Volume Title: Essays in the Economics of Health and Medical Care

Volume Author/Editor: Victor R. Fuchs, ed.

Volume Publisher: NBER

Volume ISBN: 0-870-14236-4

Volume URL: http://www.nber.org/books/fuch72-1

Publication Date: 1972

Chapter Title: Front matter, Essays in the Economics of Health and Medical Care

Chapter Author: Victor R. Fuchs

Chapter URL: http://www.nber.org/chapters/c3447

Chapter pages in book: (p. i - xxii)

Essays in the Economics of Health and Medical Care

NATIONAL BUREAU OF ECONOMIC RESEARCH

Human Behavior
and Social Institutions 1

Essays in the Economics of Health and Medical Care

Edited by
VICTOR R. FUCHS
The City University of New York

NATIONAL BUREAU OF
ECONOMIC RESEARCH
New York 1972

Distributed by Columbia University Press
New York and London

Library of Congress card number: 70–171573

ISBN: 0–87014–236–4
Printed in the United States of America

To the memory of George James, M.D.,
a pioneer in the application of
social science to the
advancement of health

National Bureau of Economic Research

RELATION OF THE DIRECTORS TO THE WORK AND PUBLICATIONS OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The Board of Directors is charged with the responsibility of ensuring that the work of the National Bureau is carried on in strict conformity with this object.

2. The President of the National Bureau shall submit to the Board of Directors, or to its Executive Committee, for their formal adoption all specific proposals for research to be instituted.

3. No research report shall be published until the President shall have submitted to each member of the Board the manuscript proposed for publication, and such information as will, in his opinion and in the opinion of the author, serve to determine the suitability of the report for publication in accordance with the principles of the National Bureau. Each manuscript shall contain a summary drawing attention to the nature and treatment of the problem studied, the character of the data and their utilization in the report, and the main conclusions reached.

4. For each manuscript so submitted, a special committee of the Board shall be appointed by majority agreement of the President and Vice Presidents (or by the Executive Committee in case of inability to decide on the part of the President and Vice Presidents), consisting of three directors selected as nearly as may be one from each general division of the Board. The names of the special manuscript committee shall be stated to each Director when the manuscript is submitted to him. It shall be the duty of each member of the special manuscript committee to read the manuscript. If each member of the manuscript committee signifies his approval within thirty days of the transmittal of the manuscript, the report may be published. If at the end of that period any member of the manuscript committee withholds his approval, the President shall then notify each member of the Board, requesting approval or disapproval of publication, and thirty days additional shall be granted for this purpose. The manuscript shall then not be published unless at least a majority of the entire Board who shall have voted on the proposal within the time fixed for the receipt of votes shall have approved.

5. No manuscript may be published, though approved by each member of the special manuscript committee, until forty-five days have elapsed from the transmittal of the report in manuscript form. The interval is allowed for the receipt of any memorandum of dissent or reservation, together with a brief statement of his reasons, that any member may wish to express; and such memorandum of dissent or reservation shall be published with the manuscript if he so desires. Publication does not, however, imply that each member of the Board has read the manuscript, or that either members of the Board in general or the special committee have passed on its validity in every detail.

6. Publications of the National Bureau issued for informational purposes concerning the work of the Bureau and its staff, or issued to inform the public of activities of Bureau staff, and volumes issued as a result of various conferences involving the National Bureau shall contain a specific disclaimer noting that such publication has not passed through the normal review procedures required in this resolution. The Executive Committee of the Board is charged with review of all such publications from time to time to ensure that they do not take on the character of formal research reports of the National Bureau, requiring formal Board approval.

7. Unless otherwise determined by the Board or exempted by the terms of paragraph 6, a copy of this resolution shall be printed in each National Bureau publication.

