

REGIONAL VARIATION IN THE SCOTTISH HEALTH SERVICE  
1951-1976:  
AN ANALYSIS OF PUBLIC POLICY

Volume II

## IMAGING SERVICES NORTH

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**FOOTNOTES**

## Chapter I:

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The approach to the research project can be outlined simply. Chapter I provides a definition of the problem and indicates that regional equality was one of the objectives which the NHS was designed to attain insofar as the provision of health care was concerned. Chapter II provides an historical review of selected developments in Scottish health care which indicates that the problem of regional disparities has been a persistent and extensive feature. In Chapter III, a model is established to facilitate the development of empirical generalisations and hypotheses. In Chapter IV, the information provided in the two preceding chapters is used to present empirical generalisations and hypotheses regarding regional variation in the NHS in Scotland during the 1951 to 1976 period. Chapter V concerns itself with operational definitions of hypotheses and a discussion of the research methodology which is employed to test the generalisations and hypotheses formulated in the previous chapter. Chapter VI concentrates exclusively on responding to the empirical generalisations. The descriptive statistics allow us to come to some conclusions regarding the existence and extent of variation between Health Board regions in Scotland in terms of facilities, staff and expenditures. Since Chapter VI indicates that regional variation has been, and continues to be a feature of the Scottish Health system from 1951 to 1976, Chapter VII examines the independent variables which have been selected as possible " explanations " of the regional variation. In Chapter VIII, two statistical techniques are applied to the data in order to determine whether or not, the independent variables are individually correlated with the dependent variables. In Chapter IX, multiple correlation techniques are used to examine the relationships between the three groups of independent variables and the dependent variables. The results of the analyses conducted in Chapter VI to IX allow us to present conclusions in Chapter X. These conclusions concern themselves with the two major focii of the research problem; viz., establishing that the SHS has been ineffective in attaining the objective of regional equality in the provision of health care facilities and medical staff and revising our policy model so that it assists in a simpler and more precise fashion, an explanation of this lack of policy effectiveness. The conclusions also provides potential future research direction in this field of study.

In essence, the structure and organisation of the dissertation reflect the two major concerns of the research. On the one hand, the project attempts to determine the effectiveness of the NHS in Scotland in achieving one of the original goals of the NHS - the elimination of regional disparities. On the other hand, it attempts to develop an explanation of why the NHS in Scotland has failed in this regard.

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- 40 Ibid., p. 1334.
- 41 T. Dye, Politics, Economics and.... p. 36.
- 42 D. Nachmias and C. Nachmias, Research Methods in the Social Sciences. Second edition. ( New York: St. Martin's Press, 1981 ), p. 366.
- 43 H. Blalock, Social Statistics., p. 330.
- 44 Ibid., p. 346.
- 45 G. Watson and D. McGaw, Statistical.... p. 350.
- 46 H. Blalock, Social Statistics. p. 350.
- 47 Since the mathematical logic of multiple regression and multiple-partial regression is similar to that of Pearson's  $r$  and partial correlation, there is no need to defend again the small number of cases available in this study. Most texts treat partial correlation in their chapters on multiple regression. See, for example, H. Blalock, Social,... Chapter 19, " Multiple and Partial Correlation ", pp. 325-358., G. Watson and D. McGaw, Statistical.... Chapter 16, " Multivariate Statistical Techniques ", pp. 343-354., D. Nachmias and C. Nachmias, Research Methods.... Chapter 14, " Control, Elaboration and Multivariate Analysis ", pp. 359-388.  
Watson and McGaw specifically suggest the use of regression techniques when the number of cases is small. See G. Watson and D. McGaw, Statistical.... pp. 163-164.
- 48 R. Runyon and A. Haber, Fundamental of Behavioural Statistics, Fourth Edition. ( Don Mills: Addison-Wesley, 1980 ), p. 126.

- 49 H. Blalock, Social Statistics., p. 312.
- 50 R. Runyon and A. Haber, Fundamentals of....., pp.126-127.
- 51 Ibid.
- 52 T. Dye, Politics, Economics and....., pp. 39-40.
- 53 D. Nachmias and C. Nachmias, Research Methods....., pp.469-470.
- 54 J. Galtung, Theory and Methods of Social Research.( New York: Columbia University Press, 1967 ), pp. 358-388.
- 55 The exception to this pattern is the use of linear regression to predict expenditures. This approach is used to determine whether or not the policy process is incrementalist.
- 56 H. Blalock, Causal Inferences in Nonexperimental Research. ( Chapel Hill: University of North Carolina Press, 1964 ), p.51.
- 57 R. Runyon and A. Haber, Fundamentals of....., p. 153.
- 58 H. Blalock, Social Statistics., p. 337.
- 59 This approach is a common one. See T. Dye, Politics, Economics and the Public and I. Sharkansky, Spending in the American States as examples.
- 60 N. Boaden, Urban Policy-Making, uses simple and partial correlation. J. Danziger, " Assessing Incrementalism..." uses multiple regression techniques.
- 61 T. Dye, Politics, Economics and the Public, and I. Sharkansky, Spending in the American States, are two examples where all of the techniques used in the dissertation are used in their research.

#### Chapter VI:

- 1 See Table C-1, Appendix C.
- 2 See Table C-2, Appendix C
- 3 See Table C-3, Appendix C
- 4 See Table C-4, Appendix C
- 5 See Table C-5, Appendix C

- 6 See Table C-6, Appendix C.
- 7 See Table C-7, Appendix C.
- 8 See Table C-8, Appendix C
- 9 See Table C-11, Appendix C.
- 10 See Table C-12, Appendix C.
- 11 See Table C-13, Appendix C.
- 12 See Table C-14, Appendix C
- 13 See Table C-15, Appendix C.
- 14 See Table C-17, Appendix C.
- 15 See Table C-18, Appendix C
- 16 See Table C-19, Appendix C.
- 17 See Table C-20, Appendix C.
- 18 See Table C-21, Appendix C.
- 19 See J. McIntosh and G. Horobin, " General Practice in Remote Areas: Attractions, Expectations and Experiences ", Journal of the Royal College of General Practitioners. Vol. 28, 1978, pp. 227-232.
- 20 See J. McIntosh and G. Horobin, " General Practitioners' Views on General Practice ", mimeo, 1978.
- 21 G. Lind and C. Wiseman, " Setting...."pp. 411-440.

#### Chapter VII:

- 1 See Appendix B
- 2 See Chapter IV, p. 183.
- 3 J. Brotherston, " Inequality...."
- 4 D. Hunter, " Decision and...."
- 5 G. Mooney, " The Programme Budget and the Grampian Health Board ", Hospital Services. Oct. 1977.
- 6 I. Sharkansky, Spending....

- 7 For a more detailed presentation of the data see Appendix D.
- 8 Working Party on Revenue Resource Allocation, Interim Report.
- 9 Ibid.
- 10 Ibid.
- 11 See Appendix E, Table E-1
- 12 See Appendix E, Table E-2
- 13 See Appendix E, Table E-3
- 14 See Appendix E, Table E-5
- 15 See Appendix E, Table E-6
- 16 See Appendix E, Table E-7
- 16 See Appendix E, Table E-8.
- 17 See above, p. 183.
- 18 A. Culyer, Need....
- 19 See the literature referred to in Chapter I, p. 5.
- 20 G. MacIllwaine, Social and....
- 21 V. Carstairs and D. Patterson, "Distribution...."
- 22 Dewar Report
- 23 Cathcart Report.

#### Chapter VIII:

- 1 See H. Blalock, Social Statistics.
- 2 I. Sharkansky, Spending....
- 3 T. Dye, Politics, Economics.... R. Hofferbert, The Study....
- 4 R. Hofferbert, The Study.... R. Dawson and J. Robinson, "Inter-Party...."
- 5 See above, pp. 185-187.

- 6 See above, pp. 187-189
- 7 See above, p. 188.
- 8 *ibid.*
- 9 A. Downs, Inside Bureaucracy. ( Boston:Little,Brown, 1968 ).
- 10 See above, p. 190.
- 11 *Ibid.*
- 12 See above, p. 147.
- 13 See Appendix H.

#### Chapter IX:

- 1 See N. Nie et al., SPSS Manual.

#### Chapter X:

- 1 Royal Commission in the National Health Service, Report. ( London: HMSO, 1979 ), p. 10.
- 2 *Ibid.*
- 3 *Ibid.*
- 4 I. Sharkansky, Spending.... and R. Segsworth, " Models...."
- 5 D. Hunter, " Decisions...."
- 6 D. Ashford, Policy and Politics in Britain. ( Philadelphia: Temple University Press, 1981 ), p. 8.
- 7 *Ibid.*, p. 21.
- 8 *Ibid.*, p. 199.
- 9 H. Hecllo and A. Wildavsky, The Private Government of Public Money. ( Berkeley: University of California Press, 1974 ), p. 335
- 10 *Ibid.*, p. 355.
- 11 B. Smith, Policy-Making...., pp. 129-173.
- 12 *Ibid.*, p. 179.

- 13 H. Heclo and A. Wildavsky, The Private...., p. 238.
- 14 R. Klein, " Policy-Making....", p. 3.
- 15 Ibid.
- 16 Ibid., p. 5.
- 17 cited in C. Lind and C. Wiseman, " Setting Health Priorities....", p. 425.
- 18 C. Wiseman, " Policy-Making for the....", p. 3.
- 19 Ibid., p. 14.
- 20 C. Lind and C. Wiseman, " Setting Health....", p. 425.
- 21 D. Hunter, " Decisions and Resources....", p. 5.
- 22 Ibid., p. 7.
- 23 Ibid., p. 5.
- 24 Ibid., pp. 8-10.
- 25 Ibid., p. 10.
- 26 Ibid., p. 12.
- 27 Ibid., p. 13.
- 28 Ibid.
- 29 Ibid., p. 10.
- 30 B. Smith, Policy-Making in ...., p. 186.
- 31 D. Hunter, " Decisions and Resources...." p. 16.
- 32 R. Klein, " Policy-Making in ...." p. 3.
- 33 D. Hunter, " Decisions and Resources....", pp. 18-19.
- 34 Royal Commission in the National Health Service, Report.
- 35 See Appendix I.
- 36 Notably, N. Boaden, J. Alt, N. Boaden and R. Alford.
- 37 I. Sharkansky, Spending.... and G. Peters, " The Relationship...."
- 38 See above, pp. 128-132.

**APPENDIX A**  
**Variables and Data Sources**



**Population:**

- 1951                    General Registry Office, Census  
1951 Scotland, County Reports.  
( Edinburgh: HMSO, 1952 ).
- 1961                    General Register Office, Census  
1961 Scotland, County Reports.  
( Edinburgh:HMSO, 1964 ).
- 1971                    General Register Office, Census  
1971 Scotland, Local Government  
Region Reports. ( Edinburgh:HMSO,  
1976 ).
- 1976                    Registrar General for Scotland,  
Annual Estimates of the Population  
of Scotland 1976. ( Edinburgh:  
HMSO, 1977 ), Table 1, pp. 4-19.

Population data for 1951, 1961, 1971 and 1976 were collected from the sources listed above. The calculation of the populations of the Health Board region was quite difficult because, in some cases, counties were split and included in two or more Health Board areas. The Registrar-General for Scotland provided accurate statistics for 1976, but not for previous years.

For each Health Board a careful examination of the County Reports was undertaken and those section of a county which were split off were subtracted from the population of one Health Board and added to the appropriate one. For example, in the case of the Forth Valley Health Board, the population of the Burgh of Bo'nness was subtracted from the total population of Lothian Health

Board and added to that of the Forth Valley Health Board.

The population of the fifteen Health Boards were summed and compared with the total population of Scotland for the relevant years as a check for arithmetic errors.

Income:

1951	Commissioners of Inland Revenue, <u>95th Report</u> . ( London:HMSO,1952). Tables 147-179, pp. 126-158.
1961	Commissioners of Inland Revenue, <u>Report of the Commissioners of Her Majesty's Inland Revenue for the Year Ended 31st March, 1963</u> . ( London: HMSO, 1964 ), Table 76, pp. 86-87.
1971	Unpublished data supplied by the Statistics Division, Inland Revenue.
1976	Unpublished data supplied by the Statistics Division, Inland Revenue.

Data regarding personal or family income was extremely difficult to obtain initially. Fortunately, a second letter to Inland Revenue resulted in both data and advice from the Statistics Division.

The income information available presented three basic problems. It was not for the years 1951, 1961 and 1976. The data was presented in terms of the number of people included in the incomes' survey and the total net income by county. Finally, the surveys excluded certain types of income.

There was very little which could be done about the first problem. Data for 1951 was for the 1949-1950 taxation year. For 1961 the taxation year was 1959-1960 and for 1976, the most recent information available was for the 1975-1976 tax year.

Although data was provided for the 1971-1972 taxation year, I decided to use the 1969-1970 information for two reasons. First, a consistent ten year time interval was maintained. Second, the sample from which the data was drawn was considerably larger for 1969-1970 than for 1971-1972. One could be more confident of the accuracy of the former data set.

The income calculations for Health Board regions were quite complex. An adjusted percentage approach was used. The percentage of a county's population which was split between two or more Health Boards was calculated. This figure was applied to the population size of the incomes survey and the total net income for the counties concerned. The resulting amounts were subtracted from and added to the totals of the relevant Health Boards. Once this had been done the adjusted total net income was divided by the adjusted population total to produce a per capita income figure. For example, in 1971, the District and Burgh of Bo'ness constituted 12.3% of the total population of West Lothian. This percentage of the West Lothian total net income and sample size was transferred to the total for the Forth Valley Health Board

region and was included in the calculation of the average per capita income of this area.

Insofar as the third problem with incomes data was concerned, there was nothing which I could do to improve the quality of the information. In general, the material supplied ignored individuals with low incomes. For example, those people with incomes below the level of the PAYE System were not included. Incomes not subject to tax such as some National Insurance benefits were excluded. The clear effect of these omissions was to inflate the per capita income figures produced by the calculation described above beyond what might be an accurate assessment.

The three weaknesses of the incomes data raised major doubts in my mind about the validity of using it. In the previous empirical studies, income had consistently been the most important explanatory variable of policy outputs. Clearly the data available to me was not as good as that used by the American scholars who applied an approach to the study of public policy similar to the one which I wished to employ.

There were three factors which convinced me to use the incomes data provided. In the first place, it was the only data available for the purposes of the study. Secondly, I was reassured by an Inland Revenue official who stated that the surveys "do contain most incomes and I am unaware of any better sources of county

incomes data " <sup>2</sup> . Finally, the model developed in this project does not concern itself with the absolute value of per capita income. Rather, it is concerned with the relative income levels of the residents of Health Board regions and it attempts to determine the nature of the relationship between income levels and policy outputs and outcomes.

#### Industrialisation:

- 1951                    General Registry Office, Census 1951 Scotland; Vol. IV, Occupations and Industries. ( Edinburgh:HMSO, 1952 ).
- 1961                    General Register Office, Census 1961 Scotland. Occupation and Industry County Tables, Leaflets 14-25. ( Edinburgh:HMSO, 1966 ).
- 1971                    General Register Office, Census 1971 Scotland, Economic Activity County Tables, Parts I-IV, ( Edinburgh: HMSO, 1975 ).
- 1976                    Department of Agriculture and Fisheries for Scotland, Agricultural Statistics 1976 Scotland. ( Edinburgh: HMSO, 1977 ), pp.62-67.
- The Scottish Office, Scottish Abstract of Statistics, Vol. 7. ( Edinburgh: HMSO, 1977 ), Table 88, pp. 87-88.

