

GENERAL MANPOWER STOCK SIMULATOR (GMSS)

Simulations of Possible Numbers of Physicians
in British Columbia to 1993

Report S:6
Division of Health Services
Research and Development
Health Sciences Centre
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July, 1979

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Prepared by:
G. Muir, BSc.
A.J. Stark, Ph.D.

LIST OF FIGURES

<u>Figures</u>		Page
1	GMSS Conceptual Model	1
2	Map of Health Manpower Research Unit Health Regions	2

LIST OF TABLES

<u>Tables</u>		
1	GMSS Projections of Total Numbers of Directory Active Physicians B.C., Years 1979 - 1993	6
2	GMSS Projections of Total Numbers of Directory Active General Practitioner Physicians in B.C., Years 1979 - 1993	7
3	GMSS Projections of Total Numbers of Directory Active Specialist Physicians in B.C., Years 1979 - 1993	8

LIST OF GRAPHS

<u>Graphs</u>		
1	Simulation of Directory Active Physicians, Projection (88)	14
2	Simulation of Directory Active Physicians per 1,000,000 Population, Projection (88)	15
3	Simulation of Directory Active Physicians, Projection (88ATT)	16
4	Simulation of Directory Active Physicians per 1,000,000 Population, Projection (88ATT)	17
5	Simulation of Directory Active Physicians, Projection (120A)	18
6	Simulation of Directory Active Physicians per 1,000,000 Population, Projection (120A)	19
7	Simulation of Directory Active Physicians, Projection (120B)	20
8	Simulation of Directory Active Physicians per 1,000,000 Population, Projection (120B)	21

LIST OF GRAPHS cont'd

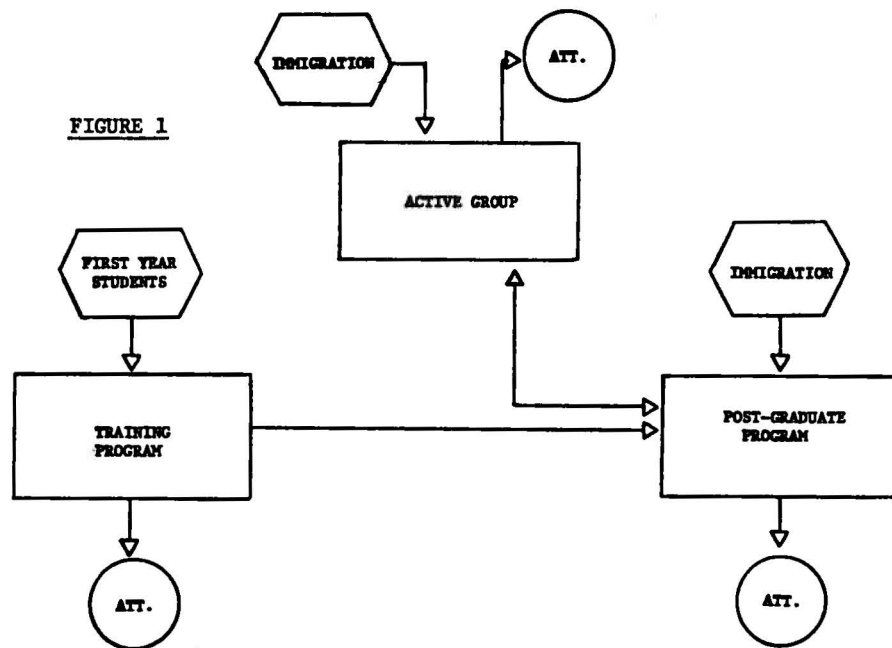
<u>Graphs</u>	<u>Page</u>
9 Simulation of Directory Active Physicians, Projection (120C)	22
10 Simulation of Directory Active Physicians per 1,000,000 Population, Projection (120C)	23
11 Simulation of Directory Active Physicians, Projection (120D)	24
12 Simulation of Directory Active Physicians per 1,000,000 Population, Projection (120D)	25
13 Simulation of Directory Active Physicians, Projection (160A)	26
14 Simulation of Directory Active Physicians per 1,000,000 Population, Projection (160A)	27
15 Simulation of Directory Active Physicians, Projection (160B)	28
16 Simulation of Directory Active Physicians per 1,000,000 Population, Projection (160B)	29
17 Simulation of Directory Active Physicians, Projection (160C)	30
18 Simulation of Directory Active Physicians per 1,000,000 Population Projection (160C)	31
19 Simulation of Directory Active Physicians, Projection (160D)	32
20 Simulation of Directory Active Physicians per 1,000,000 Population, Projection (160D)	33

INTRODUCTION

In these analyses the General Manpower Stock Simulator (GMSS)¹ has been used to simulate the numbers of physicians in British Columbia to the year 1993. The model employs Markovian transitional probabilities conditional upon location, age and classification (General Practitioner or Specialist) of physicians to age the physician population and to investigate the effect of various policy options upon the stock of physicians. GMSS, then, simulated those factors known to influence the stock of physicians in British Columbia over time and it is on this experience and selected policy options that the future stock is projected.

METHODOLOGY

Using four years of data derived from PHYSFILE², the official roster of the College of Physicians and Surgeons of British Columbia, average annual transitional probabilities of movement to and from each state of the system were calculated. The following conceptual model was used:



¹ HMRU 75:8

² PHYSFILE is a computer-based file of all physicians licensed in the province of British Columbia since April, 1970 by the College of Physicians and Surgeons of British Columbia. The file is maintained by the Health Manpower Research Unit, University of British Columbia.

Regional Hospital Districts

- 1 East Kootenay
- 2 Central Kootenay
- 2A Kootenay Boundary
- 3 Okanagan-Similkameen
- 4 Columbia-Shuswap
- 5 North Okanagan
- 6 Central Okanagan
- 7 Thompson-Nicola
- 8 Cariboo
- 9 Squamish-Lillooet
- 10 Fraser-Cheam
- 11 Central Fraser Valley
- 12 Dewdney-Alouette
- 13 Greater Vancouver
- 14 Sunshine Coast
- 15 Powell River
- 16 Mount Waddington
- 16A Central Coast
- 17 Skeena-Queen Charlotte
- 18 Kitimat-Stikine
- 19 Bulkley-Nechako
- 20 Fraser-Fort George
- 21 Peace River-Liard
- 22 Stikine
- 23 Capital
- 24 Cowichan Valley
- 25 Nanaimo
- 26 Alberni-Clayoquot
- 27 Comox-Strathcona

HMRU HEALTH REGIONS*

BORDER EAST	- 1
CENTRAL	- 2
NORTH	- 3
ISLAND COAST	- 4
GYRD	- 5
CAPITAL	- 6

* Regional Hospital Districts have been arbitrarily grouped by the Health Manpower Research Unit in order to provide sufficient base for analysis of smaller manpower groups.

