BEA's Medical Care Satellite Account: Progress Report

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BEA is working to improve how we measure the health sector in the national accounts.

- Progress:
  - We have completed a reconciliation of our nominal spending estimates with those published by CMS (National Health Expenditures Account)
  - We have been conducting research on how to redefine the output of this sector as the "treatment of disease," as advocated by health economists
    - This requires estimates of spending by disease and
    - New price deflators constructed using this new definition
- Importance: Because the sector is large (nearly 20% of GDP), measurement problems can conceivably affect overall GDP growth estimates.

Redefining output affects how we report nominal spending.

Spending side of the accounts

Production Side of the accounts

Growth in Nominal Spending, 2001-2005

Medical Care Spending for the Treatment of:		Revenues by Industry	
1 Infectious and Parasitic Diseases	15.0%	Prescription Drugs	12.1%
2 Neoplasms	11.8%	Physician Services	10.0%
3 Endocrine, Nutritional and Metabolic Diseases, and Immunity Disorders	11.6%	Hospital Services	
4 Diseases of the Blood and Blood-Forming Organs	28.3%	Inpatient	8.4%
5 Mental Disorders	10.7%	Outpatient	9.1%
6 Diseases of the Nervous System and Sense Organs	11.8%	Emergency Room	7.3%
7 Diseases of the Circulatory System	5.3%		
8 Diseases of the Respiratory System	4.5%		
9 Diseases of the Digestive System	11.1%		
10 Diseases of the Genitourinary System	15.8%		
11 Complications of Pregnancy, Childbirth, and the Puerperium	7.6%		
12 Diseases of the Skin and Subcutaneous Tissue	9.3%		
13 Diseases of the Musculoskeletal System and Connective Tissue	9.8%		
14 Congenital Anomalies and Certain Conditions Originating in the Perinatal Period	22.7%		
15 Certain Conditions Originating in the Perinatal Period	18.9%		
16 Symptoms, Signs, and Ill-Defined Conditions	10.8%		
17 Injury and Poisoning I	8.6%		
18 Supplementary Classifications—E Codes	5.7%		
	9.7%		9.7%

Source: Calculations based on data used in Aizcorbe, Bradley, et al (2011)

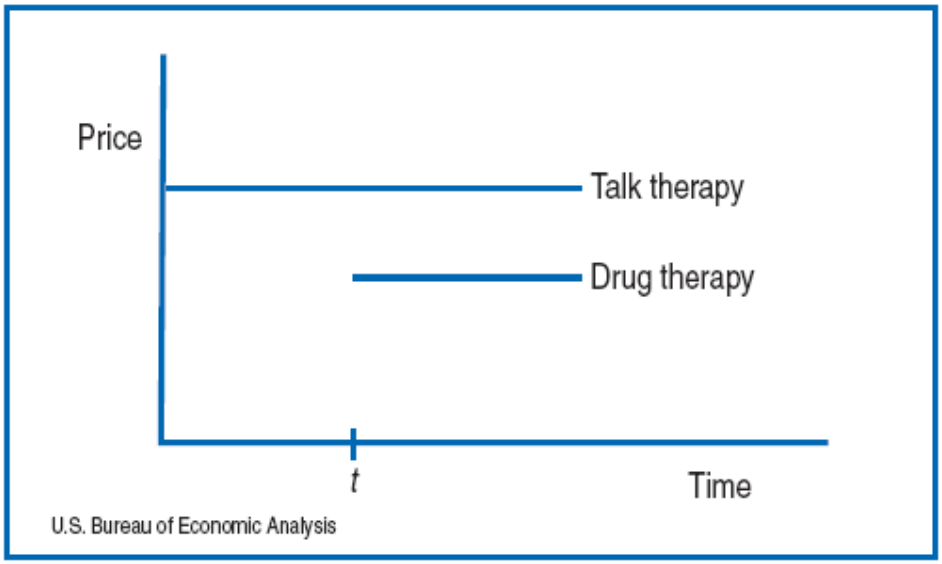
Construction of Spending by Disease Estimates

- Possible data sources:
  - Census (every five years, establishment surveys)
  - Medical Expenditure Panel Survey (annual, patient surveys)
  - Claims data (convenience samples)
- No consensus on method (comorbidities are an issue)
  - Primary diagnosis
  - Proportional approach
  - Episode grouping algorithms
- BEA is doing research into these issues

Redefining output also implies new price indexes.

- The new price indexes would reflect any shifts in services across industries that alter the cost of treating disease.

Chart 2. An Example of Treatment Substitution



- Although disease-based indexes can rise slower or faster than traditional service price indexes, the existing empirical work suggests disease-based indexes show *slower* price growth.

Differences in the price indexes are numerically important.

Effect of redefining the output of the medical care sector, 2001-2005

(compound annual growth rates)

	Output Definition	
	old	new
Medical Care Sector		
Nominal spending	9.7%	9.7%
Price Deflator	7.8	6.8
Real spending	1.8	2.7
Contribution to real GDP	.36pp	.54pp

Source: Calculations based on data used in Aizcorbe, Bradley, et al (2011)

Bottom line: BEA/BLS research suggests that real GDP growth over 2001-2005 grew about .2 percentage points faster than currently shown in the national accounts

Caveat: Evidence for earlier time periods is mostly based on case studies.

