

Nursing Homes

Case Study in Alternative Quality
Adjustment Methodology



Quality Adjustment in PPI

□ F I O P I

- Fixed Input- Output Price Index



Quality Adjustment in PPI

- Same basic principles of quality adjustment
 - Manufacturing PPIs
 - Service PPIs



Quality Adjustment in PPI

- Determine Output of Service Industries
 - Relate Output to Price
 - Broadcast Radio

- Determine Changes in Output

- Relate Output Changes to Input Changes



Secondary Source Data

- Manufacturing Industries
 - Hedonic Models for Computers



Secondary Source Data

- Service Industries
 - Auto Insurance



Secondary Source Data

- ISO Data
- Premium Changes
- Risk Changes/Price Changes

What is the output of nursing homes?

Provision of care and services to residents



Nursing Home Output

- Study by Center for Medicare and Medicaid Services



Nursing Home Output

- Nurse Staffing Levels
- Quality of Care



Nursing Home Output

- Update of Nursing Staff Hours
 - Data for each Nursing Home updated at least once every 15 months on a flow basis



Nursing Home Quality Adjustment

- Data :
 - Total Nursing Staff Hours
 - RNs Hours per Resident
 - LPNs Hours per Resident
 - CNAs Hours per Resident
 - Number of Residents

Nursing Home Quality Adjustment

Provnum: 395380	12/02	1/03
Number of residents:	144	154
RNHR:	1.33	1.17
LPNLVNHR:	0.18	0.29
CNAHR:	3.06	2.71
TOTALHR:	4.57	4.17

	12/02	1/03	Change in staffing intensity
RNHR	1.33	1.17	-0.16
LPNLVNHR	0.18	0.29	0.11
CNAHR	3.06	2.71	-0.35



Nursing Home Quality Adjustment

- BLS Wage Data
- Average Hourly Earnings
- Change in Nursing Staff Hours

Nursing Home Quality Adjustment

Change in RNHR times wage:	$-.016 * \$23.19 = -\3.7104
Change in LPNLVNHR times wage:	$0.11 * \$15.14 = \1.6654
Change in CNAHR times wage:	$-0.35 * \$9.54 = -\3.3390
Summation of marginal cost of new input requirements	$-\$5.3840$



Nursing Home Quality Adjustment

Price for Private Payer was \$150 per day and increased to \$165 per day

$$(\$165 + \$5.3840)/\$150 = 1.1359$$

Price for Medicaid was \$100 per day and increased to \$110 per day

$$(\$110 + \$5.3840)/\$100 = 1.1538$$

Conclusion

Benefits of Secondary Source Data



Conclusion

- Identification of changes in output
- Data availability
- Respondent burden reduction
- Consistent data across the industry