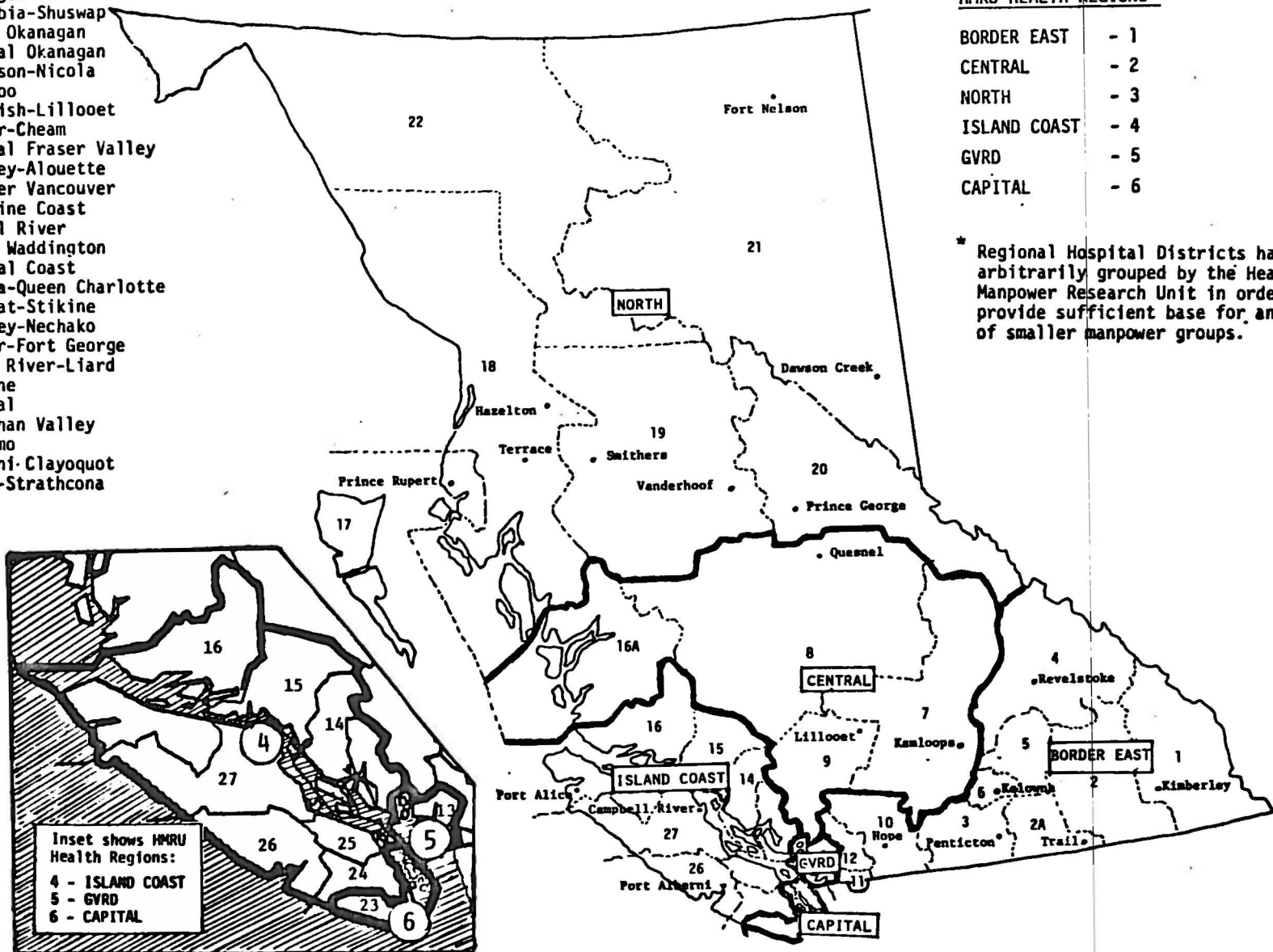


Figure 2

For the purpose of these analyses the stock of physicians was grouped into two classifications, General Practitioners and Specialists; and into six regions (see Figure 2, page 2) which are amalgamations of the Regional Hospital Districts. This grouping of regions provides sufficient numbers for analyses and protects confidentiality.

OPTIONS

The following ten options were simulated. The options are examples of the potential of the model. They are not intended to be all-inclusive and, in fact, none may be current practice or recommended policy in this province at the present time. Readers may wish to offer additional suggestions for options which might be tested.

- 1.(88)¹
 - a - U.B.C. Medical School enrolment remains at 88 students per year
 - b - Immigration² remains at 270 physicians per year, present experience
 - c - No increase in the number of post-graduate positions available in B.C.
- 2.(88ATT)
 - a - As in (88) above
 - b - As in (88) above, but with the addition of an arbitrary attrition³ rate of 15 percent per year for those physicians aged 65 or over. The arbitrary figure of approximately 15 percent maintains the proportion of Directory Active Physicians aged 65 and over at a constant rate throughout the simulation. Use of current trend data tends to increase the proportion of the work force who would be in this age group.
 - c - As in (88) above
- 3.(120A)
 - a - Immigration remains at 270 physicians per year
 - b - U.B.C. Medical School enrolment increases to
 - 100 in 1979
 - 120 in 1980
 - c - Number of post-graduate positions available increases to
 - 414 in 1982
 - 420 in 1983
 - 430 in 1984

¹ The bracketed number refers to the title of the simulation. It appears as an identifier in the tables, figures and discussion contained in this report.

² In this discussion, and in using the model, immigration includes all physicians who became Directory Active in the Province of B.C. in the given study year - whether from other provinces or from other countries.

³ Attrition is the loss of practitioners from the system, i.e. those physicians who emigrate or become inactive.

- 4.(160A) a - Immigration remains at 270 physicians per year
- b - U.B.C. Medical School Enrolment increases to
- 100 in 1979
 - 120 in 1980
 - 160 in 1981
- c - Number of post-graduate positions available increases to
- 414 in 1982
 - 420 in 1983
 - 430 in 1984
 - 450 in 1985
- 5.(120B) a - Immigration increases 3 physicians per year to 290 (to account for B.C. Graduates returning to B.C. -- assumes that 75% of graduates who leave will return)
- b - U.B.C. Medical School Enrolment increases as in (120A)
- c - Number of post-graduate positions available increases as in (120A)
- 6.(160B) a - Immigration increases 4 physicians per year to 311 (to account for B.C. Graduates returning to B.C.)
- b - U.B.C. Medical School Enrolment increases as in (160A)
- c - Number of post-graduate positions available increases as in (160A)
- 7.(120C) a - Immigration increases as in (120B)
- b - U.B.C. Medical School Enrolment increases as in (120A)
- c - Number of post-graduate positions available increases as in (120A)
- d - Attrition decreases by 2% per year until decrease of 20% in the current attrition rate has occurred
- 8.(160C) a - Immigration increases as in projection (160B)
- b - U.B.C. Medical School Enrolment increases as in (160A)
- c - Number of post-graduate positions available increases as in (160A)
- d - Attrition decreases as in (120C)

- 9.(120D) a - Immigration increases as in (120B)
 - b - U.B.C. Medical School Enrolment increases as in (120A)
 - c - Number of post-graduate positions remains constant as in (88)
- 10.(160D) a - Immigration increases as in (160B)
 - b - U.B.C. Medical School Enrolment increases as in (160A)
 - c - Number of post-graduate positions remains constant as in (88)

RESULTS OF SIMULATIONS

Tables 1, 2, and 3, pages 6, 7, & 8 provide a summary of the data generated in the aforementioned simulations. Column labels are as in the Options Section and the body of the table describes total numbers of physicians by year. It should be noted that years through 1978 are real data, not simulations. The variables used in the model are described following the tables.

INPUT DATA TO GMSS

- B1* - Population Data - Population projections used in this model were obtained from "British Columbia Population Estimates, 1974 - 1996" (B.C. Research). The years between 1981 and 1986, and between 1986 and 1993 are linear projections from these base years. It should be noted that regional populations based on the 1976 census were not available at the time this report was completed. There may then be variations in the population data when more recent information becomes available.
- C7 - Attrition from Training Program - The attrition rate of 68.7% is inflated due to the fact that a large proportion of the U.B.C. Medical School graduates complete their internship and/or post-graduate work outside British Columbia and then return to this province. For purposes of the model, these persons on return are considered to be immigrant.
- C8-C37 - Medical School Enrolment - This indicates the number expected to be accepted into the U.B.C. Medical School for each of the projected years.

* B1, C7, etc. are the actual variable names used in the GMSS simulations.

Table 1: GMSS Projections of Total Numbers of Directory Active Physicians B.C., Years 1979 - 1993

Year	Projection									
	(88)*	(88ATT)	(120A)	(160A)	(120B)	(160B)	(120C)	(160C)	(120D)	(160D)
1975**	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116
1976**	4,276	4,276	4,276	4,276	4,276	4,276	4,276	4,276	4,276	4,276
1977**	4,470	4,470	4,470	4,470	4,470	4,470	4,470	4,470	4,470	4,470
1978**	4,639	4,639	4,639	4,639	4,639	4,639	4,639	4,639	4,639	4,639
1979	4,817	4,787	4,817	4,817	4,821	4,821	4,823	4,825	4,821	4,821
1980	4,955	4,896	4,955	4,955	4,963	4,967	4,976	4,982	4,963	4,967
1981	5,104	5,015	5,104	5,104	5,117	5,124	5,145	5,154	5,117	5,124
1982	5,251	5,133	5,251	5,251	5,275	5,283	5,316	5,332	5,275	5,283
1983	5,390	5,244	5,390	5,390	5,425	5,437	5,487	5,505	5,425	5,437
1984	5,525	5,350	5,528	5,528	5,579	5,595	5,666	5,687	5,576	5,592
1985	5,652	5,447	5,661	5,661	5,729	5,754	5,848	5,874	5,721	5,745
1986	5,771	5,539	5,785	5,790	5,866	5,904	6,020	6,063	5,856	5,885
1987	5,883	5,625	5,903	5,911	5,994	6,051	6,193	6,254	5,977	6,022
1988	5,992	5,709	6,017	6,034	6,119	6,202	6,370	6,451	6,099	6,163
1989	6,095	5,785	6,128	6,150	6,245	6,344	6,533	6,641	6,221	6,293
1990	6,197	5,859	6,233	6,261	6,362	6,480	6,693	6,821	6,332	6,421
1991	6,293	5,930	6,333	6,363	6,475	6,609	6,845	6,989	6,441	6,545
1992	6,386	5,998	6,430	6,466	6,580	6,738	6,998	7,157	6,544	6,665
1993	6,471	6,058	6,519	6,559	6,679	6,860	7,136	7,315	6,643	6,774

* Refer to pages 3,4, & 5 for definition of options included in each projection.