The available data regarding this variable created two problems. It was available by county and for this reason the adjusted percentage alterations which had been used to treat income for Health Board

regions were also applied to the industrialisation data. The second problem was the lack of census data for 1976. This forced the use of the analysis of the Scottish labour force provided in the Scottish Abstract of Statistics. That information was supplemented by statistics regarding the number of agricultural workers published in Agricultural Statistics 1976, Scotland.

As a check on the results the industrialisation figures for 1976 were compared with the trends which had appeared during the 1951-1971 period.

#### Urbanisation:

- |      |   |
|------|---|
| 1951 | General Registry Office, <u>Census 1951, Scotland, County Reports</u> . ( Edinburgh: HMSO, 1952 ).                                    |
| 1961 | General Register Office, <u>Census 1961, Scotland, County Reports</u> . ( Edinburgh: HMSO, 1964 ).                                    |
| 1971 | General Register Office, <u>Census 1971, Scotland, Local Government Region Reports</u> . ( Edinburgh: HMSO, 1976 ).                   |
|      | General Register Office, <u>Census 1971, Scotland, County Reports</u> . ( Edinburgh: HMSO, 1974 ).                                    |
| 1976 | Registrar General for Scotland, <u>Annual Estimates of the Population of Scotland</u> . ( Edinburgh: HMSO, 1977 ), Table 1, pp. 4-19. |

Urbanisation was one of the easiest of the environmental input factors to calculate. The 1976 Report of the Registrar General provided the area of

the Health Boards in hectares. These area totals were divided by the population totals of the Health Boards and the quotient obtained was multiplied by 100 to provide our measure of population density.

Obviously other measures of urbanisation could have been adopted. One of the most common ones is the percentage of the population living in urban areas. I was conscious of the need to restrict the number of independent variables and for this reason I selected the operational definition most frequently used in studies of this type.

**Region:**

1951

1961

Mr. D. Wynn, Department of  
Sociology, University of  
Stirling.

1971

1976

The determination of the regional classifications of Highlands and Lowlands was arrived at on the basis of an examination of a few major studies of Scottish history as well as an awareness of the distinctive treatment of one part of Scotland which resulted from the Highlands and Islands Medical Scheme. The inclusion of Health Boards in one of these two areas was based, finally, upon a discussion with Mr. Wynn, a lecturer in the Sociology Department at the University of Stirling. The

fifteen Health Boards were categorised as follows:

Highlands	Lowlands
Argyll and Clyde Health Board	Ayrshire and Arran Health Board
Grampian Health Board	Borders Health Board
Highland Health Board	Dumfries and Galloway Health Board
Orkney Health Board	Fife Health Board
Shetland Health Board	Forth Valley Health Board
Western Isles Health Board	Greater Glasgow Health Board
	Lanark Health Board
	Lothian Health Board
	Tayside Health Board

Standardised Mortality Rates:

1951	Registrar General for Scotland, <u>Ninety-Seventh Annual Report 1951.</u> ( Edinburgh: HMSO, 1953 ).
1961	Registrar General for Scotland, <u>One Hundred and Seventh Annual Report for 1961.</u> ( Edinburgh: HMSO, 1963 ).
1971	Registrar General for Scotland, <u>Annual Report 1971, Part 1, Mortality Statistics.</u> ( Edinburgh: HMSO, 1972 ).
1976	Registrar General for Scotland, <u>Annual Report, Part 1, Mortality Statistics.</u> ( Edinburgh: HMSO, 1977 ).

The 1976 Report provided standardised mortality rates by Health Board region. The 1951, 1961 and 1971 Reports provided this information by county. As a result the adjusted percentage approach was applied to provide standardised mortality rates by Health Board region for those years.



## Crude Death Rates:

- 1951 Registrar General for Scotland, Ninety-Seventh Annual Report 1951. ( Edinburgh: HMSO, 1953 ).
- 1961 Registrar General for Scotland, One Hundred and Seventh Annual Report for 1961. ( Edinburgh: HMSO, 1963 ).
- 1971 Registrar General for Scotland, Annual Report 1971, Part 1, Mortality Statistics. ( Edinburgh: HMSO, 1972 ).
- 1976 Registrar General for Scotland, Annual Report, Part 1, Mortality Statistics. ( Edinburgh:HMSO, 1977 ).

The data used to determine crude death rates and the problems with it took exactly the same form as those involving standardised mortality rates. The same procedures were applied to provide crude death rates by Health Board region.

## Infant Mortality Rates:

- 1951 Registrar General for Scotland, Ninety-Seventh Annual Report, 1951. ( Edinburgh: HMSO, 1952 ).
- 1961 Registrar General for Scotland, One Hundred and Seventh Annual Report for 1961. ( Edinburgh: HMSO, 1963 ).
- 1971 Registrar General for Scotland, Annual Report 1971, Part 1, Mortality Statistics. ( Edinburgh: HMSO, 1972 ).
- 1976 Registrar General for Scotland, Annual Report 1976, Part 1, Mortality Statistics. ( Edinburgh:HMSO,1977 ).

The data used to determine infant mortality rates and the problems with it took exactly the same form as those for standardised mortality rates. The same procedures were applied to provide infant mortality rates by Health Board region.

Number of Teaching Hospitals:

- |      |  |
|------|--|
| 1951 | Department of Health for Scotland, <u>Hospital Costing Returns, Year Ended 31st March, 1952.</u> ( Edinburgh: HMSO, 1953 ).                      |
| 1961 | Scottish Home and Health Department, <u>Analysis of the Running Costs of Hospitals, Year Ended 31st March, 1962.</u> ( Edinburgh: HMSO, 1962 ).  |
| 1971 | Scottish Regional Hospital Boards, <u>Scottish Hospital Costs, Year Ended 31 March, 1972.</u> ( Dundee: Eastern Regional Hospital Board, 1972 ). |
| 1976 | Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31 March, 1977.</u> ( Edinburgh: HMSO, 1978 ).                 |

This variables was a relatively straightforward one to deal with. The teaching hospitals were classified as such in the Scottish Health Service Costs. These were combined as appropriate to obtain totals for the Health Boards for 1976. For the period 1951-1971, the various cost analyses classified teaching hospitals by Regional Hospital Board. In cases where it was not clear in which Health Board a teaching hospital was located,

two checks were instituted. First, the 1976 classification was compared with previous classification. If this failed, the precise location of the hospital was determined with the use of a Scottish Gazeteer and the hospital was included in the total for the appropriate Health Board.

**Number of Employees:**

1976                      Scottish Health Service, Scottish Health Statistics 1976. ( Edinburgh: HMSO, 1977 ).

The 1976 data was available in a form which readily allowed for the calculation of the total number of staff by Health Board region. Unfortunately, this was not the case for the previous periods and although efforts were made to arrive at totals by aggregating information on specific groups of staff, there was insufficient information regarding such groups as community health staff to allow such a procedure to function successfully.

**Total Costs:**

1951  
1961                      Unpublished data made available by the Finance Division of the Scottish Office.

1971

1976                      Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March, 1977. ( Edinburgh: HMSO, 1978 ).

For 1976 the data was available in terms of Health Board regions, but for 1951-1971, it was presented only in terms of Executive Council, Hospital Board and Local Authority regions. The calculation used to overcome this difficulty was precisely the same type as that used to determine per capita income levels for Health Board regions.

**Hospital Costs:**

- |      |  |
|------|--|
| 1951 | Department of Health for Scotland, <u>Hospital Costing Returns, Year Ended 31st March, 1952.</u> ( Edinburgh: HMSO, 1953 ).                      |
| 1961 | Scottish Home and Health Department, <u>Analysis of the Running Costs of Hospitals, Year Ended 31 March, 1962.</u> ( Edinburgh: HMSO, 1962 ).    |
| 1971 | Scottish Regional Hospital Boards, <u>Scottish Hospital Costs, Year Ended 31 March, 1972.</u> ( Dundee: Eastern Regional Hospital Board, 1972 ). |
| 1976 | Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31st March, 1977.</u> (Edinburgh: HMSO, 1978 ).                |

For 1976 the hospital costs were available on a Health Board basis. The 1951-1971 figures were available on a Regional Hospital Board basis. The percentage adjustment was used to translate these figures into hospital costs by Health Board region.

The sources of the hospital costs also provided

data on the running costs of each hospital. By using such information it was possible to check the accuracy of the totals arrived at by the previous method and to correct any errors.

**Psychiatric Beds' Costs:**

- 1951 Department of Health for Scotland, Hospital Costing Returns, Year Ended 31st March, 1952. ( Edinburgh: HMSO, 1953 ).
- 1961 Scottish Home and Health Department, Analysis of the Running Costs of Hospitals, Year Ended 31 March, 1962. ( Edinburgh: HMSO, 1962 ).
- 1971 Scottish Regional Hospital Boards, Scottish Hospital Costs, Year Ended 31 March 1972. ( Dundee: Eastern Regional Hospital Board, 1972 ).
- 1976 Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March, 1977. ( Edinburgh: HMSO, 1978 ).

Insofar as mental illness and mental deficiency hospitals were concerned, the treatment of psychiatric beds' costs was exactly the same as that for total hospital costs. There were, however, a number of psychiatric beds provided in teaching and other hospitals. In these cases the departmental costing figures were used to calculate the expenditures on psychiatric beds for each hospital concerned. These individual figures were added to the totals which had been arrived at by the calculations for mental illness and mental deficiency

institutions.

**Chronic Beds' Costs:**

- 1951 Department of Health for Scotland, Hospital Costing Returns, Year Ended 31st March 1952. ( Edinburgh: HMSO, 1953 ).
- 1961 Scottish Home and Health Department, Analysis of the Running Costs of Hospitals, Year Ended 31 March, 1962. ( Edinburgh:HMSO, 1962 ).
- 1971 Scottish Regional Hospital Boards, Scottish Hospital Costs, Year Ended 31 March, 1972. ( Dundee: Eastern Regional Hospital Board, 1972 ).
- 1976 Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March, 1977. ( Edinburgh: HMSO, 1978 ).

The data used to determine chronic beds' costs and the problems with it took exactly the same form as those for psychiatric beds' costs. The same procedures were applied to provide chronic beds' costs by Health Board region.

**General Beds' Costs:**

- 1951 Department of Health for Scotland, Hospital Costing Returns, Year Ended 31st March, 1952. ( Edinburgh: HMSO, 1953 ).
- 1961 Scottish Home and Health Department, Analysis of the Running Costs of Hospitals, Year Ended 31st March, 1962. ( Edinburgh: HMSO, 1962 ).

- 1971                    Scottish Regional Hospital Boards, Scottish Hospital Costs, Year Ended 31 March, 1972. ( Dundee: Eastern Regional Hospital Board, 1972 ).
- 1976                    Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March, 1977. ( Edinburgh: HMSO, 1978 ).

The data used to determine the general beds' costs and the problems with it took exactly the same form as those for psychiatric and chronic beds' costs. The same procedures were applied to provide general beds' costs by Health Board region.

#### General Practitioner Costs:

- 1951                    Unpublished data made available by the Finance Division of the Scottish Office.
- 1961
- 1971
- 1976                    Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March, 1977. ( Edinburgh: HMSO, 1978 ).

For 1976 the data was presented by Health Board region. For 1951-1971 the data classified expenditures by Executive Council area. As a result the same type of percentage adjustment was used to obtain information regarding costs by Health Board region.

As a check on these figures the average costs per general medical practitioner was calculated. This cost

was multiplied by the number of general medical practitioners for each Health Board region and the totals were compared with the totals produced by the initial procedure.

#### Dental Costs:

1951	
1961	Unpublished information supplied by the Finance Division of the Scottish Office.
1971	
1976	Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31st March, 1977.</u> ( Edinburgh: HMSO, 1978 ).

The data used to calculate dental costs and the problems with it were identical to those for general practitioner costs. The same procedures and checks were applied to provide dental costs by Health Board region.

#### Pharmaceutical Costs:

1951	
1961	Unpublished information provided by the Finance Division of the Scottish Office
1971	
1976	Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31st March, 1977.</u> ( Edinburgh: HMSO, 1978 ).

The data used to determine pharmaceutical costs and the problems with it were identical to those for general practitioners and dental costs. The same procedures



and checks were used to provide pharmaceutical costs by Health Board region.

**Optician's Costs:**

1951	Unpublished information provided by the Finance Division of the Scottish Office.
1961	
1971	
1976	Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31st March, 1977.</u> ( Edinburgh: HMSO, 1978 ).

The data used to determine opticians' costs and the problems with it were identical to those for general practitioner costs. The same procedures and checks were used to provide opticians' costs by Health Board region.

**Community Health Costs:**

1976	Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31st March, 1977.</u> ( Edinburgh: HMSO, 1978 ).
------	--

The 1976 data was available in a form which readily allowed for the calculation of community health costs by Health Board region. Unfortunately, this was not the case for the previous periods and although efforts were made to aggregate information from local authority accounts, this proved to be unreliable and unworkable. Consequently, only 1976 statistics are available.

**Total Beds:**

1951	Department of Health for Scotland, <u>Hospital Costing Returns, Year Ended 31st March, 1952.</u> ( Edinburgh: HMSO, 1953 ).
1961	Scottish Home and Health Department, <u>Analysis of the Running Costs of Hospitals, Year Ended 31 March, 1962.</u> ( Edinburgh: HMSO, 1962 ).
1971	Scottish Regional Hospital Boards, <u>Scottish Hospital Costs, Year Ended 31 March, 1972.</u> ( Dundee: Eastern Regional Hospital Board, 1972 ).
1976	Scottish Home and Health Department, <u>Scottish Health Service Costs, Year Ended 31st March 1977.</u> ( Edinburgh: HMSO, 1978 ).

For 1976 the hospital beds totals were available by Health Board region. The 1951-1971 statistics were available by Regional Hospital Board region. The percentage adjustment was made to translate these statistics into the total number of hospital beds by Health Board region for 1951-1971.

The sources of information regarding the number of hospital beds also presented statistics about the average number of staffed, available beds for each hospital. By using these statistics, it was possible to check the accuracy of the total arrived at by the previous method and to correct any errors.

**Psychiatric beds:**

- 1951 Department of Health for Scotland,  
Hospital Costing Returns, Year  
Ended 31st March, 1952. ( Edinburgh:  
HMSO, 1953 ).
- 1961 Scottish Home and Health Department,  
Analysis of the Running Costs of  
Hospitals, Year Ended 31st March,  
1962. ( Edinburgh: HMSO, 1962 ).
- 1971 Scottish Regional Hospital Boards,  
Scottish Hospital Costs, Year  
Ended 31 March 1972. ( Dundee:  
Eastern Regional Hospital Board,  
1972 ).
- 1976 Scottish Home and Health Department,  
Scottish Health Service Costs,  
Year Ended 31st March, 1977.  
( Edinburgh: HMSO, 1978 ).

Insofar as mental illness and mental deficiency hospitals were concerned, the treatment of the number of psychiatric beds was exactly the same as that for total hospital beds. There were, however, a number of psychiatric beds provided in teaching and other hospitals. In these cases, the departmental costing tables were used to calculate the number of psychiatric beds available in each hospital. These individual figures were added to the total which had been arrived at by the calculations for mental illness and mental deficiency institutions.

#### Chronic Beds:

- 1951 Department of Health for Scotland,  
Hospital Costing Returns, Year  
Ended 31st March, 1952. ( Edinburgh:  
HMSO, 1953 ).

