

Efficiency in Health Care: Does Anyone Know What It Is?

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Preview of the Conclusion

- **ANSWER: No**
- **But in the Q&A I Will Entertain Alternative Interpretations (so get ready and submit them)**

More Seriously, Why is this a Problem?

- As we will see, the overarching problem is quality: if you have a type of health care service or delivery where quality is irrelevant, then you can probably can define efficiency in some reasonable way (but how often is that true?)
- Economists tend to draw a titanium wall between efficiency and equity, so another issue (which I will not discuss too much) is that even if we get “efficiency” that does not imply equitable allocation of those services to those who value them most

Definitions of Health Care Efficiency

- Definitions highlighting the central role of quality, with two production process foci for change:
- (1) Maximize health care outputs produced from a fixed set of health care inputs and input quality, holding health care output quality constant
- (2) Minimize health care inputs (related to cost minimization) producing a fixed set of health care outputs where input/output quality also are fixed
- How many people think neither definition, definition (1), definition (2), or both together define Health Care Efficiency? My answer: neither

Poll Question #1

- Which of these define health care efficiency (with fixed factors including quality as above)?
 - Both minimizing inputs and maximizing outputs
 - Minimizing inputs
 - Maximizing outputs
 - None of the above (neither)

What's the Central Problem Here?

- What do we mean by quality and what does it really mean to hold all this quality fixed?
- Institute of Medicine defines quality as multidimensional and characterized by care that is safe, timely, effective, efficient, equitable, and patient-centered
- I like this definition (you may have another one you want to discuss later), but once quality is multidimensional, holding it fixed is a big issue!

Quality as Multidimensional

- Can we even fix quality in any way other than a thought experiment as we actually change other things?
- Is quality an input, an output or more likely both/plural?
 - Depends on the context of the problem
 - Are they separate inputs/outputs or adjusters to other factors?
- What is the data generating process underlying a particular quality measure or measures?
 - Multidimensional quality measures tend to be “uncorrelated”!
- What is fixed in the model or change being considered?
 - We can think of (1) as output oriented (expand outputs for given inputs) and (2) as input oriented (shrink inputs for fixed outputs) and the orientation clearly matters depending on how it relates to quality (inputs or outputs?)