** Historical data for the years 1975 - 1978 reflects real experience and therefore does not change across projections.

Table 2: GMSS Projections of Total Numbers of Directory Active General Practitioner Physicians in B.C., Years 1979 - 1993

Year	Projection									
	(88)*	(88ATT)	(120A)	(160A)	(120B)	(160B)	(120C)	(160C)	(120D)	(160D)
1975**	2122	2122	2122	2122	2122	2122	2122	2122	2122	2122
1976**	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170
1977**	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
1978**	2294	2294	2294	2294	2294	2294	2294	2294	2294	2294
1979	2309	2295	2309	2309	2312	2312	2313	2315	2312	2312
1980	2322	2297	2322	2322	2329	2329	2334	2338	2329	2329
1981	2333	2296	2333	2333	2343	2344	2354	2361	2343	2344
1982	2344	2296	2344	2344	2362	2364	2382	2391	2362	2364
1983	2358	2301	2358	2358	2384	2389	2416	2425	2384	2389
1984	2375	2309	2377	2377	2411	2420	2455	2466	2409	2418
1985	2388	2312	2394	2394	2434	2448	2492	2507	2430	2444
1986	2399	2316	2407	2410	2452	2474	2527	2552	2446	2464
1987	2408	2319	2418	2424	2467	2502	2566	2600	2459	2486
1988	2419	2323	2430	2441	2484	2532	2605	2653	2475	2512
1989	2429	2327	2444	2457	2504	2559	2640	2701	2493	2535
1990	2438	2329	2454	2469	2519	2586	2674	2744	2506	2558
1991	2449	2334	2466	2481	2534	2608	2703	2780	2520	2580
1992	2457	2338	2475	2492	2546	2631	2734	2817	2531	2599
1993	2464	2340	2483	2502	2559	2654	2761	2853	2543	2616

* Refer to pages 3,4, & 5 for definition of options included in each projection.

** Historical data for the years 1975 - 1978 reflects real experience and therefore does not change across projections.

Table 3: GMSS Projections of Total Numbers of Directory Active Specialist Physicians in B.C., Years 1979 - 1993

Year	Projection									
	(88)*	(88ATT)	(120A)	(160A)	(120B)	(160B)	(120C)	(160C)	(120D)	(160D)
1975**	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994
1976**	2106	2106	2106	2106	2106	2106	2106	2106	2106	2106
1977**	2224	2224	2224	2224	2224	2224	2224	2224	2224	2224
1978**	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345
1979	2508	2492	2508	2508	2509	2509	2510	2510	2509	2509
1980	2633	2599	2633	2633	2634	2638	2642	2644	2634	2638
1981	2771	2719	2771	2771	2774	2780	2791	2793	2774	2780
1982	2907	2837	2907	2907	2913	2919	2934	2941	2913	2919
1983	3032	2943	3032	3032	3041	3048	3071	3080	3041	3048
1984	3150	3041	3151	3151	3168	3175	3211	3221	3167	3174
1985	3264	3135	3267	3267	3295	3306	3356	3367	3291	3301
1986	3372	3223	3378	3380	3414	3430	3493	3511	3410	3421
1987	3475	3306	3485	3487	3527	3549	3627	3654	3518	3536
1988	3573	3386	3587	3593	3635	3670	3765	3798	3624	3651
1989	3666	3458	3684	3693	3741	3785	3893	3940	3728	3758
1990	3759	3530	3779	3792	3843	3894	4019	4077	3826	3863
1991	3844	3596	3867	3882	3941	4001	4142	4209	3921	3965
1992	3929	3660	3955	3974	4034	4107	4264	4340	4013	4066
1993	4007	3718	4036	4057	4120	4206	4375	4462	4100	4158

* Refer to pages 3,4, & 5 for definition of options included in each projection.

** Historical data for the years 1975 - 1978 reflects real experience and therefore does not change across projections.

- C50 - Distribution of Graduates - This indicates that all U.B.C. Medical School graduates who remain after the attrition rate (C7) has been applied become post-graduate students. This total includes those in internships.
- C300 - Distribution of U.B.C. Medical School Graduates becoming Post-graduates - This indicates that 825 of each 1,000 graduates becoming post-graduate are in internships of one year and 175 of each 1,000 graduates are entering specialist training.
- C350 - Entry to Post-graduate Education - This indicates that all U.B.C. Medical School graduates enter the first year of a post-graduate program.
- C401 - Age Distribution of Medical School Graduates - This gives the model the age distribution of medical school graduates by classification of study program. (General Practitioner or Specialist).
- C501 - Historical Data - This gives the model historical data for the years 1975 through 1978. These data are not used in projections but are included in the summary tables as they reflect actual past experience.
- D1 - Directory Active Physicians - This supplies to GMSS the present number of Directory Active Physicians by specialty (General Practitioner/Specialist) by age group by region.
- D100 - Annual Immigration into Directory Active Physicians - This variable includes in the study all physicians entering British Columbia. These may be U.B.C. Medical School graduates who leave the province and then return to British Columbia.
- D102 - Distribution of Immigrant Physicians in Number per 1,000 Directory Active Physicians - This variable distributes the number of immigrant physicians specified in D100 by age group by region of destination by specialty, based on past experience.
- D201 - Regional Transitions in Number per 1,000 Directory Active Physicians - This variable gives the rate of intra-provincial migration by specialty (General Practitioner/Specialist) of Directory Active Physicians.
- D260 - Classification Transitions in Number per 1,000 Directory Active Physicians - These data give the model the rate of transition between General Practice classification and Specialty classification by region.
- D300 - Index of Attrition - This variable allows the research to indicate whether the data given in D301 will change during the simulation and how it will change. (e.g., decrease the attrition rate during the simulation).

- D301 - Present Attrition Rate of Directory Active Physicians - These data give the present attrition rate of Directory Active Physicians by age by region by classification (General Practitioner/Specialist).
- D500 - Index of Transition to Post-graduate Education - This variable allows the researcher to indicate how the data given in D501 will change during the simulation.
- D501 - Present Rate of Transition to Post-graduate Education - The current rate per 1,000 Directory Active Physicians of transition from Directory Active to Post-graduate education is read.
- D531 - Distribution of New Post-graduates - This is the distribution of Directory Active Physicians going to Post-graduate education by present classification by classification of study program and by year of study.
- D560 - Distribution of New Post-graduates - This is the distribution of Directory Active Physicians going to Post-graduate education by region of origin by location (region) of Post-graduate school. Greater Vancouver Regional District (G.V.R.D.) is the only region* offering Post-graduate education and therefore all practitioners in this category will show in this region.
- D700 - Historical Data on Directory Active Physicians - These data are used in the graphs (Appendix A) to show the real experience for the years 1975 through 1978. They are not used in simulation.
- F1 - Number of Years of Post-graduate Training - This variable sets the length of Post-graduate educational programs at a maximum of five years.
- F2 - Present Number of Post-graduate Physicians - This is the present number of Post-graduates in the training program by classification of study (General Practitioner/Specialist) by year of study and region. As previously noted all Post-graduates are shown in the G.V.R.D.; the 88 practitioners in first year of General Practitioner classification are interns. The 12 practitioners in the second year of the General Practitioner classification are those in the second year of the Family Practice Program - the number of physicians in the five years of the Specialty classification is shown by year of training towards Specialty certification.
- F201 - Regional Transitions in Number per 1,000 Post-graduate Physicians - There are no regional transitions.

* The small number of Interns located in Capital Region will not affect the projections.

- F301 - Classification Transition in Number per 1,000 per Post-graduate Physicians - These data indicate that all practitioners in the Post-graduate program in the General Practice classification remain in that classification as do those in the Specialty classification.
- F400 - Index of Attrition - This variable indicates to the model that attrition data given in F401 will not change during the simulation.
- F401 - Present Attrition Rate of Post-graduates - Present rate of attrition from the Post-graduate education programs by classification by year of study is shown.
- F500 - Index of Transition to Directory Active Physician - This variable indicates to the model that the rate of transition given in D501 will not change during the simulation.
- F501 - Present Rate of Transition to Directory Active Physician - These data are the current rate of transition to Directory Active Physician by classification by year of study. The rate is in number per 1,000 Post-graduate Physicians. The rate is applied after the anticipated attrition has been calculated and removed.

As previously noted, in this model the only way that physicians who have finished their Post-graduate education may return to the Directory Active group is through this variable. It is for this reason that the rate in the final year of training in each classification is 100% allowing all practitioners entry into the Directory Active Group.

- F551 - Distribution of Post-graduates becoming Directory Active Physicians - These data indicate that all practitioners returning to the Directory Active group before completing five years of Post-graduate education will return in the General Practitioner classification. Those who return after the fifth year of Post-graduate training return to the Active group in the Specialty classification.
- F575 - Distribution of Post-graduates becoming Directory Active Physicians - These data indicate to which region the practitioners moving from Post-graduate to Directory Active return. This distribution is shown as number per 1,000 Post-graduates returning to the Active group.
- F700 - Age Distribution of Graduates by Classification - These data indicate the age distribution in number per 1,000 Post-graduate physicians returning to the Directory Active group by classification (General Practitioner/Specialist).