- 1961                    Scottish Home and Health Department, Analysis of the Running Costs of Hospitals, Year Ended 31st March, 1962. ( Edinburgh: HMSO, 1963 ).
- 1971                    Scottish Regional Hospital Boards, Scottish Hospital Costs, Year Ended 31st March 1972. ( Dundee: Eastern Regional Hospital Board, 1972 ).
- 1976                    Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March 1977. ( Edinburgh: HMSO, 1978 ).

Insofar as chronic care hospitals were concerned, the treatment of the number of chronic beds was exactly the same as that for total hospital beds. There were, however, a number of chronic beds in teaching and other hospitals. In these cases the departmental costing tables were used to determine the number of chronic beds available in each hospital. These individual figures were then added to the total which had been arrived at by the calculations for chronic care institutions.

#### General Beds:

- 1951                    Department of Health for Scotland, Hospital Costing Returns, Year Ended 31st March, 1952. ( Edinburgh: HMSO, 1953 ).
- 1961                    Scottish Home and Health Department, Analysis of the Running Costs of Hospitals, Year Ended 31st March, 1962. ( Edinburgh: HMSO, 1962 ).
- 1971                    Scottish Regional Hospital Boards, Scottish Hospital Costs, Year Ended 31 March, 1972. ( Dundee:

Eastern Regional Hospital Board,  
1972 ).

1976 Scottish Home and Health Department,  
Scottish Health Service Costs,  
Year Ended 31st March 1977.  
( Edinburgh: HMSO, 1978 ).

The nature of the data regarding general beds and the problems with it took exactly the same form as those for chronic beds. The same procedures were applied to provide the number of general beds by Health Board region.

**Hospital Doctors:**

1951 Department of Health for Scotland,  
Hospital Costing Returns, Year  
Ended 31st March, 1952. ( Edinburgh:  
HMSO, 1953 ).

1961 Scottish Home and Health Department,  
Analysis of the Running Costs of  
Hospitals, Year Ended 31st March, 1962.  
( Edinburgh: HMSO, 1963 ).

1971 Scottish Regional Hospital Boards,  
Scottish Hospital Costs, Year  
Ended 31st March 1972. ( Dundee:  
Eastern Regional Hospital Board,  
1972 ).

1976 Scottish Home and Health Department,  
Scottish Health Service Costs, Year  
Ended 31st March 1977. ( Edinburgh:  
HMSO, 1978 ).

The data includes all doctors of all grades expressed as whole-time equivalents who worked in Scottish hospitals. The 1951-1971 data is classified by Hospital Board region. The 1976 data is categorised according to

Health Board region. The necessary adjustments were carried out to provide the required total number of hospital doctors by Health Board region.

The sources also provide data regarding the number of hospital doctors for each hospital. By using this data it is possible to check the accuracy of the totals arrived at by the previous method and to correct any errors.

#### Hospital Nurses:

- 1951 Department of Health for Scotland, Hospital Costing Returns, Year Ended 31st March, 1952. ( Edinburgh: HMSO, 1953 ).
- 1961 Scottish Home and Health Department, Analysis of the Running Costs of Hospitals, Year Ended 31st March, 1962. ( Edinburgh: HMSO, 1962 ).
- 1971 Scottish Regional Hospital Boards, Scottish Hospital Costs, Year Ended 31st March 1972. ( Dundee: Eastern Regional Hospital Board, 1972 ).
- 1976 Scottish Home and Health Department, Scottish Health Service Costs, Year Ended 31st March, 1977. ( Edinburgh: HMSO, 1978 ).

The nature of the data regarding the number of hospital nurses and the problems with it took exactly the same form as the data regarding the number of hospital doctors. The same procedures were applied to determine the number of hospital nurses by Health Board

region. The same check as for the number of hospital doctors was also applied and used to correct any errors in the totals.

**General Practitioners:**

1971 Unpublished information supplied by the Finance Division of the Scottish Office.

1976 Scottish Home and Health Department, Scottish Health Statistics, 1976. ( Edinburgh: HMSO, 1977 ).

The unpublished data provided information regarding the number of general practitioners under contract with the National Health Service by Executive Council area. The 1976 statistics provided information regarding the number of general practitioners by Health Board region. It was necessary to use the percentage adjustment in the case of the 1971 statistics to provide the number of general practitioners involved in the provision of Scottish Health Services by Health Board regions.

In cases such as Dunbarton, where the adjustment may have caused errors, a careful examination of the Medical Directory was undertaken to ensure that general practitioners were included in the correct area.

**Dentists:**

1971 General Dental Council, The Dentists' Register, 1971. ( London: General Dental Council, 1971 ).

1976                      Scottish Home and Health Department,  
Scottish Health Statistics, 1976.  
 ( Edinburgh: HMSO, 1977 ).

The 1976 data provided information regarding the number of dental practitioners in contract with the Scottish Health Service by Health Board region. By using the Dentists' Register for 1971, it was possible to pinpoint more precisely the practice areas of dental practitioners in Scotland. These individual areas were organised to co-incide with Health Board regions and then summed. The figures for each region were combined and compared with the total number of dental practitioners in Scotland in 1971 to ensure reasonable accuracy.

Pharmaceutical Chemists' Outlets:

1951                      Pharmaceutical Society of Great  
 Britain, Register of Pharmaceutical  
Chemists 1951. ( London: Pharmaceutical  
 Society of Great Britain, 1951 ).

1961                      Pharmaceutical Society of Great  
 Britain, Register of Pharmaceutical  
Chemists 1961. ( London: Pharmaceutical  
 Society of Great Britain, 1961 ).

1971                      Unpublished information supplied  
 by the Information Services Division  
 Common Services Agency, Scottish  
 Health Service.

1976                      Scottish Home and Health Department,  
Scottish Health Statistics, 1976.  
 ( Edinburgh: HMSO, 1977 ).

The information available for 1951, 1961, 1971  
 and 1976 provided data regarding the number of pharmaceutical



outlets in contract with the National Health Service in Scotland. The 1951 and 1961 statistics were treated in the same fashion as the 1971 dental practitioner data in order to determine the number of pharmaceutical outlets by Health Board region. The 1971 data was handled in the same manner as the 1971 general practitioner data. The 1976 statistics were organised on the basis of Health Board regions. The totals for each region were combined and compared with the national totals for the appropriate years to provide a check upon the accuracy of the results obtained.

Opticians:

- |      |   |
|------|---|
| 1961 | General Optical Council, <u>Optician's Register 1961</u> . ( London: General Optical Council, 1961 ).                   |
| 1971 | Unpublished information provided by the Information Services Division, Common Services Agency, Scottish Health Service. |
| 1976 | Scottish Home and Health Department, <u>Scottish Health Statistics 1976</u> . ( Edinburgh: HMSO, 1977 ).                |

The data regarding the number of opticians in contract with the National Health Service in Scotland took the same form and presented the same types of problems as the pharmaceutical chemists statistics. The same types of procedures and checks were applied to produce totals for the number of opticians for each

Health Board region for 1961, 1971 and 1976.

Community Health Staff:

1976                                      Scottish Home and Health Department,  
Scottish Health Statistics, 1976.  
( Edinburgh: HMSO, 1977 ).

Unfortunately, the only reasonably reliable information regarding the number of community health staff by Health Board region was available for 1976. No information could be found which would allow for the construction of equivalent statistics for the previous years.

**APPENDIX B**

**Summary of Empirical Generalisations  
and Hypotheses**

### Empirical Generalisations:

1. There is considerable variation in the number of total hospital beds per 10,000 population between the Health Board regions in Scotland.
2. There is considerable variation in the number of psychiatric beds per 10,000 population between the Health Board regions in Scotland.
3. There is considerable variation in the number of chronic beds per 10,000 population between the Health Board regions in Scotland.
4. There is considerable variation in the number of general beds per 10,000 population between the Health Board regions in Scotland.
5. There is considerable variation in the provision of hospital doctors per 10,000 population between the Health Board regions in Scotland.
6. There is considerable variation in the provision of hospital nurses per 10,000 population between the Health Board regions in Scotland.
7. There is considerable variation in the provision of general practitioners per 10,000 population between the Health Board regions in Scotland.
8. There is considerable variation in the provision of dentists per 10,000 population between the Health Board regions in Scotland.
9. There is considerable variation in the provision of pharmacists' outlets per 10,000 population between the

Health Board regions in Scotland.

10. There is considerable variation in the provision of opticians per 10,000 population between the Health Board regions in Scotland.

11. There is considerable variation in the provision of community health staff per 10,000 population between the Health Board regions in Scotland.

12. There is considerable variation in the total expenditures of Health Board regions per 1,000 population in Scotland.

13. There is considerable variation in the hospital expenditures of Health Board regions per 1,000 population in Scotland.

14. There is considerable variation in the psychiatric beds' expenditures of Health Board regions per 1,000 population in Scotland.

15. There is variation in the chronic beds' expenditures of Health Board regions per 1,000 population in Scotland.

16. There is considerable variation in the general beds' expenditures of Health Board regions per 1,000 population in Scotland.

17. There is considerable variation in general practitioner expenditures of Health Board regions per 1,000 population in Scotland.

18. There is considerable variation in the dental expenditures of Health Board regions per 1,000 population in Scotland.

19. There is considerable variation in the pharmaceutical expenditures of Health Board regions per 1,000 population in Scotland.

20. There is variation in the opticians' expenditures of Health Boards per 1,000 population in Scotland.

21. There is considerable variation in the community health expenditures of Health Board regions per 1,000 population in Scotland.
22. Health Board regions which are relatively deprived in one aspect of health care provision are deprived in all spheres of health care provision.
23. There has been no major reduction in regional inequalities in the Scottish Health Service from 1951 to 1976.
24. Incrementalism is the policy-making process used by Health Boards in Scotland.

**Hypotheses:**

1. There is no strong relationship between policy outputs and policy outcomes in the Health Board regions of Scotland.
2. There is a strong relationship between income and infant mortality rates in the Health Board regions of Scotland.
3. There is a strong relationship between urbanisation and infant mortality rates in the Health Board regions of Scotland.
4. There is a strong relationship between industrialisation and infant mortality rates in the Health Board regions of Scotland.
5. There is a strong relationship between region and infant mortality rates in the Health Board regions of Scotland.

6. There is a strong relationship between income and crude death rates in the Health Board regions of Scotland.
7. There is a strong relationship between urbanisation and crude death rates in the Health Board regions of Scotland.
8. There is a strong relationship between industrialisation and crude death rates in the Health Board regions of Scotland.
9. There is a strong relationship between region and crude death rates in the Health Board regions of Scotland.
10. There is a strong relationship between income and standardised mortality rates in the Health Board regions of Scotland.
11. There is a strong relationship between urbanisation and standardised mortality rates in the Health Board regions of Scotland.
12. There is a strong relationship between industrialisation and standardised mortality rates in the Health Board regions of Scotland.
13. There is a strong relationship between region and standardised mortality rates in the Health Board regions of Scotland.
14. There is a strong relationship between income and the policy outputs and outcomes of the Health Boards in Scotland.
15. There is a strong relationship between industrialisation and the policy outputs and outcomes of the Health Boards in Scotland.

16. There is a strong relationship between urbanisation and the policy outputs and outcomes of the Health Boards in Scotland.
17. There is a strong relationship between region and the policy outputs and outcomes of the Health Boards in Scotland.
18. There is a strong relationship between infant mortality rates and the policy outputs and outcomes of the Health Boards in Scotland.
19. There is a strong relationship between standardised mortality rates and the policy outcomes and outputs of the Health Boards in Scotland.
20. There is a strong relationship between crude death rates and the policy outputs and outcomes of the Health Boards in Scotland.
21. There is a strong relationship between the nature of the policy process and the policy outputs and outcomes of the Health Boards in Scotland.
22. There is a strong relationship between the number of teaching hospitals per Health Board and the policy outputs and outcomes of the Health Boards in Scotland.
23. There is a strong relationship between the total number of staff of Health Boards and the policy outputs and outcomes of Health Boards in Scotland.
24. Government structure variables explain more of the variation in policy outputs and outcomes between Health Board regions in Scotland than socio-economic status variables.



25. Government structure variables explain more of the variation in policy outputs and outcomes between Health Board regions in Scotland than health status variables.

26. The policy process is the most powerful explanatory variables when it is applied to an analysis of policy variation between Health Board regions in Scotland.

**APPENDIX C**

**Policy Outputs and Policy Outcomes**

**by Health Board**

**1951 - 1976**

Table C-1

Hospital Expenditures/1,000 by Health Board 1951 - 1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	2,846	8,036	21,145	61,970
Ayrshire and Arran	3,196	6,657	16,216	45,190
Borders	3,018	7,023	18,813	55,480
Dumfries and Galloway	4,717	10,855	23,791	73,720
Fife	2,300	6,330	20,130	53,090
Forth Valley	4,310	9,549	24,779	68,700
Grampian	3,793	10,007	27,537	75,820
Greater Glasgow	4,770	10,957	32,321	111,200
Highland	4,848	11,511	28,087	77,850
Lanark	3,983	7,904	17,575	52,350
Lothian	5,078	12,304	31,293	91,450
Orkney	1,244	4,722	16,452	44,846
Shetland	2,626	6,290	19,174	48,129
Tayside	5,823	13,433	36,032	109,830
Western Isles	2,426	6,089	17,278	46,789

Table C-2

## General Beds' Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	1,541	4,628	12,996	34,580
Ayrshire and Arran	2,474	4,971	11,477	27,280
Borders	1,877	4,295	10,454	30,310
Dumfries and Galloway	2,264	5,737	11,812	37,610
Fife	1,472	4,593	11,290	27,890
Forth Valley	2,202	4,959	11,991	31,580
Grampian	2,388	6,646	17,622	47,720
Greater Glasgow	3,419	8,339	22,833	72,060
Highland	3,132	7,572	18,019	44,231
Lanark	2,532	5,529	10,566	23,860
Lothian	3,406	9,402	21,828	60,630
Orkney	851	2,956	11,504	28,967
Shetland	2,153	5,500	11,638	29,028
Tayside	3,825	8,989	22,245	67,810
Western Isles	1,269	3,941	15,938	31,310

Table C-3

Psychiatric Beds' Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	903	2,116	4,927	15,890
Ayrshire and Arran	350	997	2,333	8,000
Borders	739	1,903	4,872	14,340
Dumfries and Galloway	2,427	4,577	9,761	24,240
Fife	652	1,455	5,995	15,970
Forth Valley	1,711	3,797	9,498	27,490
Grampian	1,094	2,479	7,086	19,830
Greater Glasgow	1,106	2,182	6,364	17,720
Highland	1,417	3,064	8,387	22,087
Lanark	889	1,610	4,140	14,474
Lothian	1,351	2,425	6,389	19,190
Orkney	000	00000	00000	000000
Shetland	000	00000	00000	000000
Tayside	1,299	3,175	9,122	25,560
Western Isles	000	00000	00000	1,014

Table C-4

Chronic Beds' Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	402	1,292	3,221	11,490
Ayrshire and Arran	373	689	2,406	7,050
Borders	402	825	3,487	9,950
Dumfries and Galloway	026	542	2,219	8,750
Fife	176	282	2,845	8,020
Forth Valley	337	793	3,290	9,580
Grampian	311	882	2,830	8,260
Greater Glasgow	245	436	3,123	10,920
Highland	298	875	1,682	8,530
Lanark	563	765	2,869	10,662
Lothian	321	477	3,076	9,532
Orkney	392	1,766	4,948	15,506
Shetland	474	790	7,536	18,824
Tayside	698	1,269	4,664	12,998
Western Isles	1,157	2,148	1,340	14,461

