Alternative Disease-based Price Indexes using PPI data: Progress and Gaps in Coverage

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Medical Care Price Index Progress in the Producer Price Index Program at BLS

- 1. Current PPI medical price indexes
- 2. Progress toward creating disease-based price indexes using available data from the PPI
- 3. Implementation of adjustments for quality change in the PPI General Hospital Index

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User Needs for Medical Price Indexes

- Industry- or provider-based indexes meet a national accounts need for industry-based deflators. Therefore, current industry indexes will not change.
- Indexes organized according to payer meet the needs of health insurance companies and other public users.
- **Disease-based indexes would meet a national health account need and could meet the needs of health policy analysts.**

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Current Medical Care Indexes in the PPI

Industry	Publication date
Pharmaceutical Preparation Manufacturing	July 1981
General Hospitals	Jan 1993
Psychiatric and Substance Abuse Hospitals	Jan 1993
Other Specialty Hospitals	Jan 1993
Offices of Physicians	Jan 1994
Diagnostic Imaging Centers	July 1994
Medical Laboratories	July 1994
Nursing Care Facilities	Jan 1995
Home Health Care	Jan 1997
Retail Pharmacies and Drug Stores	July 2000
Health and Medical Insurance Carriers	Jan 2003
Residential Mental Retardation Facilities	Jan 2004
Blood and Organ Banks	Jan 2007
Offices of Dentists	**Jan 2011**

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Flexibility of PPI data

- PPI has the flexibility to use price* data in different publication structures for Medical Care
  - Industry/provider-based indexes (current industry index)
  - Alternative indexes organized by payer type (current alternative index)
  - Alternative aggregations of Health Care Services (outpatient versus inpatient breakout)
- Alternative disease-based (cross provider) indexes

*price=reimbursement to a specific provider for a specific treatment

Current Publication Structure for General Hospitals

- Since 2008 – PPI General Hospitals index published according to MDC -- without payer detail.

622110101	Diseases and disorders of the nervous system
622110103	Diseases and disorders of the ear, nose, mouth, and throat
622110104	Diseases and disorders of the respiratory system
622110105	Diseases and disorders of the circulatory system
622110106	Diseases and disorders of the digestive system
622110107	Diseases and disorders of the hepatobiliary system and pancreas
622110108	Diseases and disorders of the musculoskeletal system and connective tissue
622110109	Diseases and disorders of the skin, subcutaneous tissue and breast
622110111	Endocrine, nutritional, and metabolic diseases and disorders
622110112	Diseases and disorders of the kidney and urinary tract
622110113	Diseases and disorders of the male reproductive system
622110114	Diseases and disorders of the female reproductive system
622110115	Pregnancy, childbirth, and the puerperium
622110116	Newborns and other neonates with conditions originating in the perinatal period
622110117	Diseases and disorders of the blood and blood forming organs and immunological diseases
622110118	Myeloproliferative diseases and disorders, and poorly differentiated neoplasms
622110119	Infectious and parasitic diseases (systematic or unspecified sites)
622110122	Alcohol/drug use and alcohol/drug induced organic mental disorders
622110123	Injuries, poisonings, and toxic effects of drugs
622110125	Factors influencing health status and other contacts with health services
622110126	Multiple significant trauma
622110127	Human immunodeficiency virus infections
622110128	Other diseases and disorders

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PPI Alternative Index for Hospitals by Payer – No Disease Category Detail

- 62211A – General medical and surgical hospitals by payer type
  - 62211A2 – Medicare patients
  - 62211A4 – Medicaid patients
  - 62211A6 – All other patients

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Alternative Disease-based Index - Publication Level Detail (cross provider)

1 - Infectious and parasitic diseases
2 - Neoplasms
3 - Endocrine, nutritional, and metabolic diseases and immunity disorders
4 - Diseases of the blood and blood-forming organs
5 - Mental disorders
6 - Diseases of the nervous system and sense organs
7 - Diseases of the circulatory system
8 - Diseases of the respiratory system
9 - Diseases of the digestive system
10 - Diseases of the genitourinary system
11 - Complications of pregnancy, childbirth
12 - Diseases of the skin and subcutaneous tissue
13 - Diseases of the musculoskeletal system and connective tissue
14 - Congenital anomalies
15 - Certain conditions originating in the perinatal period
16 - Injury and poisoning
17 - Other conditions (signs and symptoms)
18 – Supplementary classifications

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Disease-based Price Indexes Should Capture:

- a path or course of treatment for any given diagnosis across all providers (industries);
- price change caused by substitutions of treatment protocols within (theoretically captured in current PPI) and across (not relevant for a PPI) treatment providers; and
- the occurrence of quality change (relevant for **all** price indexes)
  - PPI (since 2008) measures the input costs of quality change for select hospital treatments

http://www.nber.org/confer/2008/si2008/PRCR/murphy2.pdf

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Substitution Across Provider - Example

Assume 1000 patients in both time periods

	Year 1	Year 2
Inpatient Hospital Quantity for Asthma	1,000	200
Office-based Physician Quantity for Asthma	200	1,000
Inpatient Hospital Price for Asthma	$3,000	$3,000
Office-based Physician Price for Asthma	$1,000	$1,000
Revenues from Inpatient Hospital for Asthma	$3,000,000	$600,000
Revenues from Office-based Physician for Asthma	$200,000	$1,000,000
Total Revenues for Treatment of Asthma	$3,200,000	$1,600,000
Price per patient for treating Asthma	$3,200	$1,600

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Substitution example continued

- Note that the price of the service at each provider did not change.
- Therefore, the substitution across provider is not relevant for industry-based PPIs.
- However, the change in utilization will result in a drop in the price of treating the disease and, therefore, would be shown in disease-based indexes.

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What is the Value Added from Disease-based Indexes from PPI?

- Captures utilization shifts across provider as they occur (same as CNSTAT *(2002)* methodology)
- As health care is increasingly paid for by third parties, health policy officials need statistics that include payments from all sources (not just out of pocket)
- PPI will use price indexes that are **specific** to disease categories where available to measure price change in these disease-based indexes

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Possibilities for Weighting Disease-based Indexes

- Economic Census data
  - 2007 Census implementation of the NAPCS disease-based structure (published late 2010)
    - Available for a limited number of industries (only 5 that the PPI could use) every 5 years
- MEPS – PPI's current consideration
  - adopting the CNSTAT *(2002)* methodology for annual medical care utilization changes
    - Attractive because shifts in utilization are measured annually (MEPS data is lagged 3 years)

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Progress toward Development of Alternative Structure

Completed:

- Product code assignment of thousands of priced items so that, for most industries, health care items priced in the PPI can be placed in indexes organized by disease

Next steps (resource dependent):

- Research use of MEPS data
- Explore the calculation of a physician index organized by disease (now that product coding of this industry is complete)

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Limitation of the Disease-based Structure

- **PPI industry coverage gaps in health care (no coverage in outpatient care centers, ambulatory surgical and emergency centers, etc.)**
  - These providers representing 13.5% of all Health Care Services will not be included in the index because we do not measure price change for them
  - No coverage for the fastest growing industries in the health care sector - Ambulatory health care services grew 88% between 2002 and 2007 (as compared to 39% growth in the health care sector overall)

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