(Resolution adopted October 25, 1926, and revised February 6, 1933, February 24, 1941, and April 20. 1968)

Contents

Tables

Charts

Figures

Acknowledgments

The initial funding for the NBER program of research in the economics of health was provided by the Commonwealth Fund. The encouragement and support of the Fund and its president, Quigg Newton, were particularly valuable, coming as they did at a time when the problems of health economics were not as widely recognized as they are today. The principal support for the program has been provided by the National Center for Health Services Research and Development, Department of Health, Education, and Welfare (grant 2 Pol HS 00451-04).

A multidisciplinary advisory committee, originally under the chairmanship of the late Dr. George James and currently under that of Dr. Kurt Deuschle, has provided valuable guidance. Other members of the committee, past and present, include Gary S. Becker, Morton Bogdonoff, M.D., James Brindle, Norton Brown, M.D., Eveline Burns, Philip E. Enterline, Marion B. Folsom, Eli Ginzberg, William Gorham, Richard Kessler, M.D., the late David Lyall, M.D., Jacob Mincer, Melvin Reder, Peter Rogatz, M.D., James Strickler, M.D., and Gus Tyler. I would also like to record my gratitude to Rufus Rorem, who first exposed me to the problems in this field, and to the NBER directors who reviewed this manuscript—Moses Abramovitz, Joseph Beirne, and Willard Thorp. The latter's comments were particularly helpful.

The program has been served by an able group of research assistants, including Carol Breckner, Bonnie Garrett, Phyllis Goldberg, Eugene Lewit, Robert Linn, Dimitri Mavros, Elizabeth Rand, Deborah Sarachek, and Ira Silver. Secretarial and typing assistance has been provided by Kay Barthelmes, Terry Battipaglia, Maria Perides, Susanne Kaufman, and Lorraine Lusardi. It is also a pleasure to thank Charlotte Boschan and her staff for programing assistance, Elizabeth Rand, Gnomi Gouldin, and Hedy D. Jellinek for editorial assistance, and H. Irving Forman for the charts and figures. In addition to these general acknowledgments, certain specific ones are indicated in individual papers.

Introduction

This book appears at a time of mounting public concern over the state of health and the system of medical care in the United States. Federal, state, and local governments find themselves overwhelmed by the rapid rise in the cost of this important service. Because of financial, racial, and geographical barriers, many Americans either obtain no care or obtain it under conditions that are degrading and inimical to good care; some patients experience shortages of personnel and facilities even when they are willing and able to pay the going price. In many quarters there is increasing awareness that the United States compares unfavorably with many developed countries with respect to such important health indexes as infant mortality and life expectancy; and within the medical profession itself questions are being raised about medical education, research, and practice.

Interest in the economic aspects of health problems is particularly strong. The National Bureau began a program of research in this field a few years ago, anticipating that our work might be relevant to decision makers some day. That day has come sooner than expected. Increasingly, economists are being called upon for advice concerning the determinants of the utilization of medical care, the efficiency with which resources are used in this industry, the value of improvements in health, the appropriateness of medical care prices and wages, and the creation of new devices for financing medical care. As a result, my colleagues and I have had to divide our time between the slow accumulation of reliable measures and analyses, on the one hand, and the discussion of current problems and preliminary conclusions with physicians, government officials, and other groups with strong policy concerns, on the other. This book reflects these diverse demands. The essays it contains (many of which have appeared previously in highly

specialized journals)—along with related NBER studies by Michael Grossman ("The Demand for Health: A Theoretical and Empirical Investigation") and Marcia Kramer and me ("Determinants of Expenditures for Physicians' Services in the United States") to be published shortly—should be viewed as interim reports on a continuing program of research by the National Bureau.

This program has two major objectives. First, we are trying to gain some insights into the factors that determine health levels in the United States. In particular, we are concerned with estimating the relative contributions of medical care and numerous socioeconomic variables, such as income and schooling. From the outset we have found it important to distinguish between health and medical care. This distinction is given its fullest theoretical treatment in Grossman's study, but it is implicit in all our work. Our second principal focus is on the determinants of the cost of medical care and the two components of this cost—utilization and unit price. This concern has led us to consideration of the demand for medical care and the organization of the medical care industry. In addition to our research objectives, we have sought to establish a link between health experts who are unaware of economics and economists who are relatively unfamiliar with a sector that now accounts for over seven per cent of the gross national product.