- F800 - Projected Number of Post-graduate Positions Available - These data are the number of Post-graduate training positions which will be available for each projection year by classification and region.
- F850 - Number of Excess Post-graduate Positions filled by Immigrant Physicians - This is the number of Post-graduate positions available once those which will be filled from within the system (province) are taken. It assumes that the remainder will be filled by immigrant physicians. The anticipated number of positions which will be filled from within the system either by the last year's U.B.C. Medical School graduates or by movement to and from the Directory Active Physicians (B.C.) is determined. The number of excess positions is then determined by comparing this figure to the number of physicians available as given in variable F800. Variable F850 is the number per 1,000 excess positions which will be filled by immigrants.
- F875 - Distribution of Excess Positions filled by Immigrants - These data determine the distribution of immigrant physicians filling excess Post-graduate positions by year of training by region by classification of study. The data are shown in number per 1,000 excess positions.
- F900 - Historical Data on Post-graduate Education - These data are the number of Post-graduates by classification by region by historical year (1975 through 1978). They are not used in the simulation but may be helpful in identifying trends in the projections.

In summary, the preceding information has been included for explanation of the data. The actual analyses produced are not included in this technical report but Tables 1, 2, and 3, pages 6, 7, & 8, show the projected total number of physicians in British Columbia arising from the use of this model when the aforementioned variables and options are used.

The summary graphs arising from each projection are included commencing on page 14. In each case, the first graph (1) displays the actual number of physicians and the second (2) the number of physicians per million population. The graphs by region are of interest both for projected total number of physicians per one million population (T) and for the displayed relationships of number of General Practitioners (G) to Specialists (S) over time. It is noted for example (Graph 88/1) that using projection (88) it is anticipated that in Border East Region there will be, by 1987 virtually equal numbers of General Practitioners and Specialists (approximately 800 of each per 1 million population (Graph 88/2). After this time the number of Specialists in this region is projected to exceed the number of General Practitioners although total number (T) appears to level at approximately 1,600 per 1 million population.

Alternately, in the region labeled North, using projection (88), the number of General Practitioners continues to exceed the number of Specialists, with Specialists projected at approximately 300 per 1 million population and General Practitioners showing a decrease from approximately 600 per million persons in 1979 to approximately 425 per million in 1990. Total number of physicians reflects these projections. The difficulties in obtaining accurate population projections have already been mentioned.

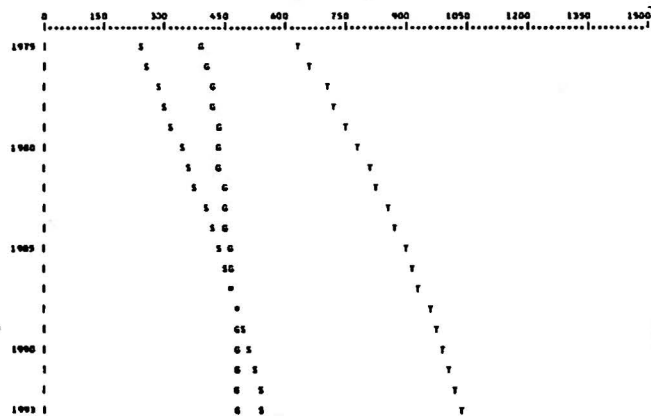
It should be reiterated that these projections reflect only past experience and the options included in the model. The reader is encouraged to examine the output from each simulation together with the included options (pages 3 - 5). Finally, these simulations should not be used to project actual numbers of physicians in B.C., but rather to examine the effect various options have on the physician stock in the province. For example, if, as in projection (88ATT), the anticipated 15 percent attrition per year of physicians aged 65 years and over actually occurs, there will be five percent fewer Directory Active physicians in B.C. in 1989 than if all present conditions (88) pertain.

*
$$\frac{6,095 - 5,785}{6,095} \times 100$$

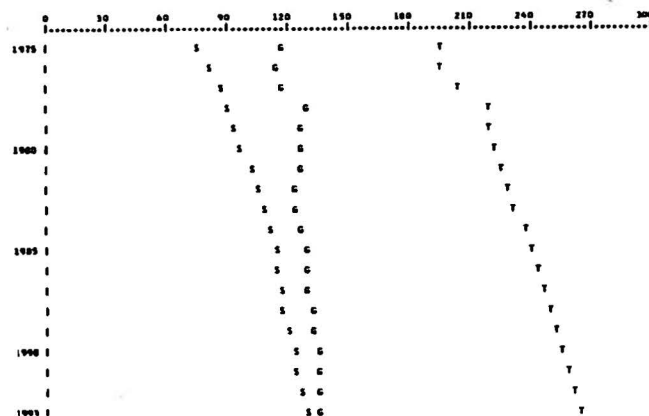
Simulation of Directory Active Physicians

Projection (88)

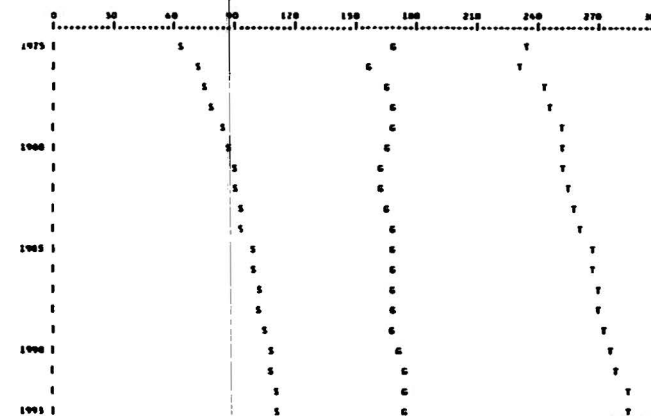
Border East



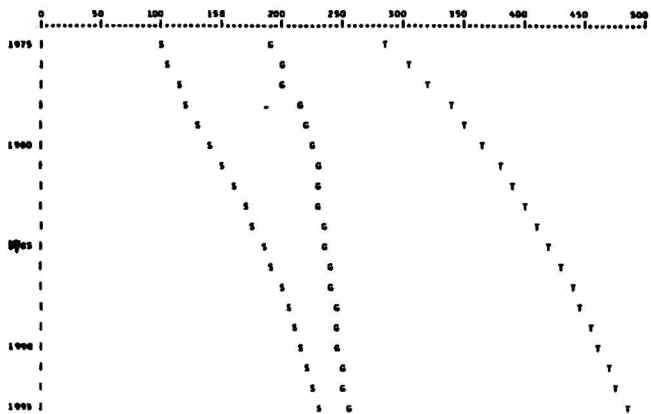
Central



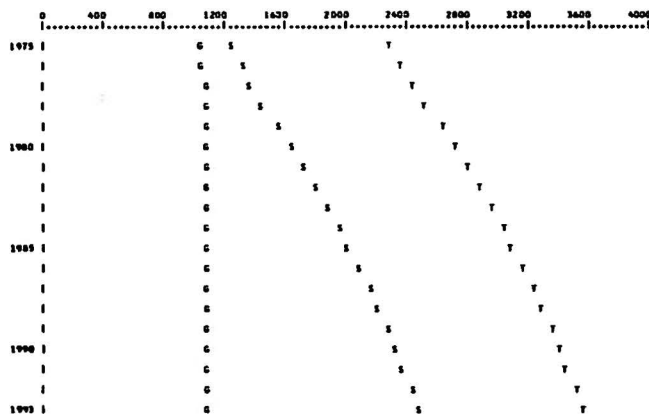
North



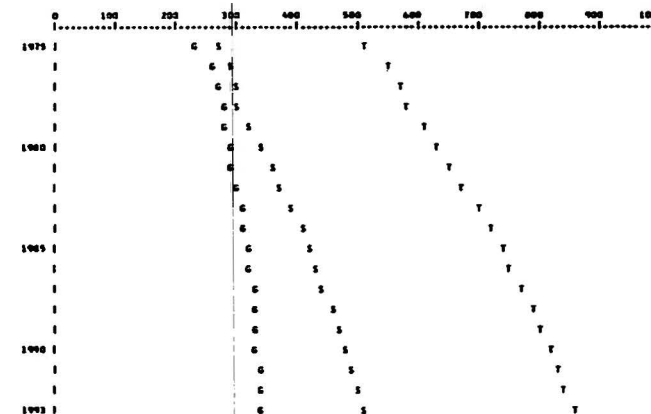
Island Coast



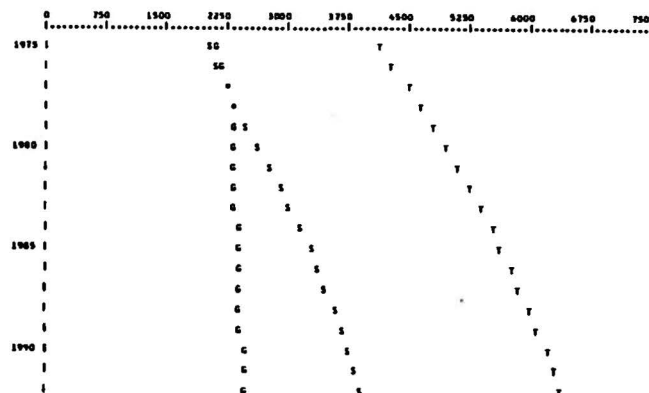
G.V.R.D.



