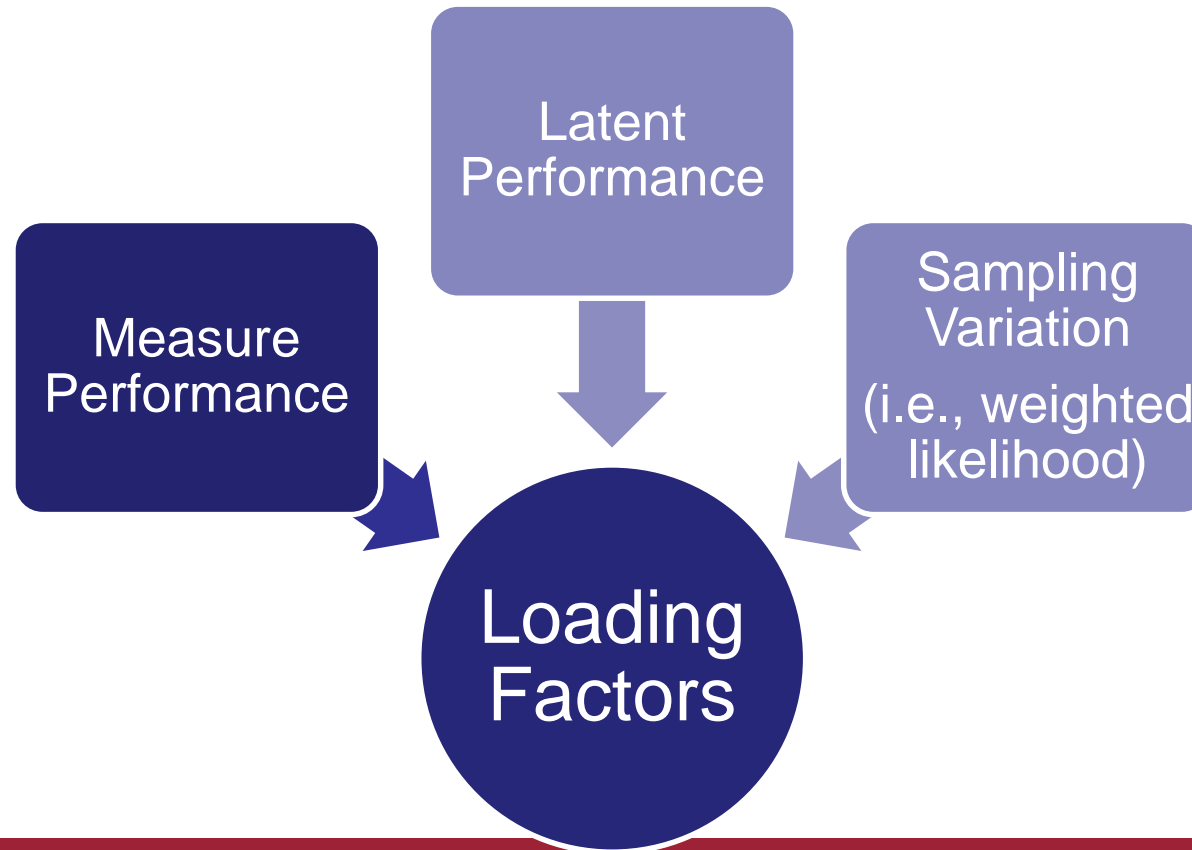
- Measures placed into one of seven groups, each of which has a policy weight (determined by CMS with input from public comment and TEP)

Measure Group	Star Rating Weights
Mortality (N=7)	22%
Safety of Care (N=8)	22%
Readmission (N=9)	22%
Patient Experience (N=10)	22%
Effectiveness of Care (N=11)	4%
Timeliness of Care (N=7)	4%
Efficient Use of Medical Imaging (N=5)	4%