A brief introduction to each of the essays in this volume is in order. The papers in Part I are intended primarily for physicians and other health specialists. They delineate the concepts, definitions, and methods used by economists in approaching problems of health and medical care. For economists, they may serve as an introduction to some of the institutional peculiarities and policy problems encountered in this sector. The first paper (chapter 1) indicates the relevance of economics to health—namely, that in a world of scarce resources and competing wants choices have to be made, indeed are being made, with regard to the amount and distribution of health services. The economist's role is to help rationalize the decision-making process so that society may best satisfy its objectives with respect to health and other goals. The paper also considers some of the special characteristics of the health industry, such as the high costs of information, the barriers to competition, and the widespread view that services should be related to need rather than ability to pay. It raises, but by no means solves, the problems of how to measure health and how to measure the contribution of health services to health. (These questions receive more systematic attention in the studies by Auster, Leveson, and Sarachek,

by Silver, and by Grossman.) Another theme introduced in the first paper which reappears in several others that follow is the significance of individual behavior in determining health. Decisions concerning diet, smoking, exercise, and the like may have more effect on morbidity and mortality than does the consumption of medical care.

The second paper (chapter 2) sets out the traditional economic concepts of demand and supply, and asks how these concepts might be applied to explain the rapid increase in health care's share of the gross national product (from under 4 per cent in 1929 to 5.5 per cent in 1960 and to 7 per cent in 1970). The most important reason seems to be a rise in the price of health services relative to other prices facing a relatively inelastic demand. Other factors mentioned include the growth of third-party payment, a shift from household to market production of health services (e.g., nursing homes for the aged), the introduction of radically new medical procedures, and the possible need for more medical care to offset adverse changes in the environment and life-style.[1] (Some of these matters receive more systematic attention in K. K. Ro's paper in Part II, p. 69, and in V. Fuchs and M. Kramer, "Determinants of Expenditures for Physicians' Services in the United States," NBER, forthcoming.)

The final essay in Part I (chapter 3) discusses three widely shared objectives for the health care system—increasing effectiveness, efficiency, and equity. An effort is made to clarify these objectives and to indicate some of the obstacles to their realization. Reference is made to the possible surplus of surgeons, a subject now receiving major attention at the National Bureau.[2]

Chapter 4, the first essay in Part II, returns to the question raised in chapter 2—Why have medical care expenditures risen so rapidly in recent decades? The hypothesis that the physician plays a major role in determining the demand for care is introduced.[3] It is also argued that the physician's decisions are heavily influenced by a "technological imperative"—the desire to give all the care technically possible without regard to balancing potential benefit against potential cost. The implication of this behavior for the allocation of resources is discussed.

[1] On this last point see Auster, Leveson, and Sarachek, pp. 153–58 below.

[2] See Hughes, Fuchs, Jacoby, and Lewit, "Surgical Workloads in a Community Practice," *Surgery*, March, 1972, for the fist study in this NBER project.

[3] Some support for this hypothesis is found in Fuchs and Kramer, "Determinants of Expenditures for Physicians' Services in the United States," NBER, forthcoming.

Kong-Kyun Ro's study of hospital utilization (chapter 5), which follows, suggests that utilization is not entirely governed by technological considerations. The author examines the length of stay, number of services received, and size of hospital bill for 9,000 patients discharged from twenty-two short-term general hospitals in the Pittsburgh area. After adjusting for diagnostic category, significant differences in utilization are found, depending upon who pays the major portion of the hospital bill. Patients who pay directly have the shortest stays and the smallest bills. Patients whose bills are paid by government have the longest stays and largest bills. Patients covered by insurance have intermediate utilization. This study also shows significant relationships between hospital characteristics and utilization. The presence of teaching programs in a hospital, for instance, is shown to increase the amount of care provided to patients with given diseases.

