Treatment of Health in National Accounts and Satellite Health Accounts

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Outline

- Incorporating Satellite Health Accounts into GDP framework

- Improving estimates of health care spending for official NIPA

Continuing Work on Quality Adjustment in Satellite Accounts is Crucial to Measure Living Standards

- Spending by disease ≠ price of health care

    - Approach captures bias from shift from more expensive to less expensive treatments — e.g., inpatient to outpatient— which is missed in official price indexes

    - But counts increasing intensity of treatment as a cost, even if it increases quality

    - Huge promise of the Health Care Satellite accounts is the potential to quality adjust
        - Great to see how much progress is being made on this front!

- Cost-of-living approach to quality adjustment (as used by Cutler, Dunn) is best for GDP as a measure of standard of living

Quality-Adjusted Spending also Useful for Question: Is Health Care Worth It?

How to answer that question depends on perspective:

- From macro perspective, if marginal $1 of resources devoted to health care provides greater than $1 in value, increase is "worth it"

    - This depends on costs of care, not prices
        - If Medicare cuts reimbursements to hospitals, or hospital mergers raise prices, doesn't change value of health care from macro/real resource perspective
        - Just transfers between payers and providers

    - So perhaps accounts should also measure costs of care in addition to spending

- From private perspective, compare value to price

    - Medicare lowering prices makes spending seem "worth it" from taxpayers perspective

Satellite Health Accounts and GDP

- Quality-adjusted spending by disease not likely to be integrated into official GDP estimates any time soon

    - Methodology treats all health care innovations as new goods and captures the consumer surplus (CS) from them

    - Which is the right thing to do!

    - But it is not done for other new goods – e.g. iPhone, Facebook, computers

    - Why? Non-standard approaches to capturing CS from truly new goods

        - For health care, use the monetary value of a year of life gleaned from other contexts and then combine them with data on quality of life
        - For FB—running experiments where offer people $ to give up FB

- But could be included in a GDP-B type account like that proposed by Erik Brynjolfssohn for incorporating CS from Facebook, etc.
    - A satellite account for GDP that uses more experimental methods

Issues to Address in Order to Integrate Health Accounts into GDP Framework

- What is the counterfactual?

- Questions about the $ values used for year of life

- How much of health care is an intermediate good?

- How much of health care is consumption vs investment?

- How do we adjust capital inputs for quality when measuring MFP?

What is the counterfactual?

- When COVID arose, mortality increased. Welfare decline from higher mortality (excl. loss of labor income) not in GDP.
  - Market economy then produces a vaccine.
  - Benefits of lower mortality from vaccine **should** be counted as GDP, so GDP is higher because of the combination of COVID and the vaccine.
  - <u>Counterfactual is the economy with COVID but no vaccine.</u>
  - Same treatment as natural disasters.

- Opioid epidemic fueled by over-prescription of opioids by health sector.
  - Increase in mortality should **decrease** real output from health sector.
  - <u>Counterfactual is an economy where doctors didn't hook people on drugs.</u>

- Will we have the ability to sort these things out? Are there more examples like this?

More Consideration Needed about how to Measure Monetary Value of QALYs

- Use of $ for value of year of life in literature is meant to be illustrative. To actually use a value in official accounts would require more work.

  - The $ value of a life year is typically derived from willingness-to-pay for very small changes in the probability of death. Does this apply to larger discrete changes? (And if not, should the # be higher or lower?)

  - Environmental literature sometimes uses value of year of life that rises with GDP.
    - Should that be adopted in health accounts?
    - Consider differences in WTP for a year of life by income of person affected?

  - Use of $ per <u>year</u> of life as opposed to per life controversial (elderly count less):

    - In 2002, EPA used value of life 37% lower for 65+
    - Led to a public outcry and the abandonment of age adjustments in government cost-benefit analyses. (Viscusi, 2019)

Some health spending is an intermediate not final good

- Part of the value of quantity/quality of life comes from the ability to work.

- The returns to that are already counted in GDP.

- For example: COVID vaccine allowed stores to reopen.

  - Increased economic activity from the reopening is <u>already counted</u> as GDP.

  - The increased GDP should be credited to the health sector, but it shouldn't be counted as final consumption.

  - Lives saved because of vaccine <u>should</u> be counted as final output.

Consumption vs Investment

- Spending that increases life expectancy beyond a year should be an investment in the national accounts.

- Consider creating a Health Capital account, which would measure the stock of health capital acquired through purchased (market) health expenditures. That stock of capital would depreciate over time.

- There would be an imputed flow of income from that stock.

- Counted that way, health spending would have a much larger impact on GDP.

- E.g. Spending on new drug that cures an illness (e.g., Sovaldi for Hep C) would be counted:
  - As investment in the year the spending occurs
  - As consumption over the remaining years of life of people who take it

Calculating MFP

- Improved outcomes from increased spending on health clearly increase well-being and should be included in GDP.

- But if improved productivity derived from improvements in capital—e.g. robotic surgery—price of those inputs should be quality adjusted down and quantity of inputs adjusted up, so no effect on MFP.

- It seems odd to use a welfare perspective to adjust the price of an MRI machine but seems like correct treatment.

Health Spending in Official GDP

- Could current measure be improved in ways less controversial than contemplated for satellite accounts?

  - Treatment of non-profit and government health providers

  - Improving price indexes without going the full CS route

Treatment of Non-Profit and Government Providers in NIPA

- Nonprofit institutions serving households (NPISH) are included in PCE

- PPIs not used to deflate because "non-profit institutions produce services that are not generally sold at market prices."

- So BEA uses <u>costs</u> as deflators—which presume no productivity increases over time
  - => Much faster growth of NPISH health prices

- This is done in a complicated (and super confusing) manner:
  - Real health care services by consumers deflated using PPIs,
  - But then those services cancelled out as sales to other sectors from NPISH, and NPISH total revenues are deflated by costs.

Treatment of Non-Profit and Government Providers in NIPA (cont.)

- Non-profit and government hospitals and nursing facilities very much like businesses.

- Quantitatively important:
  - 88% of hospital revenue from non-profit and government hospitals
  - 48% of total health <u>services</u> (omits RX and other goods)

- Under ACA, Medicare payment updates to providers = cost increases *less* economy-wide MFP.
  - Lowers PPIs and nominal health spending.
  - But for NPISH and government providers, price declines ignored so real GDP will lower.

- BEA should change treatment of non-profit and government owned health providers

How Well do Measured Health Care Prices Account for <u>Cost Increases</u> Associated with Higher Quality?

- Full cost-of-living approach deducts the <u>value</u> of improvements from prices

- A partial step in this direction is to deduct the <u>cost</u> of improvements from prices

- This is standard BLS operating procedure so not controversial:
  - If new car model introduces heated seats, subtract cost of producing them from price

- These quality adjustments not used much in health care prices; but perhaps could be.

Upward Bias for Health Prices from Mismeasured Quality

- Hospitals
  - BLS makes no attempt to quality adjust.
  - Matsumoto (2021) shows that adjusting prices for <u>cost</u> of quality changes lowers hospital PPIs 0.26 ppt per year from 2009-2017.

- Nursing homes
  - PPI *is* adjusted for changes in staffing ratios by using wages of workers.
  - But not other quality changes that could affect costs—like more highly educated workers, better (or worse) compliance with safety guidelines, etc.

- Health insurance:
  - PPI prices the same policy over time (holding policyholder characteristics fixed)
  - Increased quantity/quality of health care measured as higher prices of insurance.
  - CPI uses different method that is at least in theory less likely to overstate costs.