Table C-5

## General Practitioners' Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	983	1,822	3,368	7,350
Ayrshire and Arran	1,052	1,814	3,390	6,980
Borders	1,287	2,111	5,027	8,612
Dumfries and Galloway	1,270	2,026	4,252	9,310
Fife	1,011	1,666	3,296	6,950
Forth Valley	994	1,647	3,385	7,230
Grampian	1,156	1,922	3,156	8,349
Greater Glasgow	1,062	1,694	3,509	7,362
Highland	1,568	1,779	4,766	10,508
Lanark	1,015	1,753	3,123	6,722
Lothian	967	1,731	3,559	7,617
Orkney	1,725	3,055	6,908	14,317
Shetland	1,716	2,716	5,626	11,699
Tayside	1,088	1,814	3,683	7,863
Western Isles	1,011	2,440	4,869	11,087

Table C-6

## Dental Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	621	737	1,309	2,960
Ayrshire and Arran	802	874	1,450	3,320
Borders	687	998	1,601	3,288
Dumfries and Galloway	691	858	1,423	3,130
Fife	816	888	1,559	3,280
Forth Valley	678	806	1,381	3,368
Grampian	718	945	1,662	3,609
Greater Glasgow	828	862	1,576	3,606
Highland	622	571	1,296	3,180
Lanark	804	912	1,395	3,180
Lothian	852	971	1,679	4,049
Orkney	355	455	1,026	1,606
Shetland	547	554	820	2,125
Tayside	913	1,169	1,667	3,771
Western Isles	490	604	1,031	1,389



Table C-7

## Pharmaceutical Chemists' Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	910	1,415	3,931	10,890
Ayrshire and Arran	1,146	1,542	4,457	12,260
Borders	867	1,392	4,313	11,598
Dumfries and Galloway	857	1,291	4,107	11,300
Fife	1,168	1,440	4,145	11,170
Forth Valley	961	1,459	3,859	11,329
Grampian	1,028	1,404	3,641	10,907
Greater Glasgow	1,255	1,509	4,163	11,300
Highland	939	903	3,684	9,793
Lanark	1,212	1,583	3,723	11,036
Lothian	971	1,633	4,182	10,809
Orkney	1,066	1,700	5,009	11,736
Shetland	918	1,532	4,173	9,741
Tayside	911	1,161	3,714	10,757
Western Isles	617	1,321	3,950	10,413

Table C-8

## Opticians' Expenditures/1,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	154	159	200	818
Ayrshire and Arran	165	149	209	848
Borders	132	137	182	532
Dumfries and Galloway	159	172	204	745
Fife	141	152	215	831
Forth Valley	167	162	201	787
Grampian	147	156	205	697
Greater Glasgow	215	190	273	1,057
Highland	158	109	189	615
Lanark	210	201	200	808
Lothian	175	183	223	802
Orkney	130	169	206	640
Shetland	196	255	446	1,435
Tayside	214	185	236	860
Western Isles	127	121	176	799

Table C-9

Community Health Expenditures/1,000 by Health Board 1976

Health Board	1976
Argyll and Clyde	6,313
Ayrshire and Arran	4,650
Borders	6,781
Dumfries and Galloway	6,864
Fife	6,895
Forth Valley	6,651
Grampian	7,469
Greater Glasgow	6,827
Highland	10,494
Lanark	7,092
Lothian	7,085
Orkney	11,530
Shetland	14,117
Tayside	6,450
Western Isles	14,168

Table C-10

Total Expenditures/1,000 by Health Board 1976

Health Board	1976
Argyll and Clyde	96,970
Ayrshire and Arran	77,790
Borders	90,610
Dumfries and Galloway	110,640
Fife	86,220
Forth Valley	102,930
Grampian	113,680
Greater Glasgow	148,380
Highland	120,440
Lanark	84,950
Lothian	128,540
Orkney	90,482
Shetland	95,170
Tayside	148,270
Western Isles	91,574

Table C-11

## Hospital Doctors/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	1.13	3.19	3.09	5.16
Ayrshire and Arran	1.46	3.14	2.65	4.08
Borders	1.90	3.43	2.12	3.40
Dumfries and Galloway	1.05	4.49	3.97	6.73
Fife	1.02	2.73	3.75	4.75
Forth Valley	1.21	3.25	3.26	5.34
Grampian	2.01	5.77	4.84	8.99
Greater Glasgow	2.02	6.69	6.44	15.25
Highland	1.61	3.70	3.49	8.08
Lanark	1.32	3.06	2.33	4.02
Lothian	2.68	7.80	8.08	12.68
Orkney	0.94	1.07	1.46	2.14
Shetland	0.83	1.46	1.15	1.58
Tayside	2.25	7.16	6.08	12.98
Western Isles	0.70	2.70	2.70	2.99

Table C-12

Hospital Nurses/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	29.44	42.49	66.24	82.77
Ayrshire and Arran	27.07	35.67	48.40	61.53
Borders	27.08	33.26	63.43	78.36
Dumfries and Galloway	41.80	55.70	66.44	96.73
Fife	20.37	36.71	59.63	67.54
Forth Valley	38.76	49.69	71.16	88.05
Grampian	42.89	58.88	82.72	91.25
Greater Glasgow	45.95	55.94	84.79	119.19
Highland	41.60	56.59	77.69	90.95
Lanark	35.89	43.95	55.64	67.59
Lothian	48.46	66.89	86.63	102.06
Orkney	15.53	28.80	51.53	63.10
Shetland	21.70	32.28	53.55	69.61
Tayside	54.39	74.68	99.35	128.05
Western Isles	17.00	34.10	45.39	61.96

**Table C-13****General Practitioners/10,000 by Health Board 1971-1976**

<b>Health Board</b>	<b>1971</b>	<b>1976</b>
<b>Argyll and Clyde</b>	<b>4.87</b>	<b>5.49</b>
<b>Ayrshire and Arran</b>	<b>4.60</b>	<b>5.00</b>
<b>Borders</b>	<b>5.99</b>	<b>6.20</b>
<b>Dumfries and Galloway</b>	<b>5.70</b>	<b>6.05</b>
<b>Fife</b>	<b>4.50</b>	<b>4.75</b>
<b>Forth Valley</b>	<b>4.60</b>	<b>5.33</b>
<b>Grampian</b>	<b>5.56</b>	<b>6.30</b>
<b>Greater Glasgow</b>	<b>4.99</b>	<b>6.67</b>
<b>Highland</b>	<b>6.67</b>	<b>7.83</b>
<b>Lanark</b>	<b>3.99</b>	<b>4.55</b>
<b>Lothian</b>	<b>4.96</b>	<b>6.28</b>
<b>Orkney</b>	<b>11.13</b>	<b>10.70</b>
<b>Shetland</b>	<b>7.50</b>	<b>7.38</b>
<b>Tayside</b>	<b>5.26</b>	<b>5.51</b>
<b>Western Isles</b>	<b>7.03</b>	<b>7.07</b>

Table C-14

General Dental Practitioners/10,000 by Health Board 1971-1976

Health Board	1971	1976
Argyll and Clyde	1.91	2.04
Ayrshire and Arran	2.18	2.28
Borders	2.03	2.20
Dumfries and Galloway	1.75	1.88
Fife	2.08	2.15
Forth Valley	1.94	2.03
Grampian	1.92	2.00
Greater Glasgow	2.03	2.43
Highland	2.11	2.13
Lanark	1.82	1.89
Lothian	2.70	2.87
Orkney	1.17	1.12
Shetland	1.15	1.05
Tayside	2.21	2.36
Western Isles	2.01	2.02



Table C-15

Opticians/10,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	1.88	1.86	1.39
Ayrshire and Arran	1.67	1.45	1.17
Borders	2.05	0.91	1.50
Dumfries and Galloway	1.16	1.33	1.04
Fife	1.22	0.95	1.26
Forth Valley	1.39	0.99	1.22
Grampian	1.41	1.19	1.10
Greater Glasgow	2.12	1.40	1.34
Highland	1.10	1.20	1.01
Lanark	1.62	1.04	0.77
Lothian	1.48	1.31	2.71
Orkney	1.60	0.59	0.56
Shetland	1.68	1.15	1.05
Tayside	1.83	1.63	1.61
Western Isles	1.23	1.00	1.01

**Table C-16****Community Health Staff/10,000 by Health Board 1976**

<b>Health Board</b>	<b>1976</b>
Argyll and Clyde	8.84
Ayrshire and Arran	6.84
Borders	7.62
Dumfries and Galloway	9.40
Fife	9.39
Forth Valley	3.39
Grampian	11.41
Greater Glasgow	9.95
Highland	15.48
Lanark	9.58
Lothian	10.04
Orkney	20.84
Shetland	19.51
Tayside	8.71
Western Isles	24.58

Table C-17

## Total Beds/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	93.92	109.53	100.06	101.12
Ayrshire and Arran	82.39	78.64	73.44	73.98
Borders	89.28	101.67	103.98	93.17
Dumfries and Galloway	143.82	148.67	127.04	119.58
Fife	70.67	74.46	88.59	83.75
Forth Valley	143.64	152.94	145.57	143.15
Grampian	113.86	128.47	131.23	118.94
Greater Glasgow	122.67	122.09	128.51	135.74
Highland	128.99	144.85	145.72	136.59
Lanark	122.24	119.54	105.39	90.37
Lothian	120.83	130.88	122.20	115.90
Orkney	41.40	56.54	67.34	69.86
Shetland	68.21	76.35	90.61	84.90
Tayside	167.14	174.87	162.37	145.43
Western Isles	56.76	66.54	71.92	72.74

Table C-18

## Psychiatric beds/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	43.17	47.80	43.96	40.98
Ayrshire and Arran	21.06	23.90	23.43	23.40
Borders	38.01	40.86	41.02	33.62
Dumfries and Galloway	85.94	88.64	75.84	62.23
Fife	34.49	34.08	40.38	38.82
Forth Valley	84.12	97.45	91.13	88.61
Grampian	50.20	56.70	58.96	52.20
Greater Glasgow	47.68	49.14	52.26	53.22
Highland	56.77	66.75	68.72	64.67
Lanark	53.43	49.27	44.63	42.25
Lothian	47.99	51.27	45.08	41.59
Orkney	00000	00000	00000	00000
Shetland	00000	00000	00000	00000
Tayside	67.40	73.94	69.96	61.34
Western Isles	00000	00000	00000	3.36

Table C-19

## Chronic Beds/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	12.88	34.42	16.57	20.55
Ayrshire and Arran	8.53	13.76	13.85	14.52
Borders	14.00	16.72	20.72	20.81
Dumfries and Galloway	11.08	11.13	10.83	14.97
Fife	7.53	5.36	11.98	13.60
Forth Valley	15.51	14.06	15.21	18.15
Grampian	13.13	16.24	16.55	16.43
Greater Glasgow	7.08	7.14	13.60	18.17
Highland	11.05	12.81	9.85	19.30
Lanark	12.99	14.53	18.27	18.85
Lothian	6.65	6.98	14.63	14.51
Orkney	14.58	25.60	26.93	30.98
Shetland	21.70	21.33	48.47	46.40
Tayside	17.11	21.20	22.03	21.75
Western Isles	35.96	35.88	12.71	30.64

Table C-20

## General Beds/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	37.88	38.31	39.53	39.57
Ayrshire and Arran	52.80	40.98	36.16	36.04
Borders	37.28	44.09	42.24	38.73
Dumfries and Galloway	46.62	48.90	40.37	41.36
Fife	28.65	35.02	36.22	31.32
Forth Valley	44.19	41.43	39.24	35.99
Grampian	50.53	55.52	55.72	50.30
Greater Glasgow	67.91	65.59	62.66	64.39
Highland	61.18	65.29	67.13	52.61
Lanark	55.87	55.174	42.48	29.26
Lothian	66.19	72.62	62.48	59.92
Orkney	26.82	30.94	40.40	38.31
Shetland	46.51	55.02	42.13	38.49
Tayside	85.13	79.72	70.37	62.33
Western Isles	20.79	30.67	59.21	38.72

Table C-21

## Pharmaceutical Chemists' Outlets/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	2.91	2.85	2.21	1.93
Ayrshire and Arran	3.18	3.07	2.64	2.36
Borders	4.36	4.69	3.14	2.80
Dumfries and Galloway	3.58	2.66	2.65	2.43
Fife	3.75	3.34	2.75	2.59
Forth Valley	2.94	2.78	2.31	2.22
Grampian	4.55	4.26	2.91	3.45
Greater Glasgow	3.14	2.82	2.22	2.21
Highland	3.31	2.81	2.90	2.52
Lanark	2.67	2.67	1.73	1.48
Lothian	4.06	3.45	2.74	2.66
Orkney	1.88	1.60	1.75	1.69
Shetland	2.58	2.81	1.73	1.58
Tayside	3.71	3.27	2.59	2.23
Western Isles	1.97	2.76	1.00	1.01

**APPENDIX D**  
**Predicted Policy Outputs**  
**by Health Board**



Table D-1

## Predicted Hospital Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	7,381	21,878	60,191
Ayrshire and Arran	7,382	18,610	43,459
Borders	7,381	19,432	52,275
Dumfries and Galloway	7,383	28,042	69,173
Fife	7,381	17,875	56,745
Forth Valley	7,383	25,107	72,527
Grampian	7,382	26,136	81,889
Greater Glasgow	7,383	28,271	98,129
Highland	7,383	29,516	83,756
Lanark	7,382	21,412	48,072
Lothian	7,383	31,297	94,639
Orkney	7,380	14,262	44,260
Shetland	7,381	17,785	53,500
Tayside	7,383	33,834	110,726
Western Isles	7,381	17,334	47,064

Table D-2

Predicted General Beds' Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	4,750	12,421	33,753
Ayrshire and Arran	4,751	12,982	28,820
Borders	4,750	12,023	25,498
Dumfries and Galloway	4,751	14,542	29,908
Fife	4,750	12,211	28,213
Forth Valley	4,751	12,957	30,489
Grampian	4,751	16,394	48,775
Greater Glasgow	4,752	19,844	65,697
Highland	4,752	18,281	50,065
Lanark	4,751	14,119	25,867
Lothian	4,752	22,010	62,434
Orkney	4,749	8,876	28,908
Shetland	4,750	14,059	29,343
Tayside	4,752	21,168	63,788
Western Isles	4,749	10,883	43,307

Table D-3

## Predicted Psychiatric beds' Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	1,427	5,572	14,182
Ayrshire and Arran	1,426	2,885	7,358
Borders	1,426	5,061	14,038
Dumfries and Galloway	1,429	11,483	26,899
Fife	1,426	3,985	16,992
Forth Valley	1,428	9,609	26,207
Grampian	1,427	6,444	19,862
Greater Glasgow	1,427	5,731	17,963
Highland	1,427	7,849	23,284
Lanark	1,427	4,357	12,112
Lothian	1,427	6,315	18,028
Orkney	00000	00000	000000
Shetland	00000	00000	000000
Tayside	1,427	8,115	25,218
Western Isles	00000	00000	000000

Table D-4

## Predicted Chronic beds' Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	1,045	3,324	10,842
Ayrshire and Arran	1,045	3,295	9,572
Borders	1,045	3,299	11,257
Dumfries and Galloway	1,045	3,290	9,280
Fife	1,045	3,282	10,256
Forth Valley	1,045	3,298	10,950
Grampian	1,045	3,301	10,233
Greater Glasgow	1,045	3,287	10,689
Highland	1,045	3,300	8,443
Lanark	1,045	3,297	10,293
Lothian	1,045	3,288	10,616
Orkney	1,045	3,329	13,534
Shetland	1,045	3,298	17,567
Tayside	1,045	3,314	13,091
Western Isles	1,046	3,340	7,910