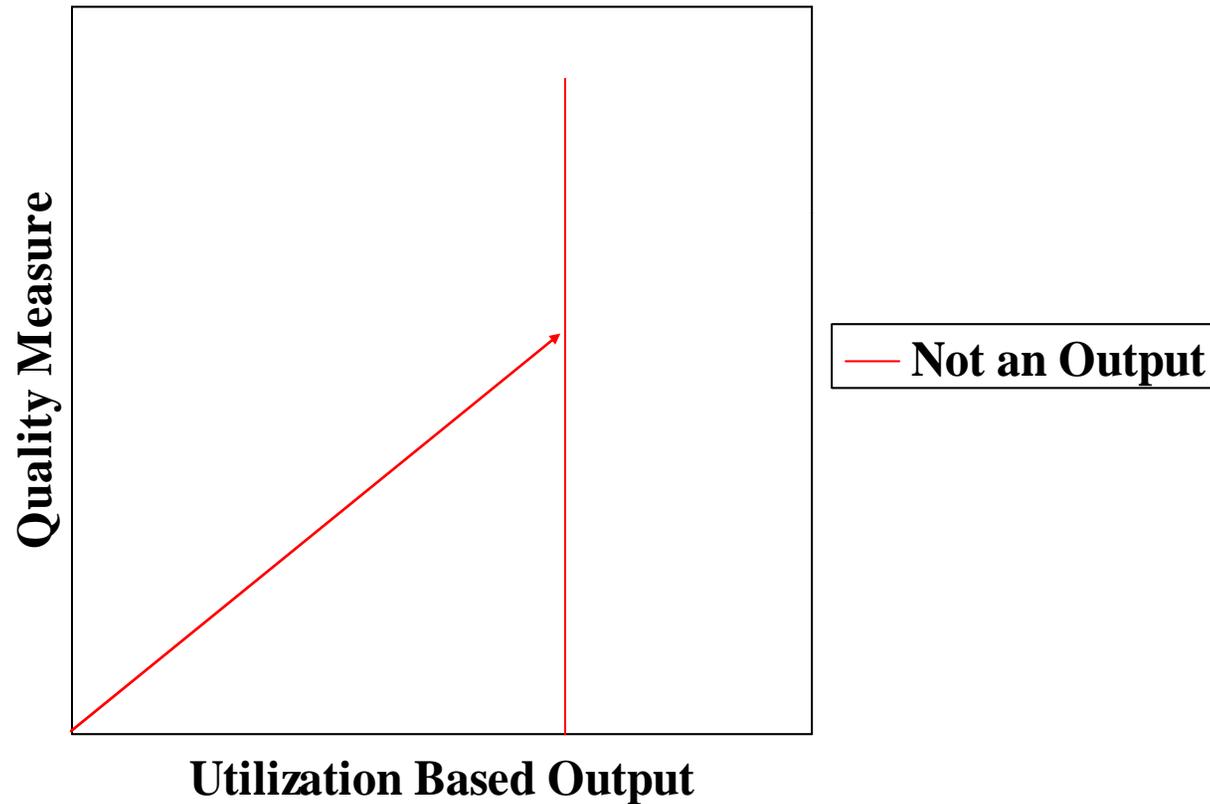
Poll Question #2

- Does it make sense to see quality as fixed in defining health care efficiency?
 - Yes, fixing quality makes sense (inputs & outputs)
 - Yes, but only setting input quality factors as fixed
 - Yes, but only setting output quality factors as fixed
 - Maybe, it depends on the context of the situation
 - No, input and output oriented quality factors always are changing and setting them as fixed does not make sense practically or conceptually

Major Issues in Defining Quality for the Efficiency Question

- Can we discuss this in general if context is so much of the issue? (need to be cautious, but we can, I think)
- Do we consider each quality measure independently or do we/can we define a composite measure of quality?
 - Formative Construct Quality Measures (formed from different dimensions of quality with some type of weights)
 - Reflective Construct Quality Measures (latent manifested from correlated measures)
- Maybe quality is operating along a different dimension orthogonal to the input/output based production process measurement?

Fixed Inputs - Add an Output?



Quality vs. Efficiency: Which One Should be Central to Analysis

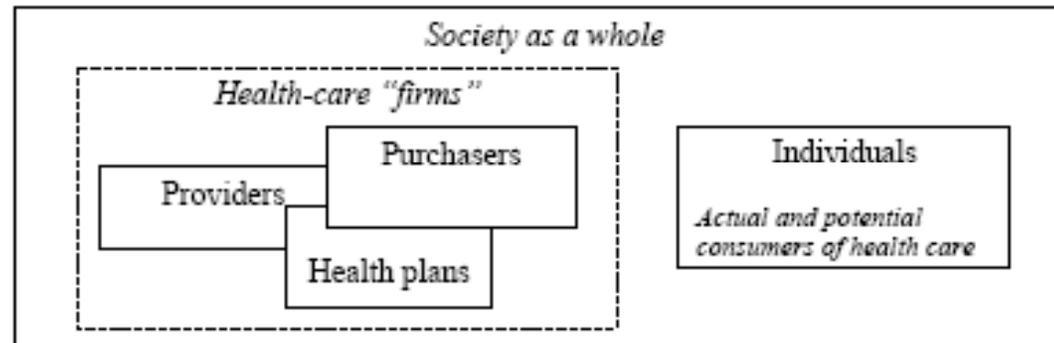
- Maybe we should hold efficiency fixed and focus on increasing quality?
- This idea is inherent in the “value” movement
- But does anyone see the circular reasoning I already have (knowingly) introduced?
- Let us look at three other popular definitions out there promulgated by various organizations and see what else we learn

Definitions of Efficiency Promulgated by Major US Organizations

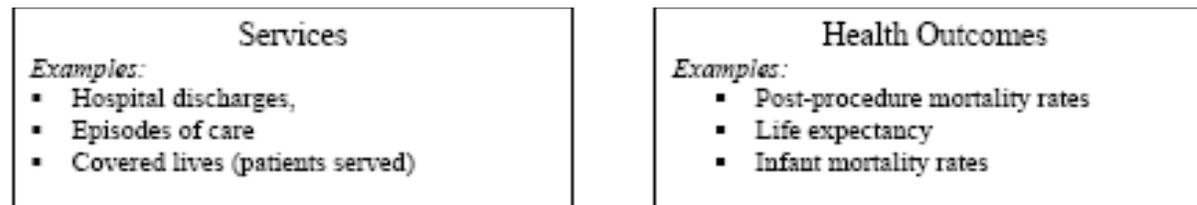
- MedPAC: Using fewer inputs to get the same or better outcomes, efficiency combines concepts of resource use and quality
- NQF: A measurement construct of cost of care or resource utilization associated with a specified level of quality of care
- AQA: A measure of cost of care associated with a specified level of quality of care. “Efficiency of care” is a measure of the relationship of the cost of care associated with a specific level of performance measured with respect to the other five IOM aims of quality ((EFFICIENCY IS QUALITY!))
- RAND and AHRQ:

**Figure 1:
A Typology of Efficiency in Health Care**

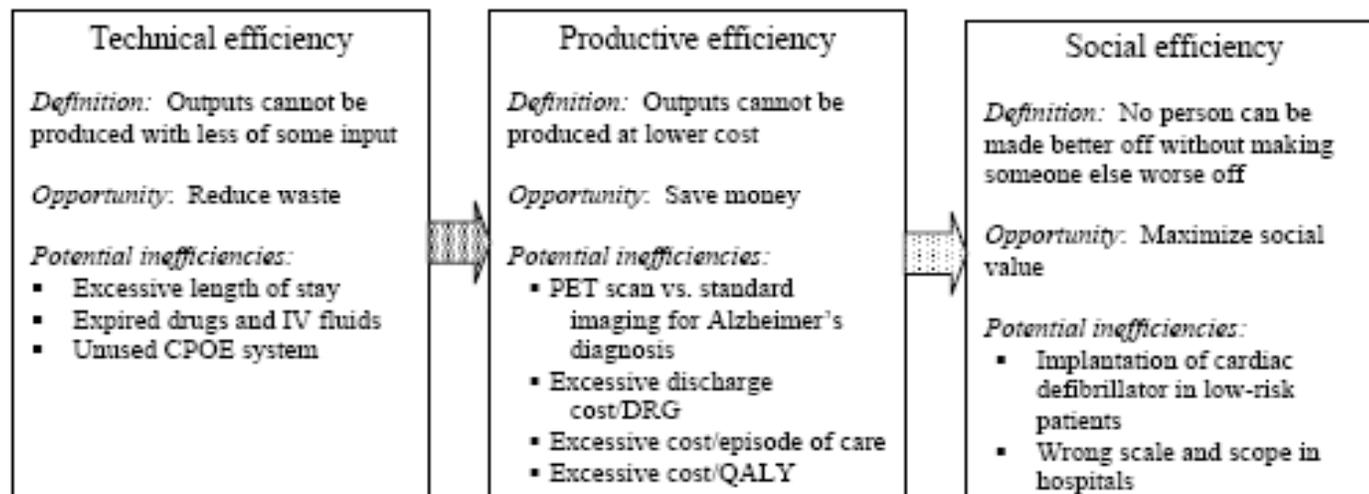
Perspective



Outputs



Type of efficiency



Poll Question #3

- Which of these four definitions solve the “efficiency in health care” definition problem?
 - MedPAC: Fewer inputs and same or BETTER quality
 - NQF: Cost or resource use with specified quality
 - AQA: Relating cost of care to other 5 IOM aims
 - RAND/AHRQ Typology: Way of establishing context
 - Still none of these definitions are successful

Obama's Focus on Waste and Fraud

- In Google the terms “Obama + “health care” + waste” generates 25,800,000 hits this week
- Adding “fraud” drops that to 4,810,000 (mostly because of the number of hits for “Health Care Reform as a waste”)
- Conceptually, we might all agree with the Obama speeches (and perhaps policies) on this question, but is waste and fraud a useful definition of efficiency (inefficiency)?

Poll Question #4

- What is the most important problem you think inhibits the use of eliminating waste and fraud as a working definition of efficiency?
 - We cannot identify waste and fraud accurately
 - Even if we know what waste and fraud are when we see them, it is not useful for framing policy to eliminate it
 - Markets cannot be deployed effectively (market imperfections) to eliminate waste and fraud
 - Waste and fraud are not a large enough component of the true definition of inefficiency
 - Waste and fraud are a good working definition

Palmer and Torgerson (BMJ, 1999)

Approach

Efficiency is concerned with the relation between resource inputs (costs, in the form of labour, capital or equipment) and either intermediate outputs (numbers treated, waiting time, etc) or final health outcomes (lives saved, life years gained, quality adjusted life years (QALYs)) with an ideal focus on final health outcomes

More Details on Palmer and Torgerson

- Their focus is patient centered on economic evaluation of treatments
- Quality is subsumed in the health outcome structure
- “Inefficiency exists when resources could be reallocated in a way which would increase the health outcomes produced” (fix resources in health care and maximize health outcomes)
 - “Technical efficiency addresses the issue of using given resources to maximum advantage”
 - “Productive efficiency of choosing different combinations of resources to achieve the maximum health benefit for a given cost”
 - “Allocative efficiency of achieving the right mixture of healthcare programmes to maximise the health of society”
 - Although productive efficiency implies technical efficiency and allocative efficiency implies productive efficiency, none of the converse implications necessarily hold

Poll Question #5

- How does the Palmer and Torgerson definition stand up as a definition of efficiency in health care?
 - Yes, this is the right way to see it
 - No, I still like one of the previous definitions presented better
 - No, since we cannot actually measure it in this ideal way, we do not actually know what it is, but this is an important definition to move research forward
 - No, I have not seen any adequate definition presented in this talk (I encourage you to post your best definition for the Q/A that follows shortly)

Where are the key research directions to improve this state of affairs?

- Some interesting recent Macro work:
 - UN Development Program Human Development Index (Despotis; Mahlberg and Obersteiner)
 - WHO Health System Indicators (Lauer, Lovell, Murray and Evans; Hollingsworth and Wildman)
- More interesting MICRO work needed!
- Hollingsworth and Street 2006 HE Editorial: Weaknesses of the Demand Side of the Market for Efficiency

Discussion and Conclusions

- Since I plan to work off of the responses to the poll questions (and I do not know what your responses will be), I will make some general comments at this point – not sure what yet
- Understanding the “value equation” and which to focus on, quality or efficiency, is going to be important
- I still assert that the answer is no, no one really knows what efficiency in health care is
- But I hope this talk stimulates further research that makes progress toward better understanding