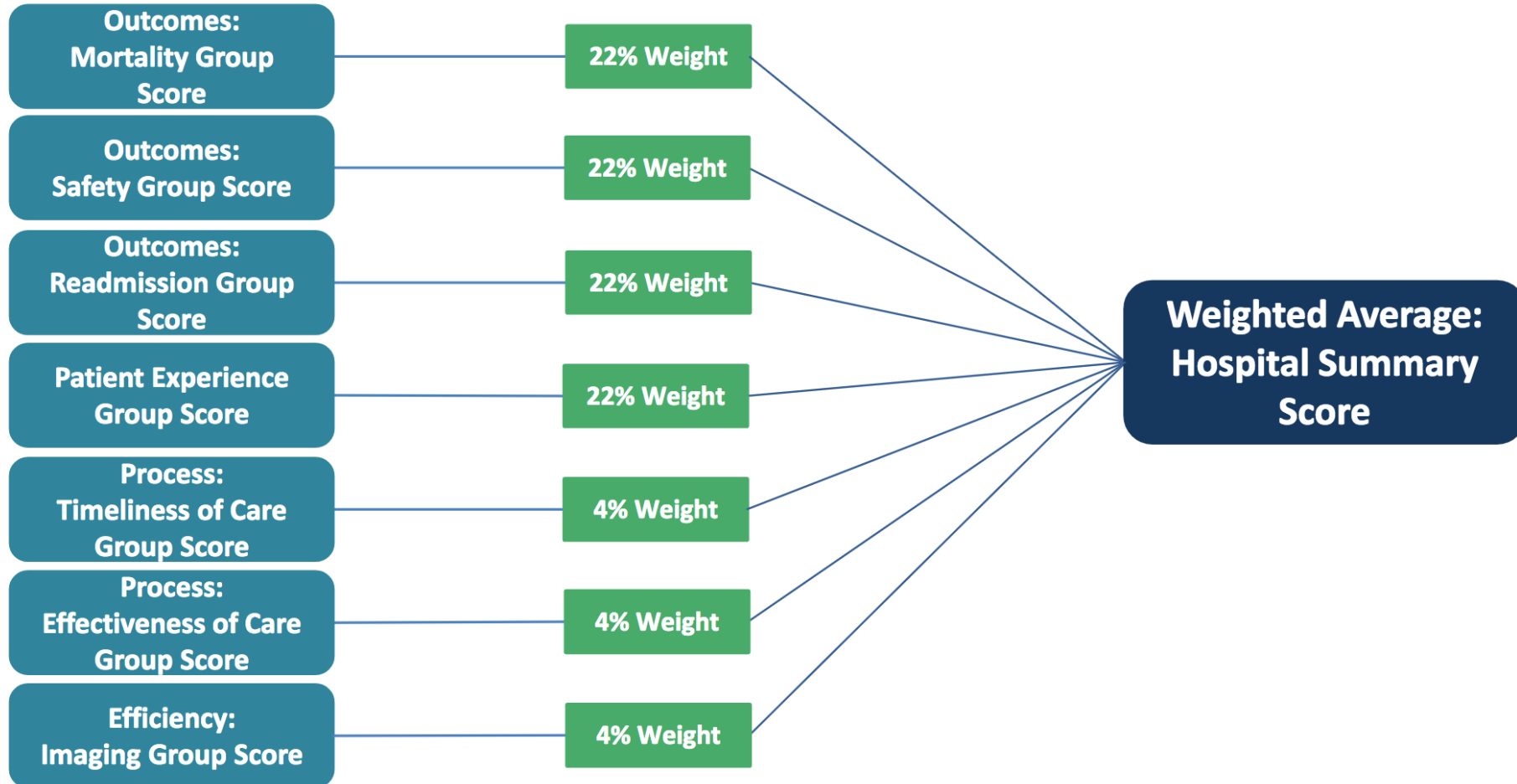
Source: CMS

# Step 3: Measure Group Scores (LVM)

- Latent variable modeling (LVM) – a statistical technique intended to ensure scores reflect measured and unmeasured (or latent) performance characteristics
- Loading factor calculated for each measure – a function of actual performance, estimated latent performance and sampling variation
- Each measure performance combined into group score