Table D-5

## Predicted General Practitioner Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	2,253	3,704	7,364
Ayrshire and Arran	2,253	3,685	7,406
Borders	2,252	4,395	10,493
Dumfries and Galloway	2,252	4,192	9,031
Fife	2,253	3,332	7,228
Forth Valley	2,253	3,286	7,396
Grampian	2,252	3,943	6,964
Greater Glasgow	2,252	3,398	7,630
Highland	2,252	3,602	10,000
Lanark	2,253	3,539	6,902
Lothian	2,253	3,487	7,724
Orkney	2,252	6,650	14,039
Shetland	2,252	5,840	11,621
Tayside	2,252	3,685	7,959
Western Isles	2,253	5,181	10,194

Table D-6

## Predicted Dental Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	728	1,301	2,840
Ayrshire and Arran	727	1,463	3,211
Borders	728	1,610	3,608
Dumfries and Galloway	728	1,444	3,140
Fife	727	1,480	3,497
Forth Valley	728	1,383	3,029
Grampian	728	1,547	3,768
Greater Glasgow	727	1,449	3,542
Highland	728	1,104	2,806
Lanark	727	1,508	3,066
Lothian	727	1,578	3,813
Orkney	728	967	2,096
Shetland	728	1,084	1,554
Tayside	727	1,812	3,781
Western Isles	728	1,143	2,109

Table D-7

Predicted Pharmaceutical Services Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	1,380	4,066	10,861
Ayrshire and Arran	1,380	4,202	11,396
Borders	1,380	4,041	11,250
Dumfries and Galloway	1,380	3,933	11,040
Fife	1,380	4,093	11,079
Forth Valley	1,380	4,113	10,787
Grampian	1,380	4,054	10,565
Greater Glasgow	1,380	4,167	11,097
Highland	1,380	3,516	10,609
Lanark	1,380	4,247	10,649
Lothian	1,380	4,301	11,116
Orkney	1,380	4,373	11,958
Shetland	1,380	4,192	11,107
Tayside	1,380	3,793	10,640
Western Isles	1,380	3,965	10,880

Table D-8

Predicted Opticians' Expenditures/1,000 by Health Board 1961-1976

Health Board	1961	1971	1976
Argyll and Clyde	159	213	747
Ayrshire and Arran	159	197	773
Borders	159	179	694
Dumfries and Galloway	159	233	759
Fife	159	202	791
Forth Valley	159	217	750
Grampian	159	208	761
Greater Glasgow	159	260	961
Highland	159	136	715
Lanark	159	277	747
Lothian	159	249	814
Orkney	159	228	764
Shetland	159	360	1,469
Tayside	159	252	852
Western Isles	159	154	676



**APPENDIX E**

**Independent Variables by Health Board**

**1951 - 1976**

Table E-1

Per Capita Income by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	372.08	675.87	1,266.19	3,004.82
Ayrshire and Arran	372.49	653.42	1,213.97	2,881.81
Borders	375.37	690.14	1,231.12	2,880.95
Dumfries and Galloway	372.13	677.93	1,203.70	3,069.76
Fife	363.27	657.43	1,183.33	3,096.77
Forth Valley	367.92	660.07	1,232.37	2,724.48
Grampian	383.21	663.56	1,136.55	3,011.90
Greater Glasgow	383.76	676.13	1,192.47	2,829.98
Highland	347.10	645.96	1,167.37	2,763.88
Lanark	386.01	676.48	1,184.80	2,812.03
Lothian	403.93	701.55	1,249.67	2,979.16
Orkney	334.48	646.00	857.14	2,142.62
Shetland	293.56	646.00	1,000.00	2,500.00
Tayside	380.96	683.82	1,232.92	2,837.34
Western Isles	340.65	646.00	1,097.52	2,789.55

Table E-2

Industrialisation by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	94.6	96.0	97.6	98.3
Ayrshire and Arran	92.2	94.1	96.5	97.3
Borders	71.5	81.3	88.6	92.9
Dumfries and Galloway	74.5	79.7	86.3	89.3
Fife	93.6	95.0	96.9	97.7
Forth Valley	94.5	96.0	97.4	98.1
Grampian	81.8	82.5	98.7	91.7
Greater Glasgow	98.4	97.4	99.4	99.6
Highland	75.8	82.9	90.1	93.6
Lanark	96.2	97.3	98.5	99.1
Lothian	95.9	96.9	98.1	98.6
Orkney	51.4	63.2	88.0	91.6
Shetland	67.0	81.1	85.7	90.4
Tayside	88.5	90.6	94.3	95.7
Western Isles	78.3	84.1	89.5	92.3

Table E-3

## Urbanisation by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	58.38	56.07	59.24	59.76
Ayrshire and Arran	97.94	103.18	108.50	111.40
Borders	23.54	21.90	21.08	21.39
Dumfries and Galloway	23.23	22.99	22.48	22.54
Fife	234.71	245.35	250.28	259.56
Forth Valley	89.17	93.00	99.95	102.62
Grampian	52.23	50.59	50.39	52.14
Greater Glasgow	2,362.20	2,416.61	2,189.43	1,970.23
Highland	6.48	6.52	6.98	7.42
Lanark	198.18	219.21	252.69	262.69
Lothian	396.78	404.83	424.83	430.34
Orkney	21.78	19.21	17.50	18.19
Shetland	13.54	12.46	12.12	13.27
Tayside	53.21	53.05	52.99	53.60
Western Isles	12.28	11.25	10.32	10.25

Table E-4

Total Staff/10,000 by Health Board 1971 - 1976

Health Board	1971	1976
Argyll and Clyde	80.19	98.81
Ayrshire and Arran	61.95	76.44
Borders	77.63	94.48
Dumfries and Galloway	81.86	114.89
Fife	73.68	83.08
Forth Valley	84.26	104.22
Grampian	99.14	113.11
Greater Glasgow	101.87	147.12
Highland	94.07	112.55
Lanark	66.56	80.33
Lothian	106.44	129.29
Orkney	67.63	79.33
Shetland	66.25	82.27
Tayside	117.14	152.77
Western Isles	59.15	76.08

Table E-5

## Teaching Hospitals/10,000 by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	0.0	0.0	0.0	0.02173
Ayrshire and Arran	0.0	0.0	0.0	0.0
Borders	0.0	0.0	0.0	0.0
Dumfries and Galloway	0.06756	0.06829	0.06983	0.06964
Fife	0.03259	0.03118	0.03056	0.02952
Forth Valley	0.0	0.0	0.0	0.0
Grampian	0.10999	0.11354	0.11399	0.13220
Greater Glasgow	0.06937	0.07535	0.09148	0.11090
Highland	0.0	0.0	0.0	0.0
Lanark	0.0	0.0	0.0	0.0
Lothian	0.15799	0.16888	0.17435	0.17211
Orkney	0.0	0.0	0.0	0.0
Shetland	0.0	0.0	0.0	0.0
Tayside	0.07514	0.07537	0.07545	0.07459
Western Isles	0.0	0.0	0.0	0.0

Table E-6

## Crude Death Rates by Health Board 1951 - 1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	13.2	12.7	11.5	12.4
Ayrshire and Arran	12.3	12.3	12.1	12.9
Borders	15.3	15.7	14.5	14.6
Dumfries and Galloway	12.8	16.6	13.2	12.8
Fife	12.2	11.7	11.1	11.8
Forth Valley	11.9	11.2	10.9	11.7
Grampian	12.1	11.7	11.4	12.1
Greater Glasgow	12.7	12.1	11.6	13.8
Highland	14.9	13.2	13.0	13.2
Lanark	12.7	12.2	11.7	10.6
Lothian	12.9	12.4	11.6	12.1
Orkney	15.8	14.9	13.7	13.1
Shetland	17.6	15.9	15.2	14.0
Tayside	13.8	12.8	12.5	12.7
Western Isles	14.6	13.7	13.4	16.8

Table E-7

## Standardised Mortality Rates by Health Board 1951-1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	13.2	12.6	11.4	13.3
Ayrshire and Arran	12.5	12.6	12.4	13.4
Borders	13.2	12.7	11.5	11.3
Dumfries and Galloway	11.4	11.9	12.5	11.8
Fife	12.2	11.9	11.3	11.8
Forth Valley	12.4	11.9	11.3	12.8
Grampian	11.1	11.0	10.8	11.1
Greater Glasgow	14.2	13.6	13.0	13.6
Highland	11.0	10.3	10.0	12.9
Lanark	14.3	13.7	13.1	13.7
Lothian	13.0	12.0	11.4	11.8
Orkney	10.7	10.9	10.1	10.5
Shetland	11.4	10.4	9.9	11.5
Tayside	12.5	11.3	11.1	11.4
Western Isles	10.9	10.1	9.9	11.4



Table E-8

## Infant Mortality Rates by Health Board 1951 - 1976

Health Board	1951	1961	1971	1976
Argyll and Clyde	37.4	23.8	20.4	18.0
Ayrshire and Arran	37.5	29.1	18.0	18.0
Borders	35.8	24.0	16.1	7.0
Dumfries and Galloway	42.0	15.3	16.3	13.0
Fife	37.0	23.0	18.0	12.0
Forth Valley	35.8	24.1	21.3	16.0
Grampian	29.6	21.4	12.9	12.0
Greater Glasgow	43.7	30.3	23.9	17.0
Highland	31.8	17.9	14.6	14.0
Lanark	44.6	30.8	24.3	14.0
Lothian	27.9	22.3	18.4	14.0
Orkney	22.0	6.0	4.0	8.0
Shetland	20.0	11.0	7.0	3.0
Tayside	34.3	21.7	17.2	10.0
Western Isles	31.0	20.0	15.3	14.0

**APPENDIX F**

**Correlation of Socio-Economic Variables**

**with Health Status Variables**

**1951 - 1976**

Table F-1

Pearson Correlation Coefficients - Health Status Variables  
by Income - 1951-1976

Health Status Variable	Year			
	1951	1961	1971	1976
Crude Death Rate	-0.7905*	-0.0474	-0.5368*	-0.2203
Standardised Mortality Rate	0.3228	0.5936*	0.5576*	0.2957
Infant Mortality Rate	0.6285*	0.4272	0.8308*	0.4637*

\* Significant at  $p = 0.05$  level of confidence

**Table F-2**  
**Pearson Correlation Coefficients - Health Status Variables**  
**by Urbanisation - 1951-1976**

Health Status Variables	Year			
	1951	1961	1971	1976
Crude Death Rate	-0.2419	-0.2775	-0.3071	0.0177
Standardised Mortality Rate	0.1181	0.5112*	0.5085*	0.4355
Infant Mortality Rate	0.3912	0.4314	0.4600*	0.3385

\*

Significant at  $p = 0.05$  level of confidence

Table F-3

Pearson Correlation Coefficients - Health Status Variables  
by Industrialisation - 1951-1976

Health Status Variable	Year			
	1951	1961	1971	1976
Crude Death Rate	-0.7740*	-0.7027*	-0.8215	-0.4699*
Standardised Mortality Rate	0.1068	0.5971*	0.5783*	0.7042*
Infant Mortality Rate	0.6473*	0.8530*	0.8060*	0.6686*

\*

Significant at  $p = 0.05$  level of confidence

Table F-4

## Analysis of Variance - F Scores - Health Status

## Variables by Region - 1951-1976

Health Status Variable	Year			
	1951	1961	1971	1976
Crude Death Rate	5.243*	0.560	1.848	1.982
Standardised Mortality Rate	9.000*	11.298*	17.491*	1.321
Infant Mortality Rate	8.807*	6.727*	8.759*	0.910

\*

Significant to p-0.05 level of confidence

Table F-5

Analysis of Covariance - Health Status Variables by  
Region 1951-1976

Controlling for Income, Urbanisation and Industrialisation

Health Status Variable	Year			
	1951	1961	1971	1976
Crude Death Rate	0.002	0.210	0.401	0.442
Standardised Mortality Rate	1.427	1.692	5.201*	0.243
Infant Mortality Rate	1.290	0.508	0.157	0.901

\*

Significant at  $p = 0.05$  level of Confidence

Table F-6

Pearson Correlation Coefficients - Health Status Variables  
by Health Status Variables - 1951-1976

Health Status Variables	1951	Year 1961	1971	1976
Crude Death Rate with Standardised Mortality Rate	-0.3984	-0.2849	-0.4591*	-0.3392
Crude Death Rate with Infant Mortality Rate	-0.6768*	-0.6477*	-0.6852*	-0.2909
Standardised Mortality Rate with Infant Mortality Rate	0.6624*	0.7472*	0.7535*	0.7681*

\*

Significant at  $p = 0.05$  level of confidence



Table F-7

Spearman's rho - Health Status Ranking with Health  
Status Rankings - 1951-1976

Variable Pair	1951	Year 1961	1971	1976
Crude Death Rates with Standardised Mortality Rates	-0.2670	-0.3357	-0.2894	-0.3052
Crude Death Rates with Infant Mortality Rates	-0.5063*	-0.6416*	-0.6315*	-0.2923
Standardised Mortality Rates with Infant Mortality Rates	0.6425*	0.8849*	0.7482*	0.8213*

\* Significant at  $p = 0.05$  level of confidence

**APPENDIX G**

**Simple Correlation**

**Policy Variables by Independent Variables**

**1951, 1961, 1971**

Table G-1

## Simple Correlation

## Policy Variables by Income 1971

Policy Variable	r
Total Beds/10,000	0.5143*
Psychiatric beds/10,000	0.6727*
Chronic beds/10,000	-0.5725*
General Beds/10,000	0.1362
Hospital Doctors/10,000	0.5090*
Hospital Nurses/10,000	0.4584*
General Practitioners/10,000	-0.8977*
Pharmacists' Outlets/10,000	0.5267*
Dentists/10,000	0.7884*
Opticians/10,000	0.6239*
Hospital Expenditures/1,000	0.4109
General Beds' Expenditures/1,000	0.2356
Psychiatric Beds' Expenditures/1,000	0.6662*
Chronic Beds' Expenditures/1,000	-0.4808*
General Practitioner Expenditures/1,000	-0.8119*
Dental Expenditures/1,000	0.7193*
Pharmaceutical Expenditures/1,000	-0.5475*
Optical Expenditures/1,000	-0.3447

\*

Significant at  $p = 0.05$  level of confidence

Table G-2  
Policy Variables by Urbanisation  
Simple Correlation

Policy Variable	r
Total Beds/10,000	0.1662
Psychiatric Beds/10,000	0.1037
Chronic Beds/10,000	-0.1814
General Beds/10,000	0.3025
Hospital Doctors/10,000	0.4964*
Hospital Nurses/10,000	0.3321
General Practitioners/10,000	-0.2337
Pharmacists' Outlets/10,000	-0.0276
Dentists/10,000	0.1893
Opticians/10,000	0.1778
Hospital Expenditures/1,000	0.4155
General Beds' Expenditures/1,000	0.5149*
Psychiatric Beds' Expenditures/1,000	0.1173
Chronic Beds' Expenditures/1,000	-0.0635
General Practitioner Expenditures/1,000	-0.2616
Dental Expenditures/1,000	0.2901
Pharmaceutical Expenditures/1,000	0.0629
Optical Expenditures/1,000	0.1812

