

The Hospital Value-Based Purchasing (VBP) Program

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Centers for Medicare & Medicaid Services:

“CMS is the federal agency that provides health coverage to more than 160 million through Medicare, Medicaid, the Children's Health Insurance Program, and the Health Insurance Marketplace. CMS works in partnership with the entire health care community to improve quality, equity and outcomes in the health care system.” –
[cms.gov](https://www.cms.gov)

What is Value-Based Purchasing?

Rewards for Quality of Care rather than Quantity of Care

- **Value Based Purchasing:**
 - 2% Medicare Payments withheld from Participating Hospitals
 - Reduction in payments are used to fund Value-Based Incentives based on Hospital Performance
 - Apply the reduction and incentive as a claim-by-claim adjustment in the fiscal year associated with performance period
- **Measures Used:**
 - Mortality and complications
 - Healthcare-associated infections
 - Patient safety
 - Patient experience
 - Efficiency and cost reduction
- **Two Scores on each Measure:**
 - Achievement- Performance Compared to Other Hospitals
 - Improvement- Improvement from Baseline
 - Final Score is the higher of the two scores



Hospital VBP Program

Why CMS indicates importance on VBP program:

- Quality of care
- Better experience
- Eliminate or reduce adverse events
- Evidence-based care standards
- Incentives for hospitals
- Increases the transparency
- Recognizes hospitals with Lower Costs and Quality Care

VBP Measures

- **Clinical Outcomes: *At least 2 Measures with at least 25 eligible discharges***
 - 30 Day Mortality- Acute Myocardial Infraction, Coronary Artery Bypass Grafting, Chronic Obstructive Pulmonary Disease (COPD), Heart Failure, Pneumonia
 - Hip or Knee Arthroplasty Complication Rate
- **Safety: *At least two measures with one being predicted infection by CDC***
 - Infections- Catheter, Central Line Bloodstream, Clostridium, Resistant Bacterial, Surgical Site
 - Patient Safety and Adverse Events Composite
- **Efficiency and Cost Reduction: *Minimum 25 Episodes of Care***
 - Medicare Spending per Beneficiary



VBP Measures

- **Person and Community Engagement- Survey- *At least 100 Surveys Completed***
 - Communication- Nurses and Doctors
 - Responsiveness of Staff
 - Communication about Medication
 - Cleanliness and Quietness
 - Care Transition
 - Overall Rating of Hospital



More Information and References

Center for Medicare & Medicaid Services

- <https://www.cms.gov/medicare/quality/initiatives/hospital-quality-initiative/hospital-value-based-purchasing>
- Medicare Learning Network: Hospital Value Based Purchasing
https://www.hhs.gov/guidance/sites/default/files/hhs-guidance-documents/Hospital_VBPurchasing_Fact_Sheet_ICN907664.pdf



Analysis of VPB Measures

- Correlations between Measures
- Correlations between Measures and Total Performance
- Hospital Ownership Type and Performance
- Hospital By State Performance
- Best Hospital Performance and Locations
- Census Data and Hospital Performance

Review of Code in Jupyter Lab, Analysis and Visualizations



Additional Analysis and Observations

- **Weighted and Unweighted Scores**
 - Results might be different with raw values
 - Other correlation Coefficients might have different results
- **Census**
 - Not all hospitals participated in data submission
 - Example- Maps had areas without data points and “NaN” listed for some hospitals
 - There could correlations with Census data outside of the hospitals with VBP participation.
 - Using Zip Code for each Hospital to compare with Census Data does not reflect the full geography scope for each hospital
 - Data comparisons did not account for scale of each variable (ex: Total Score vs. Income)

Questions?