



Evaluation of 40 Teaching Hospitals From São Paulo, Brazil, Utilizing Inpatient AHRQ Quality Indicators

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- We evaluated administrative data from 40 teaching hospitals in São Paulo state (Brazil).
- 265,337 hospital discharges on 2006 and 2007, electronically notified to the Ministry of Health, were evaluated.
 - 241,243 - public health system;
 - 24,294 - private health plans.
- 22 AHRQ inpatient quality indicators, adapted for ICD 10 and for Brazilian medical procedures code were used.
- We compared the volume indicators to AHRQ lower thresholds, global performance of Brazilian hospitals to US results (2004) for mortality and utilization rates, and private to public patients.
- Qui-square test was performed to evaluate statistical significance.
- We made no adjustments on DRG, in view of the lack of comorbidity data.

Quality indicators comparative results for 40 hospitals in São Paulo state and north-american data

Volume Quality Indicators	Min	Max	Median	Mean	AHRQ*
Q1 1 Esophageal Resection Volume	1	20	3	7	4
Q1 2 Pancreatic Resection Volume	1	45	5	8	8
Q1 4 Abdominal Aortic Aneurysm Repair Volume	1	74	8	14	39
Q1 6 Coronary Artery Bypass Graft Volume	13	3796	123	364	208
Q1 6 Percutaneous Transluminal Coronary Angioplasty Volume	1	1833	244	450	790
Q1 7 Carotid Endarterectomy Volume	1	47	9	14	128
Mortality Indicators for Inpatient Conditions					
Q1 15 Acute Myocardial Infarction Mortality Rate	0,00	57,14	13,06	11,98	8,44
Q1 16 Congestive Heart Failure Mortality Rate	0,00	25,00	13,29	12,46	4,13
Q1 17 Acute Stroke Mortality Rate	0,00	66,67	17,06	18,23	11,18
Q1 18 Gastrointestinal Hemorrhage Mortality Rate	0,00	50,00	8,95	8,31	2,75
Q1 18 Hip Fracture Mortality Rate	0,00	15,38	3,46	3,26	3,01
Q1 20 Pneumonia Mortality Rate	0,00	40,00	18,30	18,42	8,49
Mortality Indicators for Inpatient Procedures					
Q1 8 Esophageal Resection Mortality Rate	0,00	100,00	0,00	20,14	8,38
Q1 9 Pancreatic Resection Mortality Rate	0,00	100,00	7,92	12,15	5,36
Q1 11 Abdominal Aortic Aneurysm Repair Mortality Rate	0,00	100,00	18,60	24,08	6,19
Q1 12 Coronary Artery Bypass Graft Mortality Rate	0,00	15,66	6,46	6,01	3,07
Q1 30 Percutaneous Transluminal Coronary Angioplasty Mortality Rate	0,00	4,38	2,14	2,05	1,21
Q1 31 Carotid endarterectomy Mortality Rate	0,00	25,00	0,00	2,80	0,66
Q1 13 Craniotomy Mortality Rate	0,00	100,00	12,12	7,74	7,50
Q1 14 Hip Replacement Mortality Rate	0,00	25,00	0,00	1,75	0,23
Utilization Indicators					
Q1 21 Cesarean Delivery Rate	25,81	89,47	41,87	42,87	26,56
Q1 23 Laparoscopic Cholecystectomy Rate	0,00	92,59	25,81	35,53	77,41

Source: Hospital Information System (SIH/SUS), Hospital Communication System (CIH).
 *Nationwide Inpatient Sample (2007) - Rates per 100.

RESULTS

- There is important dispersion for almost all indicators.
- Many outliers with poor results were identified.
- For any of the 6 volume QI, at least 50% of hospitals performing the procedures are below the respective AHRQ benchmark lower threshold.
- The utilization rates reveal underuse of laparoscopic cholecystectomy and overuse of Cesarian delivery, compared to American results.
- Public patient mortality rates are significantly higher than private patients in 8 out of 14 indicators. Low figures precluded statistically significant results in 4 out of 6 indicators.
- 13 out of 14 mortality indicator results (rates) are worse than American results, differences being statistically significant (p<0.05).

CONCLUSIONS

- Selected inpatient AHRQ QI are useful for evaluating Brazilian hospital discharges.
- DRG adjustment is not possible, because there is no information on comorbidities, and efforts must be done to correct this drawback.
- The variability observed point to a need of relevant interventions by health authorities to improve results.
- Brazilian hospitals poorer performance when compared to American results urge additional studies to determine correctable causes and plan actions.
- Unsatisfactory public patients' performance when compared to private patients is evidence of disparity associated to lower income and other social differences.
- The public health system should address the low figures observed in most hospitals that perform procedures evaluated by volume indicators, maybe deciding for reference centers.
- Systematic evaluation of hospital assistance is of paramount importance, although not adopted in Brazil nowadays.
- This study suggests that quality indicators based on administrative data is feasible, low cost and can be used as surveillance system for monitoring hospital performance and inequalities, driving specific studies and/or interventions as needed.