Capital



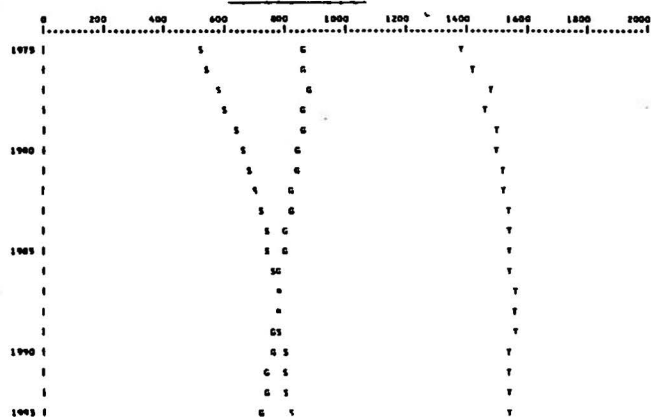
Total



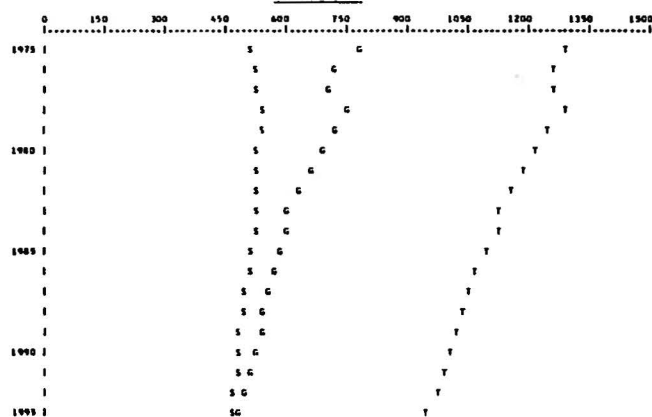
G = G.P.
S = Specialist
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population
Projection (88)

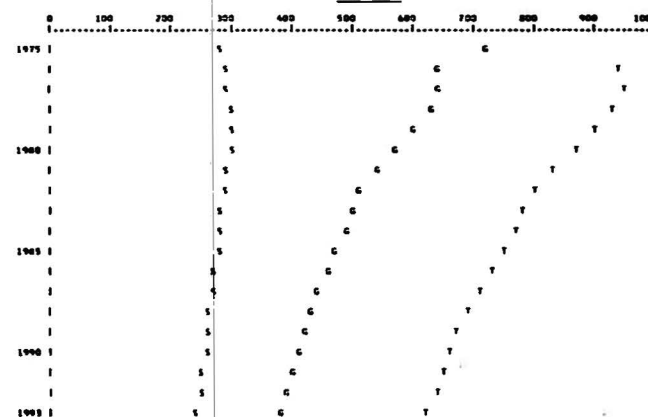
Border East



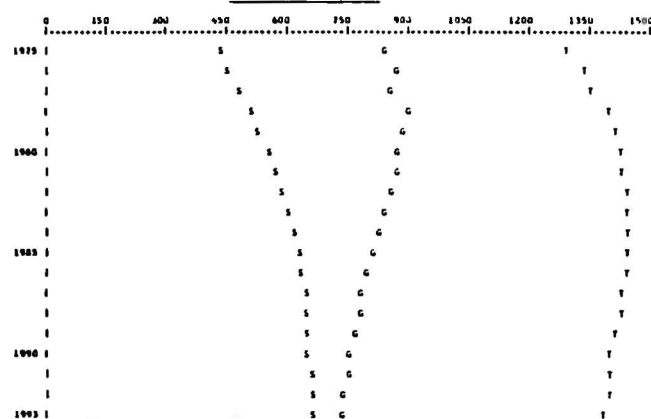
Central



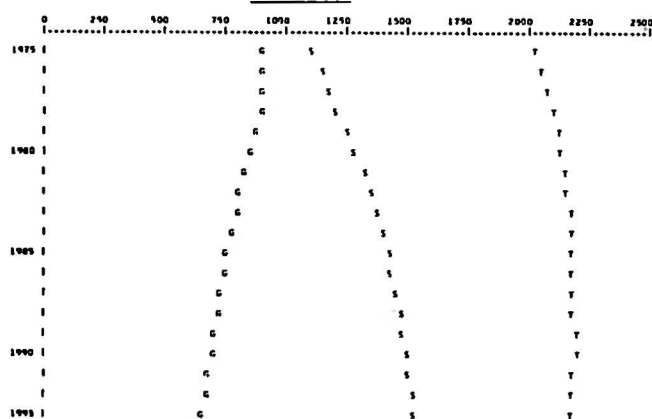
North



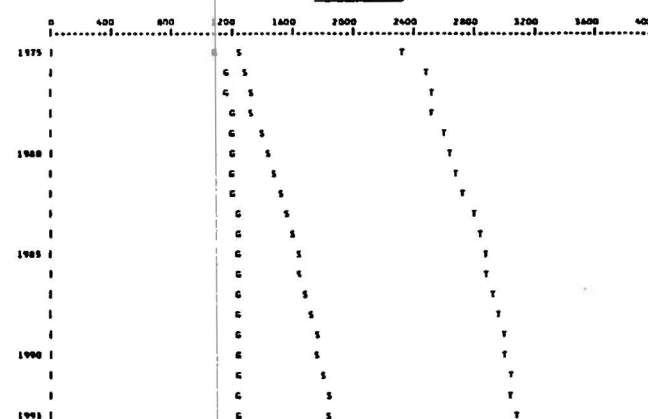
Island Coast



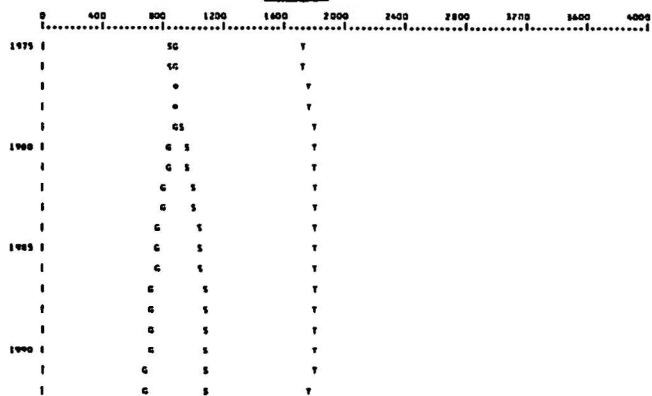
G.V.R.D.



Capital



Total



G = G.P.

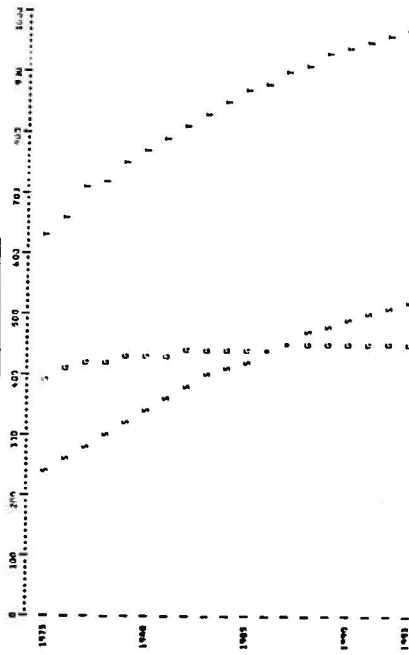
S = Specialist

T = Total

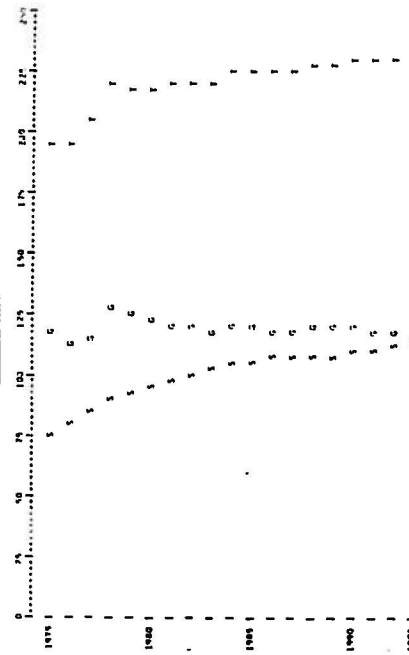
Simulation of Directory Active Physicians

Projection (88ATT)