\* Significant at  $p = 0.05$  level of confidence

Table G-3

## Simple Correlation

## Policy Variables by Industrialisation 1971

Policy Variable	r
Total Beds/10,000	0.1714
Psychiatric Beds/10,000	0.3044
Chronic Beds/10,000	-0.4247
General Beds/10,000	0.0436
Hospital Doctors/10,000	0.4682*
Hospital Nurses/10,000	0.2739
General Practitioners/10,000	-0.6878*
Pharmacists' Outlets/10,000	0.0777
Dentists/10,000	0.5765*
Opticians/10,000	0.3724
Hospital Expenditures/1,000	0.3656
General Beds' Expenditures/1,000	0.2663
Psychiatric Beds' Expenditures/1,000	0.2593
Chronic Beds' Expenditures/1,000	-0.2678
General Practitioner Expenditures/1,000	-0.7417*
Dental Expenditures/1,000	0.4989*
Pharmaceutical Expenditures/1,000	-0.1999
Optical Expenditures/1,000	-0.2180

\*

Significant at  $p = 0.05$  level of confidence

Table G-4

## Analysis of Variance

## Policy Variables by Region 1971

Policy Variable	f
Total Beds/10,000	1.117
Psychiatric Beds/10,000	3.365
Chronic Beds/10,000	1.566
General Beds/10,000	0.160
Hospital Doctors/10,000	2.416
Hospital Nurses/10,000	0.843
General Practitioners/10,000	8.166*
Pharmacists' Outlets/10,000	2.303
Dentists/10,000	4.142
Opticians/10,000	0.116
Hospital Expenditures/1,000	0.752
General Beds' Expenditures/1,000	0.017
Psychiatric Beds' Expenditures/1,000	3.512
Chronic Beds' Expenditures/1,000	0.356
General Practitioner Expenditures/1,000	4.384
Dental Expenditures/1,000	9.649*
Pharmaceutical Expenditures/1,000	0.002
Optical Expenditures/1,000	0.356

\*

Significant at  $p = 0.05$  level of confidence

Table G-5

## Simple Correlation

## Policy Variables by Crude Death Rates 1971

Policy Variable	r
Total Beds/10,000	-0.3186
Psychiatric Beds/10,000	-0.5302*
Chronic Beds/10,000	0.6307*
General Beds/10,000	-0.0390
Hospital Doctors/10,000	-0.5269*
Hospital Nurses/10,000	-0.3690
General Practitioners/10,000	0.6597*
Pharmacists' Outlets/10,000	-0.2241
Dentists/10,000	-0.5477*
Opticians/10,000	-0.3074
Hospital Expenditures/1,000	-0.3409
General Beds' Expenditures/1,000	-0.2592
Psychiatric Beds' Expenditures/1,000	-0.4984*
Chronic Beds' Expenditures/1,000	0.4688*
General Practitioner Expenditures/1,000	0.8324*
Dental Expenditures/1,000	-0.5933*
Pharmaceutical Expenditures/1,000	0.3705
Optical Expenditures/1,000	0.4172

\*

Significant at  $p \leq 0.05$  level of confidence

Table G-6

## Simple Correlation

## Policy Variables by Standardised Mortality Rates 1971

Policy Variable	r
Total Beds/10,000	0.1500
Psychiatric Beds/10,000	0.3818
Chronic Beds/10,000	-0.3872
General Beds/10,000	-0.2144
Hospital Doctors/10,000	0.2855
Hospital Nurses/10,000	0.1216
General Practitioners/10,000	-0.6602*
Pharmacists' Outlets/10,000	0.2230
Dentists/10,000	0.3011
Opticians/10,000	0.3178
Hospital Expenditures/1,000	0.0942
General Beds' Expenditures/1,000	-0.0270
Psychiatric Beds' Expenditures/1,000	0.3382
Chronic Beds' Expenditures/1,000	-0.2849
General Practitioner Expenditures/1,000	-0.6156*
Dental Expenditures/1,000	0.5519*
Pharmaceutical Expenditures/1,000	-0.0495
Optical Expenditures/1,000	-0.1832

\*

Significant at  $p = 0.05$  level of confidence



Table G-7

## Simple Correlation

## Policy Variables by Infant Mortality Rates 1971

Policy Variable	r
Total Beds/10,000	0.3622
Psychiatric Beds/10,000	0.5478*
Chronic Beds/10,000	-0.5993*
General Beds/10,000	0.0791
Hospital Doctors/10,000	0.4273
Hospital Nurses/10,000	0.2862
General Practitioners/10,000	-0.8774*
Pharmacists' Outlets/10,000	0.1546
Dentists/10,000	0.6297*
Opticians/10,000	0.4433*
Hospital Expenditures/1,000	0.2818
General Beds' Expenditures/1,000	0.1993
Psychiatric Beds' Expenditures/1,000	0.4891*
Chronic Beds' Expenditures/1,000	-0.5167*
General Practitioner Expenditures/1,000	-0.8298*
Dental Expenditures/1,000	0.5787*
Pharmaceutical Expenditures/1,000	-0.4818*
Optical Expenditures/1,000	-0.3410

\*

Significant at  $p = 0.05$  level of confidence

Table G-8

## Simple Correlation

Policy Variables by Number of $\bar{I}$ Total Staff 1971	
Policy Variable	r
Total Beds/10,000	0.8502*
Psychiatric Beds/10,000	0.6522*
Chronic Beds/10,000	-0.2225
General Beds/10,000	0.7171*
Hospital Doctors/10,000	0.8487*
Hospital Nurses/10,000	0.9962*
General Practitioners/10,000	-0.2731
Pharmacists' Outlets/10,000	0.5393*
Dentists/10,000	0.5187*
Opticians/10,000	0.4479
Hospital Expenditures/1,000	0.9740*
General Beds' Expenditures/1,000	0.8244*
Psychiatric Beds' Expenditures/1,000	0.7784*
Chronic Beds' Expenditures/1,000	-0.0173
General Practitioner Expenditures/1,000	-0.3606
Dental Expenditures/1,000	0.6664*
Pharmaceutical Expenditures/1,000	-0.4141
Optical Expenditures/1,000	-0.0368

\*

Significant at  $p = 0.05$  level of confidence

Table G-9  
Simple Correlation

Policy Variables by Number of Teaching Hospitals 1971

Policy Variable	r
Total Beds/10,000	0.4493*
Psychiatric Beds/10,000	0.3172
Chronic Beds/10,000	-0.2194
General Beds/10,000	0.5213*
Hospital Doctors/10,000	0.9016*
Hospital Nurses/10,000	0.7095*
General Practitioners/10,000	-0.2541
Pharmacists' Outlets/10,000	0.3777
Dentists/10,000	0.5184*
Opticians/10,000	0.2890
Hospital Expenditures/1,000	0.7223*
General Beds' Expenditures/1,000	0.7161*
Psychiatric Beds' Expenditures/1,000	0.4312
Chronic Beds' Expenditures/1,000	-0.0831
General Practitioner Expenditures/1,000	-0.3722
Dental Expenditures/1,000	0.6256*
Pharmaceutical Expenditures/1,000	-0.1553
Optical Expenditures/1,000	0.0235

\*

Significant at  $p = 0.05$  level of confidence

Table G-10  
Simple Correlation

Policy Variables by the Policy Process 1971

Policy Variable	r
Total Beds/10,000	0.9108*
Psychiatric Beds/10,000	0.9625*
Chronic Beds/10,000	0.1417
General Beds/10,000	0.7734*
Hospital Doctors/10,000	0.8146*
Hospital Nurses/10,000	0.9136*
General Practitioners/10,000	0.9139*
Pharmacists' Outlets/10,000	-0.3131
Dentists/10,000	0.6396*
Opticians/10,000	0.1085
Hospital Expenditures/1,000	0.9304*
General Beds' Expenditures/1,000	0.8591*
Psychiatric Beds' Expenditures/1,000	0.9666*
Chronic Beds' Expenditures/1,000	0.0107
General Practitioner Expenditures/1,000	0.9077*
Dental Expenditures/1,000	0.8864*
Pharmaceutical Expenditures/1,000	0.5954*
Optical Expenditures/1,000	0.8189*

\*

Significant at  $p = 0.05$  level of confidence

Table G-11

## Simple Correlation

## Policy Variables by Income 1961

Policy Variable	r
Total Beds/10,000	0.5208*
Psychiatric Beds/10,000	0.4684*
Chronic Beds/10,000	-0.3986
General Beds/10,000	0.5020*
Hospital Doctors/10,000	0.7073*
Hospital Nurses/10,000	0.5425*
Pharmacists' Outlets/10,000	0.4730*
Opticians/10,000	0.4267
Hospital Expenditures/1,000	0.5540*
General Beds' Expenditures/1,000	0.5129*
Psychiatric Beds' Expenditures/1,000	0.4882*
Chronic Beds' Expenditures/1,000	-0.3782
General Practitioner Expenditures/1,000	-0.4734*
Dental Expenditures/1,000	0.7675*
Pharmaceutical Expenditures/1,000	0.1192
Optical Expenditures/1,000	0.1633

\*

Significant at  $p = 0.05$  level of confidence

Table G-12

## Simple Correlation

## Policy Variables by Urbanisation 1961

Policy Variable	r
Total Beds/10,000	0.0857
Psychiatric Beds/10,000	0.0530
Chronic Beds/10,000	-0.4185
General Beds/10,000	0.3143
Hospital Doctors/10,000	0.4400*
Hospital Nurses/10,000	0.2223
Pharmacists' Outlets/10,000	-0.0650
Dentists/10,000	0.4634*
Hospital Expenditures/1,000	0.2622
General Beds' Expenditures/1,000	0.4182
Psychiatric Beds' Expenditures/1,000	0.0497
Chronic Beds' Expenditures/1,000	-0.3534
General Practitioner Expenditures/1,000	-0.2860
Dental Expenditures/1,000	0.1433
Pharmaceutical Expenditures/1,000	0.2043
Optical Expenditures/1,000	0.2153

\*

Significant at  $P=0.05$  level of confidence

Table G-13

## Simple Correlation

## Policy Variables by Industrialisation 1961

Policy Variable	r
Total Beds/10,000	0.3380
Psychiatric Beds/10,000	0.3735
Chronic Beds/10,000	-0.4630*
General Beds/10,000	0.2953
Hospital Doctors/10,000	0.4338
Hospital Nurses/10,000	0.3465
Pharmacists' Outlets/10,000	0.2994
Opticians/10,000	0.1846
Hospital Expenditures/1,000	0.3566
General Beds' Expenditures/1,000	0.4173
Psychiatric Beds' Expenditures/1,000	0.2824
Chronic Beds' Expenditures/1,000	-0.4878*
General Practitioner Expenditures/1,000	-0.8429*
Dental Expenditures/1,000	0.5408*
Pharmaceutical Expenditures/1,000	0.0512
Optical Expenditures/1,000	0.0924

\*

Significant at  $p=0.05$  level of confidence

Table G-14

## Analysis of Variance

## Policy Variables by Region 1961

Policy Variable	f
Total Beds/10,000	1.974
Psychiatric Beds/10,000	3.650
Chronic Beds/10,000	9.109*
General Beds/10,000	0.949
Hospital Doctors/10,000	2.750
Hospital Nurses/10,000	1.229
Pharmacists' Outlets/10,000	0.827
Opticians/10,000	0.605
Hospital Expenditures/1,000	1.492
General Beds' Expenditures/1,000	1.212
Psychiatric Beds' Expenditures/1,000	3.070
Chronic Beds' Expenditures/1,000	8.030*
General Practitioner Expenditures/1,000	6.766*
Dental Expenditures/1,000	15.283*
Pharmaceutical Expenditures/1,000	0.387
Optical Expenditures/1,000	0.205

\* Significant at  $p=0.05$  level of confidence



Table G-15

## Simple Correlation

## Policy Variable by Crude Death Rates 1961

Policy Variable	r
Total Beds/10,000	-0.2259
Psychiatric Beds/10,000	-0.2720
Chronic Beds/10,000	0.3088
General Beds/10,000	-0.1522
Hospital Doctors/10,000	-0.3460
Hospital Nurses/10,000	-0.3333
Pharmacists' Outlets/10,000	-0.1105
Opticians/10,000	0.0244
Hospital Expenditures/1,000	-0.2527
General Beds' Expenditures/1,000	-0.3001
Psychiatric Beds' Expenditures/1,000	-0.1386
Chronic Beds' Expenditures/1,000	0.1959
General Practitioner Expenditures/1,000	0.6772*
Dental Expenditures/1,000	-0.3298
Pharmaceutical Expenditures/1,000	-0.0629
Optical Expenditures/1,000	0.1797

\*

Significant at  $p=0.05$  level of confidence

Table G-16

## Simple Correlation

## Policy Variables by Standardised Mortality Rates 1961

Policy Variable	r
Total Beds/10,000	0.1516
Psychiatric Beds/10,000	0.2730
Chronic Beds/10,000	-0.5124*
General Beds/10,000	0.0831
Hospital Doctors/10,000	0.2415
Hospital Nurses/10,000	0.0478
Pharmacists' Outlets/10,000	0.1461
Opticians/10,000	0.5643*
Hospital Expenditures/1,000	0.0824
General Beds' Expenditures/1,000	0.0933
Psychiatric Beds' Expenditures/1,000	0.2167
Chronic Beds' Expenditures/1,000	-0.5110*
General Practitioner Expenditures/1,000	-0.5364*
Dental Expenditures/1,000	0.5185*
Pharmaceutical Expenditures/1,000	0.3999
Optical Expenditures/1,000	0.1806

\*

Significant at  $p=0.05$  level of confidence

Table G-17

## Simple Correlation

## Policy Variables by Infant Mortality Rates 1961

Policy Variable	r
Total Beds/10,000	0.2667
Psychiatric Beds/10,000	0.3229
Chronic Beds/10,000	-0.4021
General Beds/10,000	0.1959
Hospital Doctors/10,000	0.4012
Hospital Nurses/10,000	0.2252
Pharmacists' Outlets/10,000	0.3944
Opticians/10,000	0.3336
Hospital Expenditures/1,000	0.2433
General Beds' Expenditures/1,000	0.2774
Psychiatric Beds' Expenditures/1,000	0.2294
Chronic Beds' Expenditures/1,000	-0.4045
General Practitioner Expenditures/1,000	-0.8060*
Dental Expenditures/1,000	0.6240*
Pharmaceutical Expenditures/1,000	0.0365
Optical Expenditures/1,000	-0.1315

\*

Significant at  $p=0.05$  level of confidence

Table G-18

## Simple Correlation

## Policy Variables by Number of Teaching Hospitals 1961

Policy Variable	r
Total Beds/10,000	0.4393
Psychiatric Beds/10,000	0.3264
Chronic Beds/10,000	-0.4419*
General Beds/10,000	0.6159*
Hospital Doctors/10,000	0.8628*
Hospital Nurses/10,000	0.7441*
Pharmacists' Outlets/10,000	0.3437
Opticians/10,000	-0.0310
Hospital Expenditures/1,000	0.6705*
General Beds' Expenditures/1,000	0.7403*
Psychaitric Beds' Expenditures/1,000	0.3878
Chronic Beds' Expenditures/1,000	-0.3616
General Practitioner Expenditures/1,000	-0.3203
Dental Expenditures/1,000	0.5341*
Pharmaceutical Expenditures/1,000	0.0929
Optical Expenditures/1,000	0.1764

\*

Significant at  $p=0.05$  level of confidence

Table G-19

## Simple Correlation

## Policy Variables by the Policy Process 1961

Policy Variable	r
Total Beds/10,000	0.9210*
Psychiatric Beds/10,000	0.9487*
Chronic Beds/10,000	0.8004*
General Beds/10,000	0.9452*
Hospital Doctors/10,000	0.8191*
Hospital Nurses/10,000	0.9187*
Pharmacists' Outlets/10,000	-0.1020
Opticians/10,000	0.4037
Hospital Expenditures/1,000	0.9604*
General Beds' Expenditures/1,000	0.9455*
Psychiatric Beds' Expenditures/1,000	0.9821*
Chronic Beds' Expenditures/1,000	0.7691*
General Practitioner Expenditures/1,000	0.7349*
Dental Expenditures/1,000	0.8826*
Pharmaceutical Expenditures/1,000	0.4278
Optical Expenditures/1,000	0.6825*