An entirely different analysis of variations in health care is provided by Morris Silver in the third paper of Part II (chapter 6). He combines unpublished data from the National Center For Health Statistics with information from the 1/1,000 sample of the 1960 *Census of Population* to explain differences in medical care expenditures and work-loss rates across twenty-four region-age-sex groups. Major attention is given to the estimation of income elasticities, and the results indicate an over-all elasticity (with respect to expenditures) of 1.2, with individual components ranging from 0.85 for physicians' services to over 2.0 for dental expenditures.

Part II concludes with a comparison of the distribution of earnings in health and other industries. As noted earlier (chapter 4), there is a continuum of need for medical care, ranging from very simple supportive services to the most complex diagnostic and therapeutic procedures. One might expect a continuum of health service personnel to meet this need, but the paper by Rand, Garrett, and me (chapter 7) shows that most persons in the health industry earn either less than the industry mean or more than twice the industry mean. In comparison with other industries there is a marked absence of personnel in the middle professional and supervisory range. To our surprise, this gap appears to be equally present in the manpower structure of a large, comprehensive, prepaid group practice plan. We suggest that this may be related to the licensure laws and other legislative or professional restrictions on the deployment of health manpower.

The study by Auster, Leveson, and Sarachek in Part III (chapter 8) is a pioneering attempt to measure the impact of medical care and other variables on health. They use statewide data and measure health

by age-adjusted mortality. Inputs of medical care are measured alternatively by expenditures or by per capita numbers of hospital beds, physicians, and other medical personnel. Alternative models and estimating techniques all yield similar conclusions, namely, that at the margin the reduction in mortality attributable to additional medical care is small. A 1 per cent increase in medical care appears to be associated with a 0.1 per cent decrease in mortality. The partial association between health and schooling is much stronger. When other variables are held constant, income is found to be positively related to mortality.[4]

The authors suggest that this may be related to the consumption habits associated with higher incomes, or reflect the adverse effects on health of earning a higher income. Such a view would help to explain why age-adjusted death rates remained relatively constant in the United States between 1955 and 1965, in spite of a substantial increase in the per capita quantity of medical services and advances in medical science.

The paper by Auster, Leveson, and Sarachek deals only with the U.S. white population. In the final part of this book (chapter 9), Silver examines similar questions, but from a different point of view and with special attention to black-white differentials in mortality. He uses data for standard metropolitan statistical areas as well as states, studies males and females separately, examines the effect of the source of income (labor or nonlabor) on the relationship with mortality, and introduces a large number of other variables intended to measure various environmental and life-style factors that may influence health.

Silver also finds a strong negative relationship between mortality and schooling. With schooling excluded from the regressions, he finds a negative relation between income and mortality, except for white males across states. The decomposition of income into labor and nonlabor components suggests that the unfavorable aspects of a high income for health may be primarily related to what is involved in earning a high income rather than to consumption patterns. Marital status is another variable that shows significant results. The inverse relationship between mortality and the per cent married with spouse present is particularly strong for black males. A substantial portion of the black-white difference in mortality is explained by the variables examined by the author, but a substantial portion remains unexplained.

Silver carefully notes the qualifications that must be attached to his

[4] Grossman, in his "Demand for Health," reports similar findings, using observations on individuals and measuring health by work-loss days and by self-evaluation of health status.

study—and these apply to all of the conclusions presented in this volume as well. The paucity of data is severe. The quality of the limited data available is often poor, and the conceptual problems are considerable. We regard our findings primarily as hypotheses that require further testing and we are currently attempting to do this in a number of related projects.[5]

VICTOR R. FUCHS

[5] Some of the subjects now under study at the National Bureau are hospital behavior (Barry Chiswick); the correlation between health and schooling (Michael Grossman); the utilization of surgical manpower (Edward F. X. Hughes); the demand for abortion (Marcia Kramer); accidents (William Landes); infant mortality (Eugene Lewit); and malpractice (Melvin Reder).

Essays in the Economics of Health and Medical Care