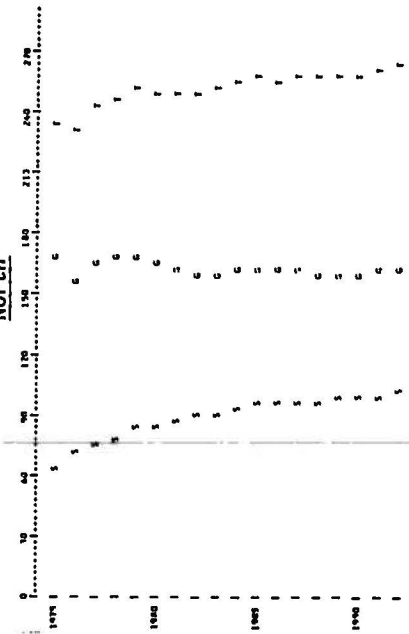
Border East



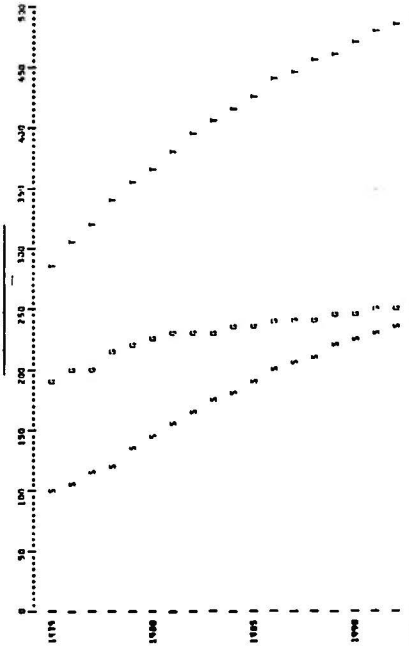
Central



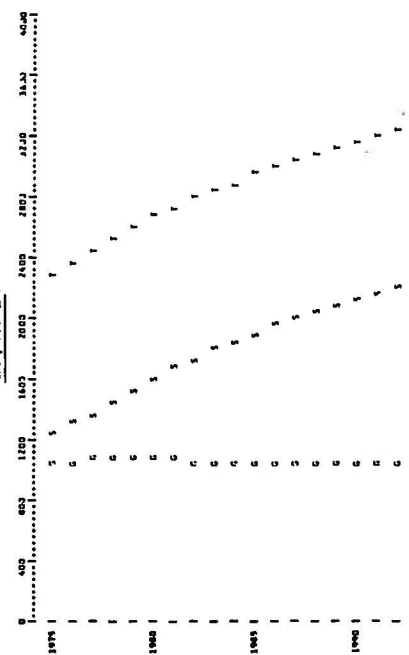
North



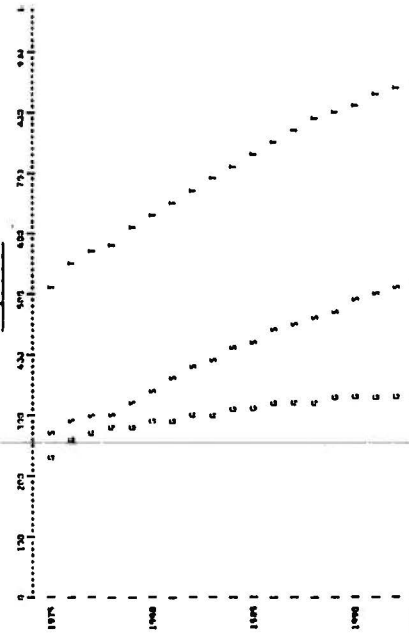
Island Coast



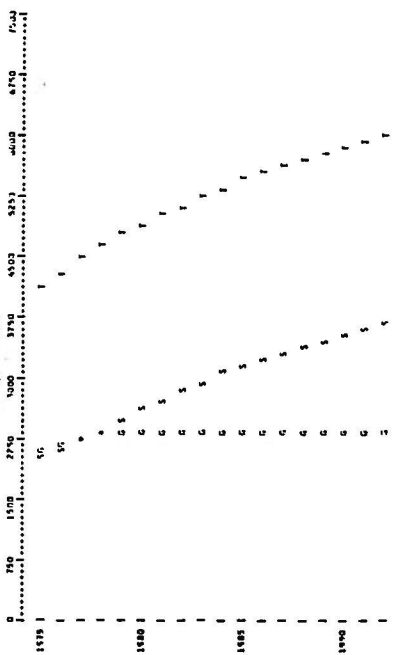
G.V.R.D.



Capital



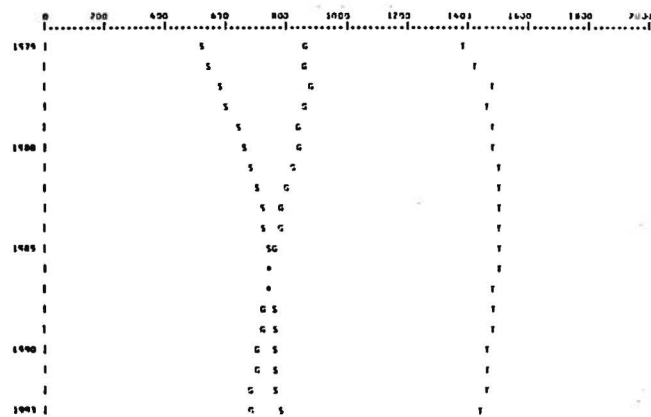
Total



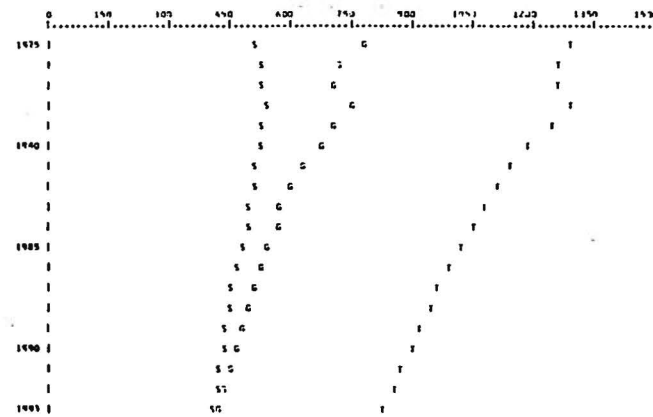
G = G.P.
S = Specialist
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population
Projection (88ATT)