\*

Significant at  $p=0.05$  level of confidence

Table G-20

## Simple Correlation

## Policy Variables by Income 1951

Policy Variable	r
Total Beds/10,000	0.5767*
Psychiatric Beds/10,000	0.6202*
Chronic Beds/10,000	-0.5479*
General Beds/10,000	0.4512*
Hospital Doctors/10,000	0.7018*
Hospital Nurses/10,000	0.6485*
Pharmacists' Outlets/10,000	0.5981*
Hospital Expenditures/1,000	0.5693*
General Beds' Expenditures/1,000	0.4734*
Psychiatric Beds' Expenditures/1,000	0.5588*
Chronic Beds' Expenditures/1,000	-0.2439
General Practitioner Expenditures/1,000	-0.7428*
Dental Expenditures/1,000	0.7383*
Pharmaceutical Expenditures/1,000	0.3101
Optical Expenditures/1,000	0.1942

\*

Significant at p-0.05 level of confidence

Table G-21

## Simple Correlation

## Policy Variable by Urbanisation 1951

Policy Variable	r
Total Beds/10,000	0.1603
Psychiatric Beds/10,000	0.0818
Chronic Beds/10,000	-0.3439
General Beds/10,000	0.3463
Hospital Doctors/10,000	0.3340
Hospital Nurses/10,000	0.3146
Pharmacists' Outlets/10,000	0.0183
Hospital Expenditures/1,000	0.2768
General Beds' Expenditures/1,000	0.4009
Psychiatric Beds' Expenditures/1,000	0.0951
Chronic Beds' Expenditures/1,000	-0.2116
General Practitioner Expenditures/1,000	-0.2284
Dental Expenditures/1,000	0.3425
Pharmaceutical Expenditures/1,000	0.5157*
Optical Expenditures/1,000	0.4793*

\*

Significant at  $p=0.05$  level of confidence

Table G-22

## Simple Correlation

## Policy Variable by Industrialisation 1951

Policy Variable	r
Total Beds/10,000	0.4790*
Psychiatric Beds/10,000	0.4627*
Chronic Beds/10,000	-0.3655
General Beds/10,000	0.4193
Hospital Doctors/10,000	0.3794
Hospital Nurses/10,000	0.4781*
Pharmacists' Outlets/10,000	0.2885
Hospital Expenditures/1,000	0.4922*
General Beds' Expenditures/1,000	0.4768*
Psychiatric Beds' Expenditures/1,000	0.3416
Chronic Beds' Expenditures/1,000	-0.0718
General Practitioner Expenditures/1,000	-0.8758*
Dental Expenditures/1,000	0.7854*
Pharmaceutical Expenditures/1,000	0.3765
Optical Expenditures/1,000	0.4647*

\*

Significant at  $p=0.05$  level of confidence



Table G-23

## Analysis of Variance

## Policy Variables by Region 1951

Policy Variable	f
Total Beds/10,000	3.931
Psychiatric Beds/10,000	4.844*
Chronic Beds/10,000	4.093
General Beds/10,000	2.317
Hospital Doctors/10,000	2.405
Hospital Nurses/10,000	2.552
Pharmacists' Outlets/10,000	2.476
Hospital Expenditures/1,000	3.624
General Beds' Expenditures/1,000	2.895
Psychiatric Beds' Expenditures/1,000	3.238
Chronic Beds' Expenditures/1,000	1.356
General Practitioner Expenditures/1,000	4.999*
Dental Expenditures/1,000	17.993*
Pharmaceutical Expenditures/1,000	2.314
Optical Expenditures/1,000	2.342

\*

Significant at  $p=0.05$  level of confidence

Table G-24

## Simple Correlation

## Policy Variables by Crude Death Rates 1951

Policy Variable	r
Total Beds/10,000	-0.4673*
Psychiatric Beds/10,000	-0.6066*
Chronic Beds/10,000	0.4786*
General Beds/10,000	-0.2081
Hospital Doctors/10,000	-0.2895
Hospital Nurses/10,000	-0.4440*
Pharmacists' Outlets/10,000	-0.3856
Hospital Expenditures/1,000	-0.3888
General Beds' Expenditures/1,000	-0.2456
Psychiatric Beds' Expenditures/1,000	-0.5300*
Chronic Beds' Expenditures/1,000	0.3169
General Practitioner Expenditures/1,000	0.8117*
Dental Expenditures/1,000	-0.6362*
Pharmaceutical Expenditures/1,000	-0.4040
Optical Expenditures/1,000	-0.1048

\*

Significant at  $p=0.05$  level of confidence

Table G-25

## Simple Correlation

## Policy Variables by Standardised Mortality Rates 1951

Policy Variable	r
Total Beds/10,000	0.3326
Psychiatric Beds/10,000	0.3028
Chronic Beds/10,000	-0.4362
General Beds/10,000	0.3979
Hospital Doctors/10,000	0.4101
Hospital Nurses/10,000	0.3397
Pharmacists' Outlets/10,000	0.1970
Hospital Expenditures/1,000	0.3302
General Beds' Expenditures/1,000	0.3914
Psychiatric Beds' Expenditures/1,000	0.1673
Chronic Beds' Expenditures/1,000	-0.1140
General Practitioner Expenditures/1,000	-0.5735*
Dental Expenditures/1,000	0.6458*
Pharmaceutical Expenditures/1,000	0.5044*
Optical Expenditures/1,000	0.5713*

\*

Significant at  $p=0.05$  level of confidence

Table G-26

## Simple Correlation

## Policy Variables by Infant Mortality Rates 1951

Policy Variable	r
Total Beds/10,000	0.4808*
Psychiatric Beds/10,000	0.5871*
Chronic Beds/10,000	-0.3616
General Beds/10,000	0.2195
Hospital Doctors/10,000	0.1018
Hospital Nurses/10,000	0.3442
Pharmacists' Outlets/10,000	0.2020
Hospital Expenditures/1,000	0.3925
General Beds' Expenditures/1,000	0.2525
Psychiatric Beds' Expenditures/1,000	0.4978*
Chronic Beds' Expenditures/1,000	-0.2183
General Practitioner Expenditures/1,000	-0.6338*
Dental Expenditures/1,000	0.5798*
Pharmaceutical Expenditures/1,000	0.3430
Optical Expenditures/1,000	0.2949

\* Significant at  $p=0.05$  level of confidence

Table G-27

## Simple Correlation

## Policy Variables by Number of Teaching Hospitals 1951

Policy Variable	r
Total Beds/10,000	0.4394
Psychiatric Beds/10,000	0.3527
Chronic Beds/10,000	-0.3689
General Beds/10,000	0.5183*
Hospital Doctors/10,000	0.7339*
Hospital Nurses/10,000	0.6719*
Pharmacists' Outlets/10,000	0.6149*
Hospital Expenditures/1,000	0.5606*
General Beds' Expenditures/1,000	0.5583*
Psychiatric Beds' Expenditures/1,000	0.4507*
Chronic Beds' Expenditures/1,000	-0.2694
General Practitioner Expenditures/1,000	-0.3073
Dental Expenditures/1,000	0.5314*
Pharmaceutical Expenditures/1,000	0.0973
Optical Expenditures/1,000	0.2361

\*

Significant at  $p=0.05$  level of confidence

**APPENDIX H**

**Partial Correlation**

**Policy Variables by Independent Variables**

**1951, 1961, 1971**

Table H-1

## Partial Correlation

## Policy Variables by Income 1951

Policy Variable	r
Total Beds/10,000	0.3372
Psychiatric Beds/10,000	0.2577
Chronic Beds/10,000	-0.3153
General Beds/10,000	0.2190
Hospital Doctors/10,000	0.5229*
Hospital Nurses/10,000	0.3625
Pharmacists' Outlets/10,000	0.4790*
Hospital Expenditures/1,000	0.2484
General Beds' Expenditures/1,000	0.0291
Psychiatric Beds' Expenditures/1,000	0.1410
General Practitioner Expenditures/1,000	-0.2954
Dental Expenditures/1,000	0.3548

\*

Significant at  $p=0.05$  level of confidence

## Table H-2

## Partial Correlation

## Policy Variables by Urbanisation 1951

Policy Variable	r
Pharmaceutical Expenditures/1,000	0.3368
Optical Expenditures/1,000	0.2479



Table H-3

## Partial Correlation

## Policy Variable by Industrialisation 1951

Policy Variable	r
Total Beds/10,000	0.1198
Psychiatric Beds/10,000	-0.1354
Hospital Nurses/10,000	0.1101
Hospital Expenditures/1,000	0.1692
General Beds' Expenditures/1,000	0.2459
General practitioner Expenditures/1,000	-0.5903*
Dental Expenditures/1,000	0.4784
Optical Expenditures/1,000	0.0963

\*

Significant at  $P=0.05$  level of confidence

**Table H-4****Analysis of Covariance****Policy Variable by Region 1951**

<b>Policy Variable</b>	<b>f</b>
<b>Psychiatric Beds/10,000</b>	<b>0.155</b>
<b>General Practitioner Expenditures/1,000</b>	<b>0.000</b>
<b>Dental Expenditures/1,000</b>	<b>4.267</b>

Table H-5

## Partial Correlation

Policy Variables by Number of Teaching Hospitals 1951

Policy Variable	r
General Beds/10,000	0.3931
Hospital Doctors/10,000	0.6404*
Hospital Nurses/10,000	0.3560
Pharmacists' Outlets/10,000	0.1532
Hospital Expenditures/1,000	0.2818
General Beds' Expenditures/1,000	0.4699
Psychiatric Beds' Expenditures/1,000	0.0831
Dental Expenditures/1,000	0.1768

\*

Significant at  $p=0.05$  level of confidence

Table H-6

## Partial Correlation

Policy Variable by Crude Death Rates 1951

Policy Variable	r
Total Beds/10,000	0.1008
Psychiatric Beds/10,000	-0.1830
Chronic Beds/10,000	0.0888
Hospital Nurses/10,000	0.1167
Psychiatric Beds' Expenditures/1,000	-0.1014
General Practitioner Expenditures/1,000	0.0466
Pharmaceutical Expenditures/1,000	0.2533

Table H-7

## Partial Correlation

## Policy Variables by Standardised Mortality Rates 1951

Policy Variable	r
General Practitioner Expenditures/1,000	0.1871
Dental Expenditures/1,000	-0.1358
Pharmaceutical Expenditures/1,000	0.3154
Optical Expenditures/1,000	0.2874

Table H-8

## Partial Correlation

## Policy Variables by Infant Mortality Rates 1951

Policy Variable	r
Total Beds/10,000	0.1603
Psychiatric Beds/10,000	0.2825
Psychiatric Beds' Expenditures/1,000	0.1951
General Practitioner Expenditures/1,000	-0.0998
Dental Expenditures/1,000	0.1889

Table H-9

## Partial Correlation

## Policy Variables by Income 1961

Policy Variable	r
Total Beds/10,000	0.0362
Psychiatric Beds/10,000	-0.0458
General Beds/10,000	0.1079
Hospital Doctors/10,000	0.3599
Hospital Nurses/10,000	0.0891
Hospital Expenditures/1,000	-0.0786
General Beds' Expenditures/1,000	-0.1247
Psychiatric Beds' Expenditures/1,000	-0.0589
General Practitioner Expenditures/1,000	-0.2288
Dental Expenditures/1,000	0.7701*

\*

Significant at  $p=0.05$  level of confidence

## Table H-10

## Partial Correlation

## Policy Variables by Urbanisation 1961

Policy Variable	r
Hospital Doctors/10,000	-0.2660
Opticians/10,000	0.2465



Table H-11

## Partial Correlation

## Policy Variables by Industrialisation 1961

Policy Variable	r
Chronic Beds/10,000	-0.6046*
Chronic Beds' Expenditures/1,000	-0.6485*
General Practitioner Expenditures/1,000	-0.3292
Dental Expenditures/1,000	-0.6143*

\*

Significant at  $P=0.05$  level of confidence

Table H-12

## Analysis of Variance

## Policy Variables by Region 1961

Policy Variable	f
Chronic Beds/10,000	5.492*
Chronic Beds' Expenditures/1,000	2.813
General Practitioner Expenditures/1,000	0.278
Dental Expenditures/1,000	0.119

\*

Significant at  $p=0.05$  level of confidence

Table H-13

## Partial Correlation

## Policy Variables by Policy Process 1961

Policy Variable	r
Total Beds/10,000	0.8900*
Psychiatric Beds/10,000	0.9339*
Chronic Beds/10,000	0.8738*
General Beds/10,000	0.9090*
Hospital Doctors/10,000	0.8141*
Hospital Nurses/10,000	0.8839*
Hospital Expenditures/1,000	0.9440*
General Beds' Expenditures/1,000	0.9374*
Psychiatric Beds' Expenditures/1,000	0.9765*
Chronic Beds' Expenditures/1,000	0.8726*
General Practitioner Expenditures/1,000	-0.2954

\*

Significant at  $p=0.05$  level of confidence

Table H-14

## Partial Correlation

## Policy Variables by Number of Teaching Hospitals 1961

Policy Variable	r
Chronic Beds/10,000	-0.4088
General Beds/10,000	0.1133
Hospital Doctors/10,000	0.7891*
Hospital Nurses/10,000	0.4456
Hospital Expenditures/1,000	0.4118
General Beds' Expenditures/1,000	0.7073*
Dental Expenditures/1,000	-0.5164

\*

Significant at  $p=0.05$  level of confidence

## Table H-15

## Partial Correlation

## Policy Variables by Crude Death Rates 1961

Policy Variable	r
General Practitioner Expenditures/1,000	0.000

Table H-16

## Partial Correlation

## Policy Variables by Standardised Mortality Rates 1961

Policy Variable	r
Chronic Beds/10,000	0.0302
Opticians/10,000	0.4299
Chronic Beds' Expenditures/1,000	-0.3523
General Practitioner Expenditures/1,000	0.0000
Dental Expenditures/1,000	-0.4763

**Table H-17****Partial Correlation****Policy Variables by Infant Mortality Rates 1960**

<b>Policy Variable</b>	<b>r</b>
<b>Dental Expenditures/1,000</b>	<b>0.5272*</b>

\*

Significant at  $p=0.05$  level of confidence

Table H-18

## Partial Correlation

## Policy Variables by Income 1971

Policy Variable	r
Total Beds/10,000	0.0413
Psychiatric Beds/10,000	0.1745
Chronic Beds/10,000	-0.2122
Hospital Doctors/10,000	0.2806
Hospital Nurses/10,000	0.4385
General Practitioners/10,000	-0.3298
Dentists/10,000	0.6546*
Opticians/10,000	0.4601
Psychiatric Beds' Expenditures/1,000	0.1687
Chronic Beds' Expenditures/1,000	-0.1242
General Practitioner Expenditures/1,000	-0.3058
Dental Expenditures/1,000	0.2301
Pharmaceutical Expenditures/1,000	0.0010

\*

Significant at  $p=0.05$  level of confidence



Table H-19

## Partial Correlation

## Policy Variables by Urbanisation 1971

Policy Variable	r
Hospital Doctors/10,000	-0.3079
General Beds' Expenditures/1,000	0.1661

