Preliminary Examination: Economics
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Candidacy for the Ph.D. in
Health Services Research, Policy and Administration
Division of Policy and Management
University of Minnesota

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Please answer question 1, and any 2 of the next 3 questions. Each question is weighted equally. You have 5 hours to complete the exam, with a ½ hour break for lunch.

1. Obesity is a worldwide problem, which some attribute to “rising standards of living.” An economic perspective on the obesity problem would ask how rational individuals choose food consumption (F) and hours of weight-reducing physical activity (S) when their wage rate (w) rises. The wage rate is defined as money income per hour worked. Furthermore, the economic point of view uses the concept of a “production function” for weight (W) which depends on F and S. Please derive and attempt to sign an expression for dW/dw. You may assume that individuals derive utility from food (price of $p per unit), weight, and a consumption good (C) with price of $1 per unit.

2. Recent studies have attempted to estimate the rate at which prescription drug utilization may substitute for or prevent other medical expenditures; for example, utilization of cholesterol-reducing statins may prevent cardiac surgery. Findings from some studies suggest that utilization rates for some drugs are below the welfare maximizing level. Answer the following questions about the causes and consequences of the possible under-utilization of prescription pharmaceuticals.

   a. Why might a well-informed insurer in a free market structure a plan such that drug utilization rates were too low?

   b. Why would insured individuals choose drug consumption levels that were below the welfare maximizing level?

   c. If utilization is below the welfare maximizing level, should policy makers intervene to increase utilization?

   d. If so, how should they intervene? Describe two policy mechanisms that would correct this problem. Weigh the costs and benefits of the alternative approaches and relate them to your answers in parts A and B.
3. Current estimates indicate that almost $135 billion dollars are spent annually on long-term care and demand for this type of care is expected to grow rapidly in the coming decades (Congressional Budget Office, 2004). However, only a small fraction of expenditures for long-term care are paid by private insurance. Write an essay that identifies and describes at least two supply-side and two demand-side factors that may contribute to why such a small market exists for long term care insurance in the United States. In your essay, be sure to cite relevant empirical studies.

4. Recent research has indicated that higher nurse to patient staffing ratios in hospitals are associated with fewer in-hospital complications for patients and earlier discharges.

   a. Assume that these findings have just become available to hospital administrators and that nurse-to-patient ratios on hospital wards soon will be included as one measure on hospital comparative “report cards” that are available to consumers. Using standard graphical analysis, indicate (and discuss) what you would expect to happen to the quantity of nurses demanded by hospitals and wages for hospital nurses.

   b. Using standard graphical analysis, indicate (and discuss) the impact on the demand for entry into nursing schools. Over the long run, illustrate how this labor supply response will affect the number and wages of nurses employed by hospitals.

   c. Assume that, in the short run, nursing schools cannot expand their capacity due to limitations in qualified faculty. How does this affect your response to part b. above.

   d. Assume that, in the short run, nursing schools can’t expand their capacity, but foreign trained nurses can be hired by hospitals. Explain (graphs not necessary) how this might affect your answers to questions 1-3 above.