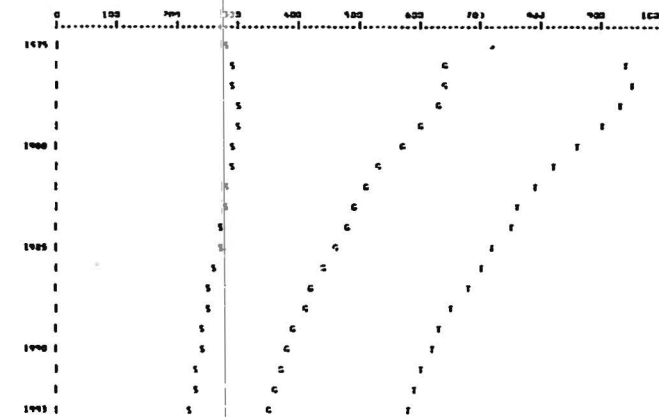
Border East



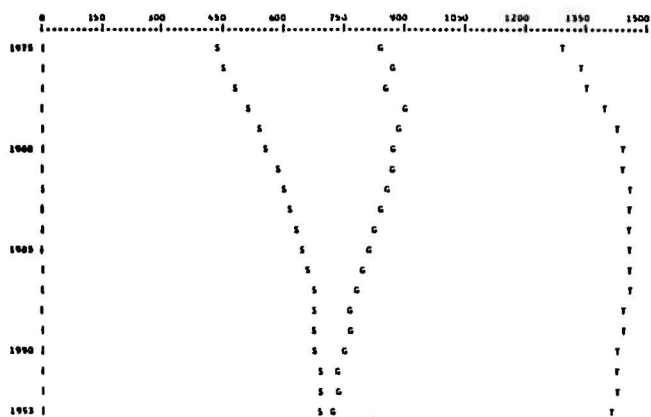
Central



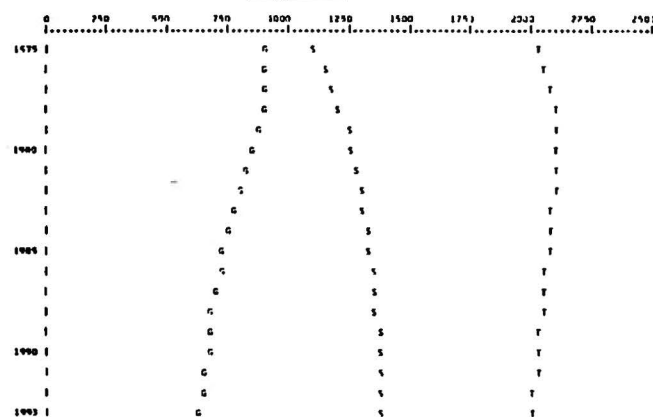
North



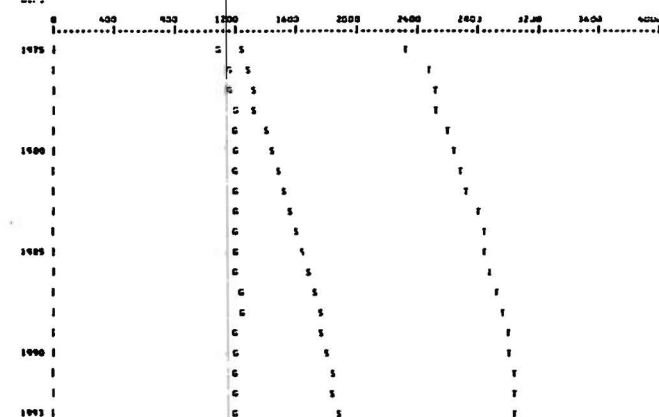
Island Coast



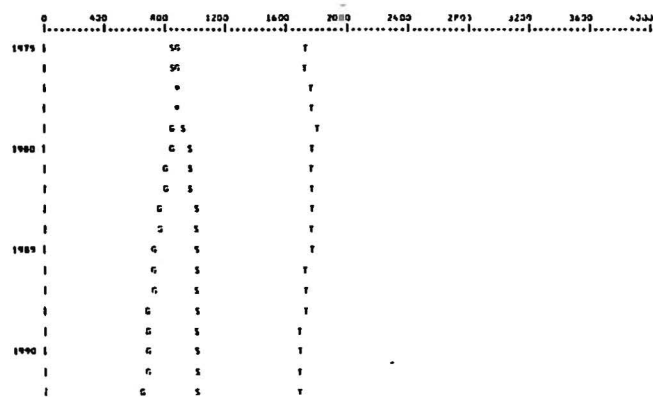
G.V.R.D.



Capital



Total

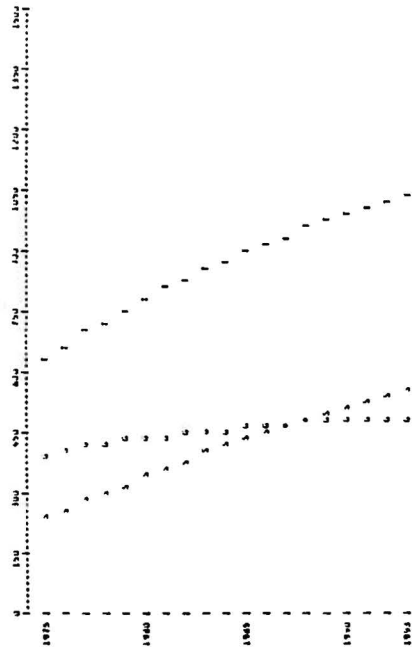


G = G.P.
S = Specialist
T = Total

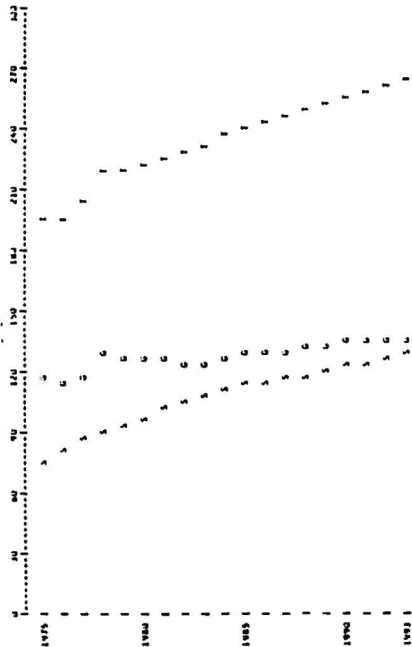
Simulation of Directory Active Physicians

Projection (120A)

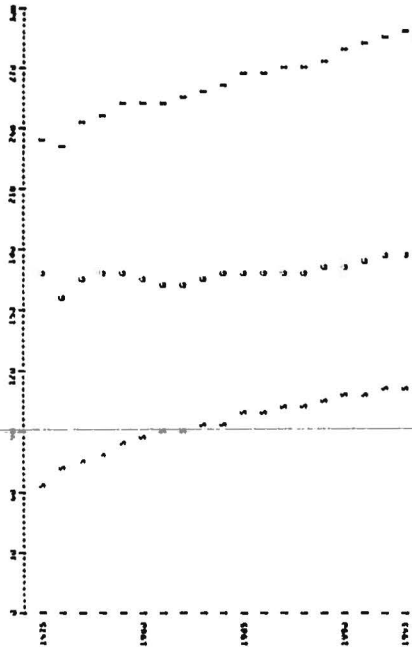
Border East



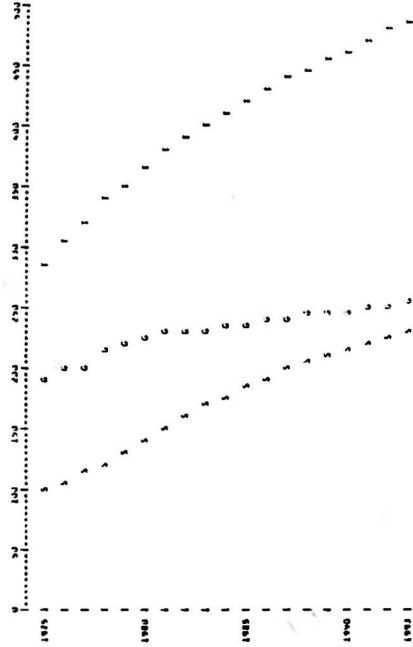
Central



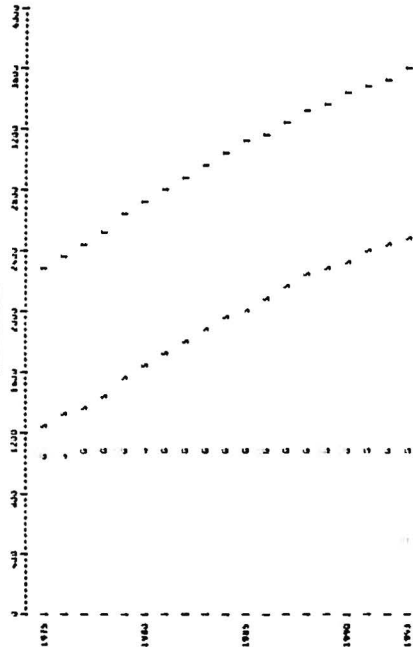
North



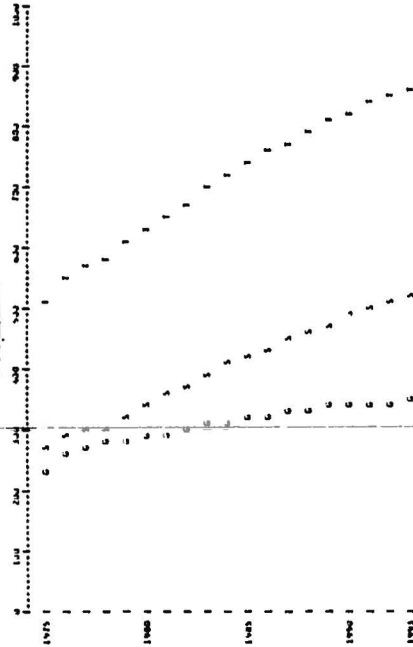
Island Coast



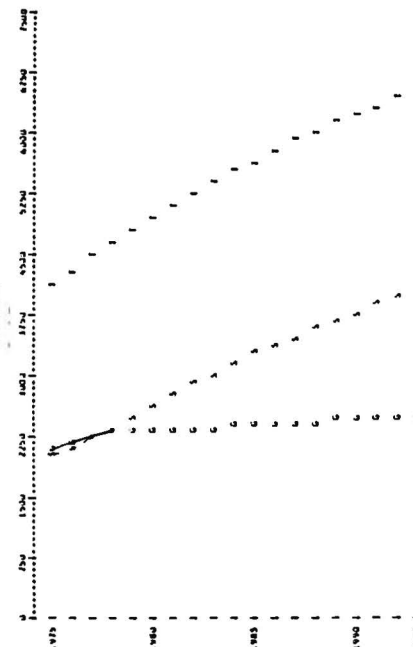
G.V.R.D.