## Table H-20

## Partial Correlation

## Policy Variables by Industrialisation 1971

Policy Variables	r
General Practitioners/10,000	0.0142
Dentists/10,000	0.1877
General Practitioner Expenditures/1,000	-0.1623
Dental Expenditures/1,000	-0.2203

**Table H-21**  
**Analysis of Covariance**  
**Policy Variables by Region 1971**

<b>Policy Variable</b>	<b>f</b>
<b>General Practitioners/10,000</b>	<b>0.115</b>
<b>Dental Expenditures/1,000</b>	<b>0.158</b>

Table H-22

## Partial Correlation

## Policy Variables by the Policy Process 1971

Policy Variable	r
Total Beds/10,000	0.6492*
Psychiatric Beds/10,000	0.9342*
General Beds/10,000	0.4252
Hospital Doctors/10,000	0.3509
Hospital Nurses/10,000	0.0027
General Practitioners/10,000	0.3181
Dentists/10,000	-0.0027
Hospital Expenditures/1,000	0.5187*
General Beds' Expenditures/1,000	0.3646
Psychiatric Beds' Expenditures/1,000	0.9463*
General Practitioner Expenditures/1,000	0.1969
Dental Expenditures/1,000	0.7762*
Pharmaceutical Expenditures/1,000	0.6045*

\*

Significant at  $p=0.05$  level of confidence

Table H-23

## Partial Correlation

Policy Variables by the Number of  $\hat{T}$  Total Staff 1971

Policy Variable	r
Total Beds/10,000	0.4919
Psychiatric Beds/10,000	0.1846
General Beds/10,000	0.1540
Hospital Doctors/10,000	0.2477
Hospital Nurses/10,000	0.9842*
Dentists/10,000	-0.1383
Opticians/10,000	0.2548
Hospital Expenditures/1,000	0.8006*
General Beds' Expenditures/1,000	0.3338
Dental Expenditures/1,000	0.1337

\*

Significant at  $p=0.05$  level of confidence

Table H-24

## Partial Correlation

## Policy Variable by Number of Teaching Hospitals 1971

Policy Variable	r
Total Beds/10,000	-0.6779*
General Beds/10,000	-0.0776
Hospital Doctors/10,000	0.8601*
Hospital Nurses/10,000	-0.4939
Dentists/10,000	0.4564
Hospital Expenditures/1,000	0.2661
General Beds' Expenditures/1,000	0.2384
Dental Expenditures/1,000	0.3084

\*

Significant at  $p=0.05$  level of confidence

Table H-25

## Partial Correlation

## Policy Variables by Crude Death Rates 1971

Policy Variable	r
Psychiatric Beds/10,000	-0.3602
Chronic Beds/10,000	0.3967
Hospital Doctors/10,000	-0.3748
General Practitioners/10,000	0.0207
Dentists/10,000	-0.0903
Psychiatric Beds' Expenditures/1,000	-0.4599
Chronic Beds' Expenditures/1,000	0.1938
General Practitioner Expenditures/1,000	-0.2291
Dental Expenditures/1,000	-0.5133

**Table H-26****Partial Correlation****Policy Variables by Standardised Mortality Rates 1971**

<b>Policy Variable</b>	<b>r</b>
<b>General Practitioners/10,000</b>	<b>-0.2093</b>



Table H-27

## Partial Correlation

## Policy Variables by Infant Mortality Rates 1971

Policy Variable	r
Psychiatric Beds/10,000	0.2336
Chronic Beds/10,000	-0.0452
General Practitioners/10,000	-0.1645
Dentists/10,000	-0.3562
Opticians/10,000	0.0027
Psychiatric Beds' Expenditures/1,000	-0.2102
Chronic Beds' Expenditures/1,000	-0.1168
General Practitioner Expenditures/1,000	-0.0368
Dental Expenditures/1,000	-0.1205
Pharmaceutical Expenditures/1,000	-0.3309

**APPENDIX I**

**Multiple Correlation**

**Policy Variables with Multiple Independent Variables**

**1961 - 1971**

Table I-1

## Multiple Correlation

## Policy Variables by Health Status 1971

Policy Variable	r
Total Beds/10,000	0.41448
Psychiatric Beds/10,000	0.58802
Chronic Beds/10,000	0.67399
General Beds/10,000	0.43011
Hospital Doctors/10,000	0.53499
Hospital Nurses/10,000	0.38943
General Practitioners/10,000	0.88109*
Pharmacists' Outlets/10,000	0.28914
Dentists/10,000	0.69398
Opticians/10,000	0.44397
Hospital Expenditures/1,000	0.38089
General Beds' Expenditures/1,000	0.36219
Psychiatric Beds' Expenditures/1,000	0.53836
Chronic Beds' Expenditures/1,000	0.55825
General Practitioner Expenditures/1,000	0.90587*
Dental Expenditures/1,000	0.67226
Pharmaceutical Expenditures/1,000	0.67803
Optical Expenditures/1,000	0.43197

\*

Significant at  $p=0.05$  level of confidence

Table I-2

## Multiple Correlation

## Policy Variables by Socio-Economic Status 1971

Policy Variable	r
Total Beds/10,000	0.57148
Psychiatric Beds/10,000	0.68947
Chronic Beds/10,000	0.58815
General Beds/10,000	0.49176
Hospital Doctors/10,000	0.66277
Hospital Nurses/10,000	0.55690
General Practitioners/10,000	0.92295*
Pharmacists' Outlets/10,000	0.62082
Dentists/10,000	0.80193*
Opticians/10,000	0.73801
Hospital Expenditures/1,000	0.57868
General Beds' Expenditures/1,000	0.61227
Psychiatric Beds' Expenditures/1,000	0.70124
Chronic Beds' Expenditures/1,000	0.50533
General Practitioner Expenditures/1,000	0.87982*
Dental Expenditures/1,000	0.77976*
Pharmaceutical Expenditures/1,000	0.69031
Optical Expenditures/1,000	0.44786

\*

Significant at  $p=0.05$  level of confidence

Table I-3

## Multiple Correlation

## Policy Variables by Government Structure 1971

Policy Variable	r
Total Beds/10,000	0.95369*
Psychiatric Beds/10,000	0.96603*
Chronic Beds/10,000	0.23904
General Beds/10,000	0.78059*
Hospital Doctors/10,000	0.95853*
Hospital Nurses/10,000	0.99722*
General Practitioners/10,000	0.93731*
Pharmacists' Outlets/10,000	0.56964
Dentists/10,000	0.70555*
Opticians/10,000	0.46563
Hospital Expenditures/1,000	0.98168*
General Beds' Expenditures/1,000	0.89499*
Psychiatric Beds' Expenditures/1,000	0.97818*
Chronic Beds' Expenditures/1,000	0.05956
General Practitioner Expenditures/1,000	0.91886*
Dental Expenditures/1,000	0.91657*
Pharmaceutical Expenditures/1,000	0.63514
Optical Expenditures/1,000	0.82263*

\*

Significant at  $p=0.05$  level of confidence

Table I-4

## Multiple Correlation

## Policy Variables by Health Status 1961

Policy Variable	r
Total Beds/10,000	0.27988
Psychiatric Beds/10,000	0.34451
Chronic Beds/10,000	0.55274
General Beds/10,000	0.21786
Hospital Doctors/10,000	0.41946
Hospital Nurses/10,000	0.34592
Pharmacists' Outlets/10,000	0.54499
Opticians/10,000	0.59644
Hospital Expenditures/1,000	0.29451
General Beds' Expenditures/1,000	0.34066
Psychiatric Beds' Expenditures/1,000	0.23977
Chronic Beds' Expenditures/1,000	0.51374
General Practitioner Expenditures/1,000	0.83161*
Dental Expenditures/1,000	0.63314
Pharmaceutical Expenditures/1,000	0.63506
Optical Expenditures/1,000	0.44195

\* Significant at  $p=0.05$  level of confidence

Table I-5

## Multiple Correlation

Policy Variables by Government Structure 1961	
Policy Variables	r
Total Beds/10,000	0.94023*
Psychiatric Beds/10,000	0.95233*
Chronic Beds/10,000	0.85715*
General Beds/10,000	0.94703*
Hospital Doctors/10,000	0.95484*
Hospital Nurses/10,000	0.93780*
Pharmacists' Outlets/10,000	0.30065
Opticians/10,000	0.40977
Hospital Expenditures/1,000	0.96800*
General Beds' Expenditures/1,000	0.97482*
Psychiatric Beds' Expenditures/1,000	0.98377*
Chronic Beds' Expenditures/1,000	0.79835*
General Practitioner Expenditures/1,000	0.74178*
Dental Expenditures/1,000	0.88342*
Pharmaceutical Expenditures/1,000	0.44204
Optical Expenditures/1,000	0.68340*

\*

Significant at  $p=0.05$  level of confidence

Table I-6

## Multiple Correlation

## Policy Variables by Socio-Economic Status 1961

Policy Variable	r
Total Beds/10,000	0.54408
Psychiatric Beds/10,000	0.55395
Chronic Beds/10,000	0.68697
General Beds/10,000	0.55496
Hospital Doctors/10,000	0.77162*
Hospital Nurses/10,000	0.57219
Pharmacists' Outlets/10,000	0.51814
Opticians/10,000	0.58919
Hospital Expenditures/1,000	0.58603
General Beds' Expenditures/1,000	0.62994
Psychiatric Beds' Expenditures/1,000	0.53269
Chronic Beds' Expenditures/1,000	0.65699
General Practitioner Expenditures/1,000	0.86099*
Dental Expenditures/1,000	0.86042*
Pharmaceutical Expenditures/1,000	0.25230
Optical Expenditures/1,000	0.24675

\*

Significant at  $p=0.05$  level of confidence



**APPENDIX J**

**Multiple-Partial Correlation**

**Policy Variables with Multiple Independent Variables**

**1961 - 1971**

Table J-1

## Multiple-Partial Correlation

## Policy Variables with Multiple Independent Variables 1971

Policy Variable	health status	ses	government structure
Total Beds/10,000	.2689	.3268	.8915*
Psychiatric Beds/10,000	.3417	.2857	.9308*
Chronic Beds/10,000	.4929*	.4048	.2227
General Beds/10,000	.5059*	.3822	.7633*
Hospital Doctors/10,000	.3051	.3270	.8717*
Hospital Nurses/10,000	.2145	.0967	.9935*
General Practitioners/10,000	.0718	.2000	.3094*
Opticians/10,000	.3641	.6930*	.3113*
Pharmaceutical Outlets/10,000	.5847*	.6432*	.2085
Dentists/10,000	.2629	.4253*	.3772
Hospital Expenditures/1,000	.6616	.7220	.9778*
General Beds' Exp./1,000	.2722	.3074	.7712*
Psychiatric Beds' Exp./1,000	.6146	.5649	.9719*
Chronic Beds' Exp./1,000	.4544	.4563*	.2809
General Practitioners Exp./1,000	.3541*	.2371	.1483
Dental Expenditures/1,000	.3925	.2636	.5481*
Pharmaceutical Exp./1,000	.5354*	.4715	.3912
Optical Expenditures/1,000	.7924	.7666	.9314*

\* Highest percentage of unexplained variation explained of the three independent variables

Table J-2

## Multiple-Partial Correlation

## Policy Variables with Multiple Independent Variables 1961

Policy Variable	health status	ses	government structure
Total Beds/10,000	.6180	.5680	.9416*
Psychiatric Beds/10,000	.6599	.4220	.9631*
Chronic Beds/10,000	.1631	.5087	.8610*
General Beds/10,000	.2630	.4529	.9327*
Hospital Doctors/10,000	.5080	.5816	.6668*
Hospital Nurses/10,000	.6090	.5200	.9101*
Pharmacists' Outlets/10,000	.5081*	.3947	.1552
Opticians/10,000	.0892	.3006*	.1683
Hospital Expenditures/1,000	.5413	.5585	.9595*
General Beds' Exp./1,000	.5562	.5814	.9606*
Chronic Beds' Exp./1,000	.3943	.5064	.8241*
Psychiatric Beds' Exp./1,000	.4947	.3858	.9772*
General Beds' Exp./1,000	.2656	.2912*	.1660
Dental Expenditures/1,000	.4312	.7405*	.6323
Pharmaceutical Exp./1,000	.6139*	.4920	.4922
Optical Expenditures/1,000	.5487	.3085	.6502*

\* Highest percentage of unexplained variation explained of the three independent variables

**Appendix K**  
**Policy Variables and Policy Model**

Table K-1

## Policy Variables and Policy Model

1971

Policy Variables	4 Most Powerful Independent Variables	% Variation Explained 4 Variables	% Variation Explained All Variables
Total Beds/ 10,000	Previous Expenditure, Teaching Hospitals Total Staff Urbanisation	92.16	93.71
Psychiatric Beds/ 10,000	Previous Expenditure, Crude Death Rate, Teaching Hospitals, Total Staff	96.57	98.09
Chronic Beds/ 10,000	Crude Death Rate, Income, Previous Expenditure Urbanisation	59.85	71.30
General Beds/ 10,000	Previous Expenditure, SMR, Urbanisation Infant Mortality Rate	78.91	86.71
Hospital Doctors/ 10,000	Teaching Hospitals, Previous Expenditures Crude Death Rate Income	95.82	96.34

<b>Hospital Nurses/ 10,000</b>	<b>Total Staff, Infant Mortality Rate, Teaching Hospitals Industrialisation</b>	<b>99.72</b>	<b>99.74</b>
<b>General Practitioners/ 10,000</b>	<b>Previous Expenditures, Total Staff, Income, Industrialisation</b>	<b>91.40</b>	<b>92.64</b>
<b>Opticians/ 10,000</b>	<b>Income Region Previous Expenditures Infant Mortality Rate</b>	<b>68.23</b>	<b>77.84</b>
<b>Pharmaceutical Chemists' Outlets/ 10,000</b>	<b>Total Staff Income Infant Mortality Rate SMR</b>	<b>69.74</b>	<b>81.17</b>
<b>Dentists/ 10,000</b>	<b>Income Teaching Hospitals SMR Region</b>	<b>80.71</b>	<b>85.07</b>
<b>Hospital Costs/ 1,000</b>	<b>Total Staff Previous Expenditure Urbanisation SMR</b>	<b>98.70</b>	<b>99.21</b>
<b>General Beds' Costs/ 1,000</b>	<b>Previous Expenditures Region Teaching Hospitals Total Staff</b>	<b>85.85</b>	<b>90.97</b>

<b>Psychiatric Beds' Costs/ 1,000</b>	<b>Previous Expenditure, Total Staff, Crude Death Rate, Teaching Hospitals</b>	<b>97.13</b>	<b>98.39</b>
<b>Chronic Beds' Costs/ 1,000</b>	<b>Infant Mortality Rate Industrialisation Crude Death Rate Teaching Hospitals</b>	<b>42.29</b>	<b>63.98</b>
<b>General Practitioner Expenditures/ 1,000</b>	<b>Previous Expenditures, Crude Death Rate, Income, SMR</b>	<b>89.20</b>	<b>91.60</b>
<b>Dental Expenditures/ 1,000</b>	<b>Previous Expenditures, Crude Death Rate, Total Staff, Teaching Hospitals</b>	<b>87.89</b>	<b>91.20</b>
<b>Pharmaceutical Expenditures/ 1,000</b>	<b>Previous Expenditures, Infant Mortality Rate, Region, Urbanisation</b>	<b>66.19</b>	<b>76.62</b>
<b>Optical Expenditures/ 1,000</b>	<b>Previous Expenditures, SMR, Urbanisation, Crude Death Rate</b>	<b>84.73</b>	<b>95.70</b>

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