# Step 4: Calculate Summary Score



Source: CMS

# Step 5: Apply Reporting Thresholds

- To improve reliability, CMS applies two thresholds:
  - To receive a group score, hospital must have scores on 3 or more measures in the group
  - To receive an overall star rating, hospital must have scores on 3 or more groups, one of which must be an outcome group (i.e., mortality, safety or readmission)

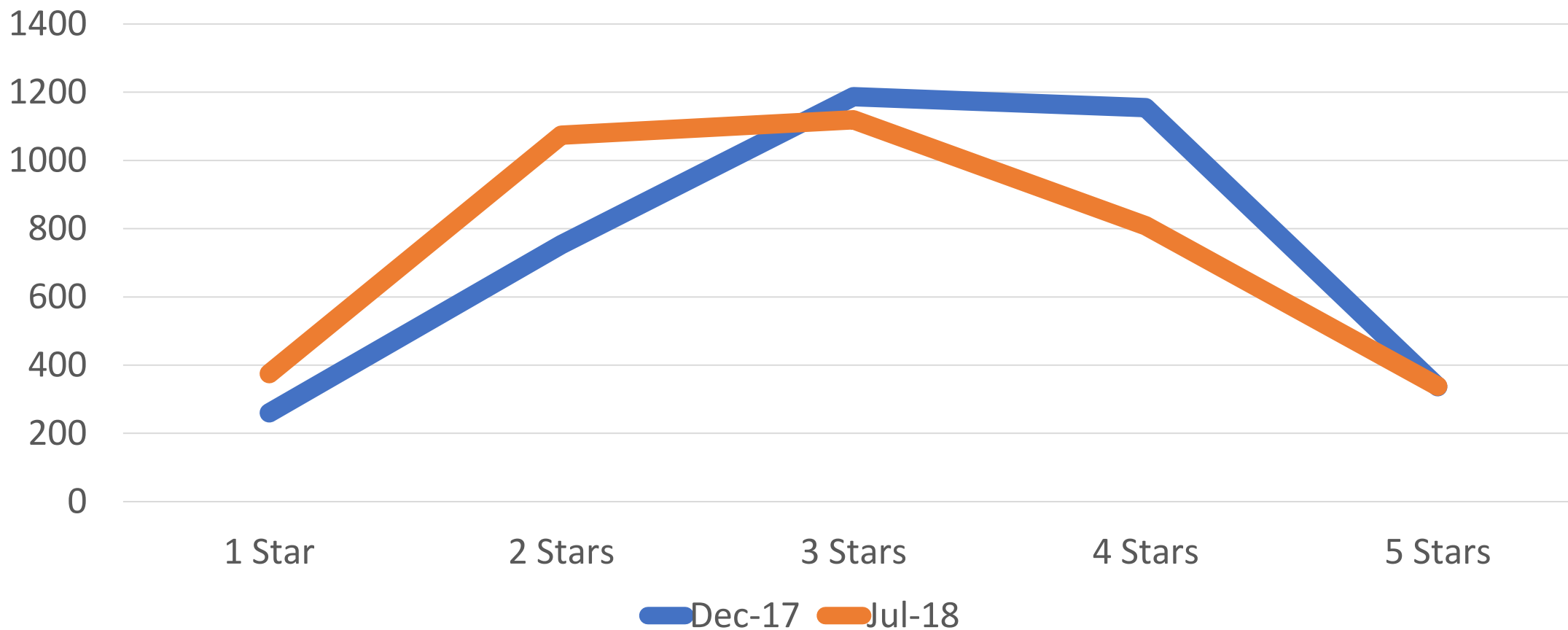


# Step 6: K-Means Clustering

- CMS takes summary scores and uses k-means clustering to assign a star rating
  - Approach makes scores within a given star rating category as similar as possible and those in different categories as different as possible
- Run to “convergence” to ensure sort order does not affect rating



# Distribution of Star Ratings – December 2017 and July 2018\*



\*Note: July 2018 update was canceled.



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