

The image features a solid red background. In the top left corner, the word "RUTGERS" is written in a white, serif font. Below it, in a smaller, white, sans-serif font, are the words "THE STATE UNIVERSITY OF NEW JERSEY". A large, faint, circular seal of Rutgers University is visible in the background, centered behind the text. The seal contains the text "RUTGERS THE STATE UNIVERSITY OF NEW JERSEY" around its perimeter and a central emblem.

**RUTGERS**

THE STATE UNIVERSITY  
OF NEW JERSEY

**Completing Costs**

**Patients' Time**

## **Two fundamental issues in costing**

- (1) Completeness: Are all important resources included?**
- (2) Valuation: Is each valued appropriately and in a way that is consistent with other resources?**

# Time of patients

**“ ... the fundamental scarce resource in the economy is the availability of human time.”**

Juster, Stafford. The allocation of time: Empirical findings, behavioral models, and problems of measurement. J Econ Lit. June 1991;29:471-522.

## Studies of patient time: Cancer

**January 3, 2007, New York Times:** "... **\$2.3 billion** worth of time is spent in waiting rooms, doctors' offices, hospitals and transportation in the first year after cancer is diagnosed. Patients with gastric and ovarian cancers lost the most time, valued around \$5,300 and \$5,600 per person, compared with costs associated with skin and prostate cancers of \$300 and \$800 each, according to a study in today's issue of The Journal of the National Cancer Institute." Yabroff, Davis, Lamont, Fahey, Topor, Brown, Warren. Patient time costs associated with cancer care. JNCI. 2007;99:14-23.

**Does not include:** preparation time; post-treatment recovery time; time spent on health insurance issues [or scheduling]; time of family members and friends.

**Time is an important component of disease burden.**

## Studies of patient time: Diabetes

**“For experienced patients with type 2** diabetes controlled by oral agents, recommended self-care would require more than **2 extra hours daily**. Elderly patients, and those with newly diagnosed disease or physical limitations, would need more time. Exercise and diet, required for self-care of many chronic conditions, are the most time-consuming tasks.”

Russell, Suh, Safford. Time requirements for diabetes self-management: Too much for many?  
J Family Pract. 2005;54:52-56.

**Self-care guidelines should estimate the time required and subject specific recommendations to trials for incremental effectiveness.**

## Studies of patient time: Smoking cessation

**“Group intensive cessation counseling exhibited the lowest cost per QALY saved, but only 5% of smokers appear willing to undertake this type of intervention.”** Cromwell, Bartosch, Fiore. Cost-effectiveness of the clinical practice recommendations in the AHCPR guideline for smoking cessation. JAMA. 1997;278:1759-1766.

**Ignoring patients' time**, group intensive counseling without nicotine replacement was most cost-effective: **\$1108/QALY** (1995 \$).

**When patients' time was valued**, it rose to **\$3446/QALY**, less cost-effective than full counseling without nicotine replacement at \$1975 for 3 individual physician visits.

## Studies of patient time: Colonoscopy

“Patients spent a median of about **21 hours** in the screening colonoscopy process for preparation, travel, waiting, colonoscopy, and onsite recovery. ... Median time spent at the endoscopy center was **2.8 hours**. ... Median time from the completion of the colonoscopy procedure until returning to routine activities was **17.7 hours**.” Jonas, Russell, Sandler, Chou, Pignone. Patient time requirements for screening colonoscopy. *Am J Gastroenterology*. 2007;102:1-10.

“Time is a potential barrier to screening, but advances in preparation and sedation practices could reduce the time required for patients.”

# Why patient time matters

**Patient time costs vary across interventions: some require substantial time, some very little**

**It's a cost that patients consider, even if third-party payers don't**

**Time spent on health and medical care is drawn from other uses, medical and non-medical – it's a cost to society as well as to the individual**



# Estimating patient time for an intervention

**units of service \***

**patient time per service \***

**value of time (unit cost)**

## **Units of service: Data sources**

**Administrative data: hospitalizations, nursing home care, physician visits**

**Existing surveys**

**Micro-costing**

**Clinical trials**

**What about time for self-care at home, scheduling, etc., a necessary part of the service?**

# Patient time per service: Data sources

**Inpatient services: days in the institution**

**Outpatient services: The American Time Use Survey (BLS)**

- Time reported by patients is very different from face-to-face time with physician (NAMCS)

**Time of family and friends**

<b>American Time Use Survey 2003-2004</b> <small>Russell, Ibuka, Abraham. Med Care. 2007;45:680-685</small>	<b>% reporting</b>	<b>Minutes/day</b>
<b>Personal health-related self care</b>	<b>5.6</b>	<b>86</b>
<b>Activities related to HH children's health</b>	<b>1.0</b>	<b>78</b>
<b>Health care of other HH adults</b>	<b>1.0</b>	<b>90</b>
<b>Activities related to nonHH children's health</b>	<b>0.1</b>	<b>109</b>
<b>Medical care related to nonHH adults</b>	<b>1.1</b>	<b>115</b>
<b>Medical and care services</b>	<b>3.4</b>	<b>123</b>
<b>Public health activities</b>	<b>0.1</b>	<b>140</b>
<b>Total: any health-related activity, total time</b>	<b>11.3</b>	<b>108</b>

# Value of time

**Wage: economic rationale; data available**

**Willingness-to-pay**

**Issues**

- **Fully occupied time vs. partially occupied time**
- **Gross or net of nonmonetary benefits**
- **Is time included in QALY weights – people realize a condition will require, e.g., doctors' visits.**

**The only wrong value: zero**

# References

- Cromwell, Bartosch, Fiore. Cost-effectiveness of the clinical practice recommendations in the AHCPR guideline for smoking cessation. *JAMA*. 1997;278:1759-1766.
- Jonas, Russell, Sandler, Chou, Pignone. Patient time requirements for screening colonoscopy. *Am J Gastroenterology*. 2007;102:1-10.
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