Sources for new price deflators

- BLS has been working on adjusting existing PPIs to approximate disease-based price indexes
  - Ralph Bradley will describe this method as it relates to the CPI
  - Bonnie Murphy will discuss experimental PPI indexes.

- BEA will continue research to
  - Construct historical price indexes for deflation purposes
  - Explore alternative data sources that might provide more reliable price deflators (claims data + MEPS survey)

Unresolved issue: What price index should we use for the industry accounts?

Spending side of the accounts

Growth in Real Spending, 2001-2005	
Medical Care Spending for the Treatment of:	
1 Infectious and Parasitic Diseases	-0.2%
2 Neoplasms	0.4%
3 Endocrine, Nutritional and Metabolic Diseases, and Immunity Disorders	5.3%
4 Diseases of the Blood and Blood-Forming Organs	-1.8%
5 Mental Disorders	6.5%
6 Diseases of the Nervous System and Sense Organs	-0.1%
7 Diseases of the Circulatory System	4.9%
8 Diseases of the Respiratory System	0.2%
9 Diseases of the Digestive System	3.5%
10 Diseases of the Genitourinary System	0.2%
11 Complications of Pregnancy, Childbirth, and the Puerperium	0.2%
12 Diseases of the Skin and Subcutaneous Tissue	-1.3%
13 Diseases of the Musculoskeletal System and Connective Tissue	2.6%
14 Congenital Anomalies and Certain Conditions Originating in the Perinatal Period	3.2%
15 Certain Conditions Originating in the Perinatal Period	0.9%
16 Symptoms, Signs, and Ill-Defined Conditions	0.2%
17 Injury and Poisoning I	0.6%
18 Other	0.7%
	2.7%

Source: Calculations based on data used in Aizcorbe, Bradley, et al (2011)

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Production Side of the accounts

Revenues by Industry	
Prescription Drugs	3.6%
Physician Services	3.9%
Hospital Services	
Inpatient	-0.1%
Outpatient	-1.8%
Emergency Room	1.1%
	1.8%

Source: Calculations based on data used in Aizcorbe, Bradley, et al (2011)

If we use the traditional deflators for the industry accounts, measured real GDP growth will differ in the two accounts

Plans

- September 2011: Publish an article in the Survey of Current Business that
  - illustrates what a medical care account would look like
  - the kinds of questions it could address, questions it cannot address
  - methodological issues that must be resolved before the BEA publishes a “satellite account” for medical care

- Continued research on methodological issues

Please visit our "Health Accounts" website for papers and other background materials

Health Care Satellite Account

BEA's Plans

- Understanding the changing role of health care in the U.S. economy and its impact on economic growth is critical to addressing many of the important policy issues being raised regarding health care. With this initiative, BEA is improving the accuracy of its core GDP estimates and developing a supplemental set of satellite accounts on health care that will:
- Create common BEA-CMS sets of health expenditure statistics.
- Produce a comprehensive set of health care sector accounts for health care income, expenditure, and product.
- Develop state-of-the-art medical care price and real output measures that better break out the delivery of health care from increases in the price of that care.
- Produce estimates of medical care spending by type of disease that go beyond estimates of spending by provider type.

For details on BEA's plans, see: Toward a Health Care Satellite Account (PDF)

Completed Work:

- "Changing Mix of Medical Care Services: Stylized Facts and Implications for Price Indexes." (PDF) Aizcorbe and Nestoriak. *Journal of Health Economics*, May 2011.
- "Medical Care Expenditure Indexes: A Comparison of Indexes using MarketScan and Pharmetrics Data" (PDF) Dunn, Liebman, Pack, Shapiro. BEA Working Paper (WP2010-17)
- "Alternative Price Indexes for Medical Care: Evidence from the MEPS Survey." Aizcorbe, Bradley (BLS), Herauf, Kane, Liebman, Pack, Rozental (BLS). BEA Working Paper (WP2011-01)
- "A Reconciliation of Health Care Expenditures in the National Health Expenditure Accounts and in Gross Domestic Product." (PDF) Caitlin (CMS), Hartman (CMS), Kornfeld (BEA). *Survey of Current Business*, September 2010.
- "Measuring Health Care Costs of Individuals with Employer-Sponsored Health Insurance in the U.S.: A Comparison of Survey and Claims Data." (PDF) Aizcorbe, Liebman, Pack, Cutler, Chernew, Rosen. BEA Working Paper (WP2010-06).
- "Price Indexes for Drugs: A Review of the Issues." (PDF) Aizcorbe and Nestoriak. Forthcoming *Handbook of the Pharmaceutical Industry*, Danzon and Nicholson, eds.
- "Drug Innovations and Welfare Measures Computed from Market Demand: The Case of Anti-Cholesterol Drugs." (PDF) Dunn. BEA Working Paper (WP2010-15).