Capital



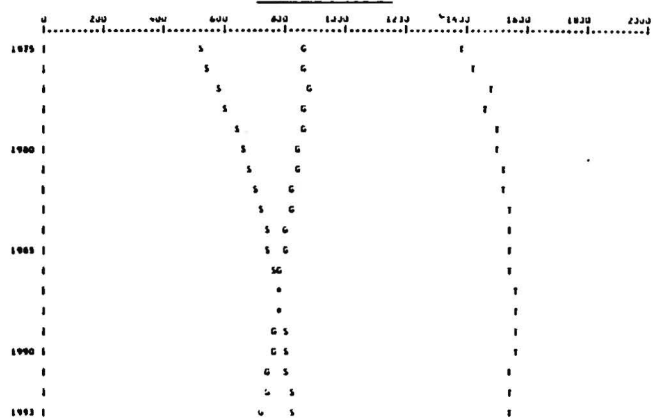
Total



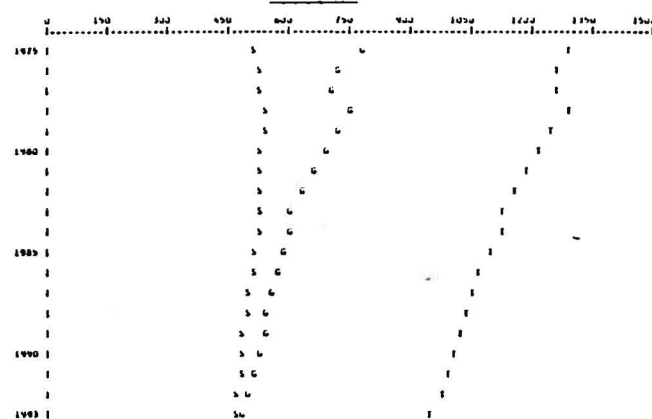
G = G.P.
S = Specialist
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population
Projection (120A)

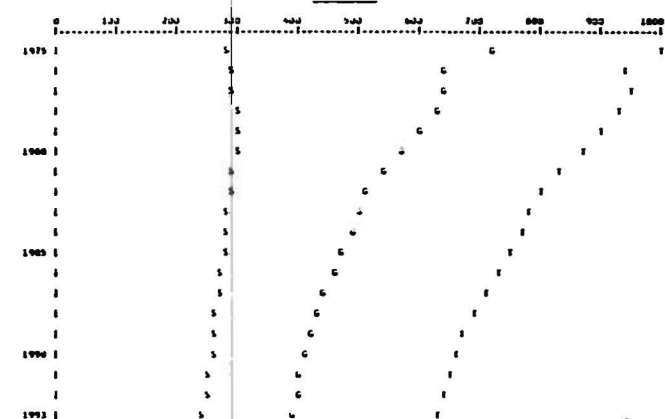
Border East



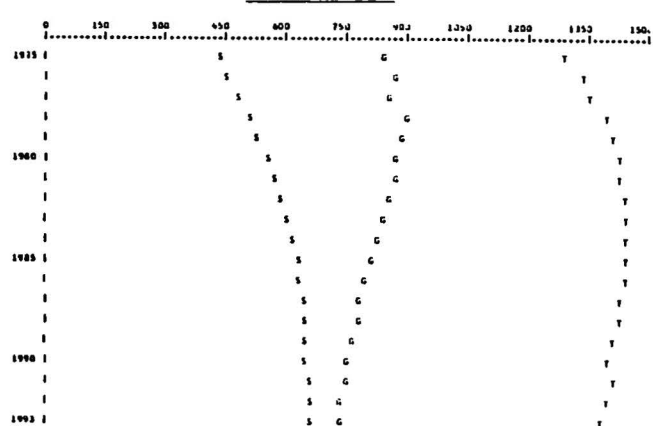
Central



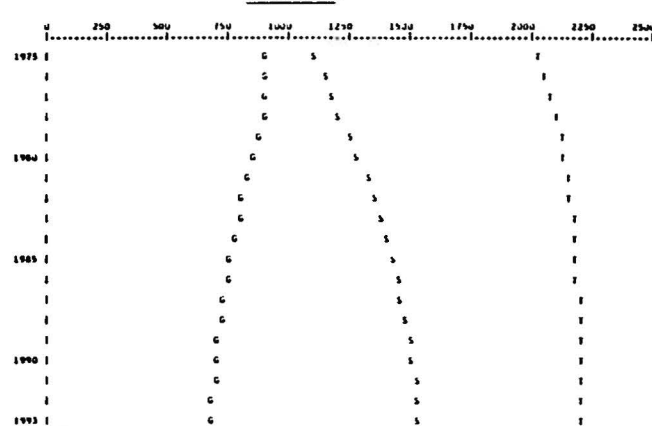
North



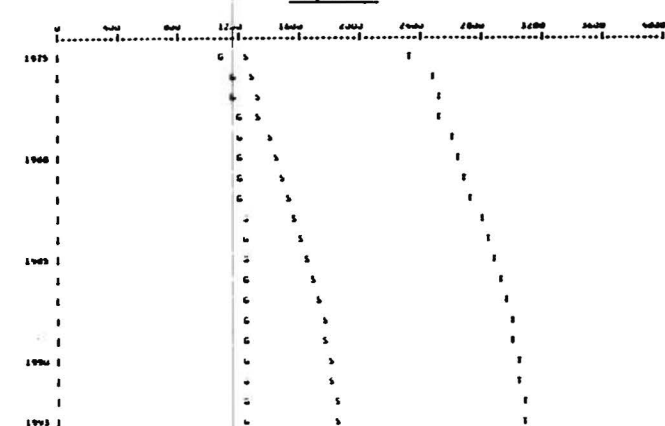
Island Coast



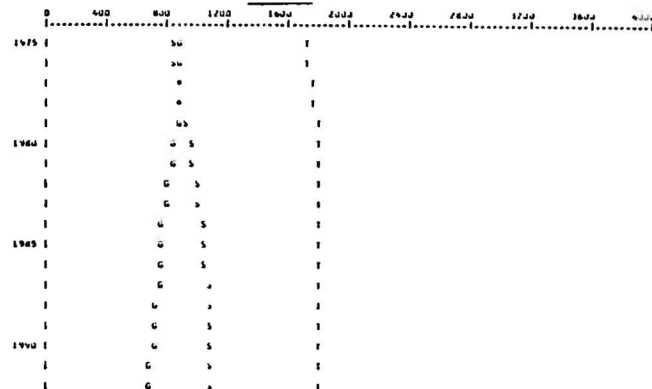
G.V.R.D.



Capital



Total

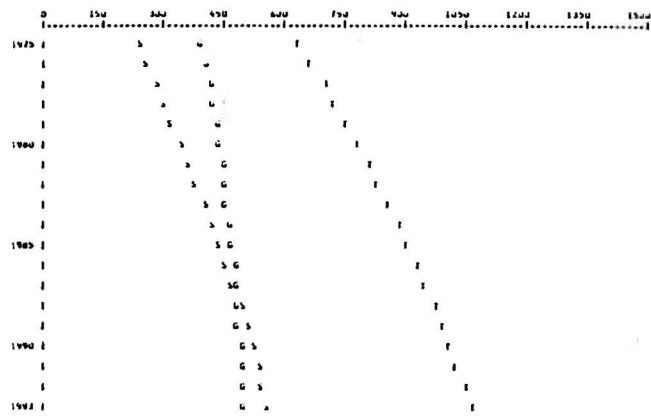


G = G.P.
 S = Specialist
 T = Total

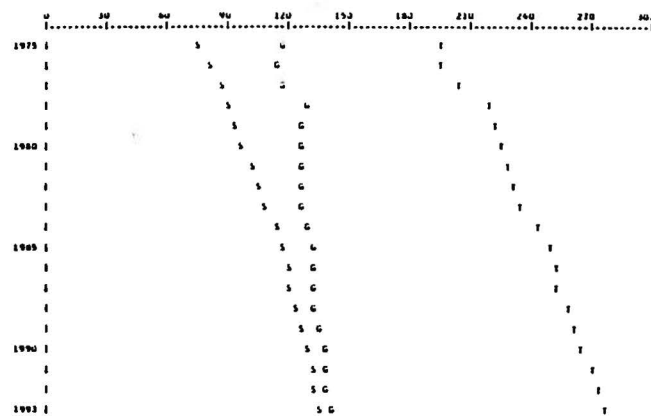
Simulation of Directory Active Physicians

Projection (120B)

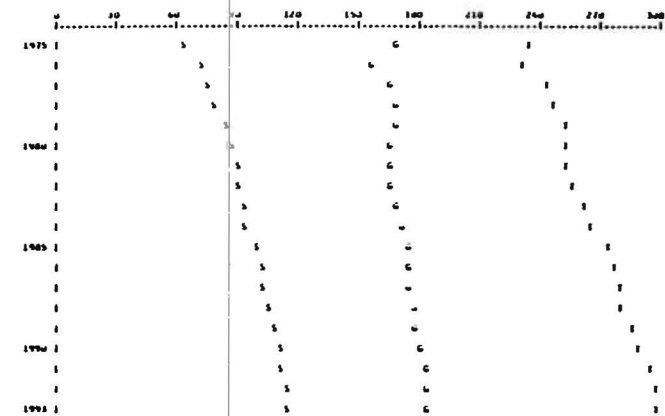
Border East



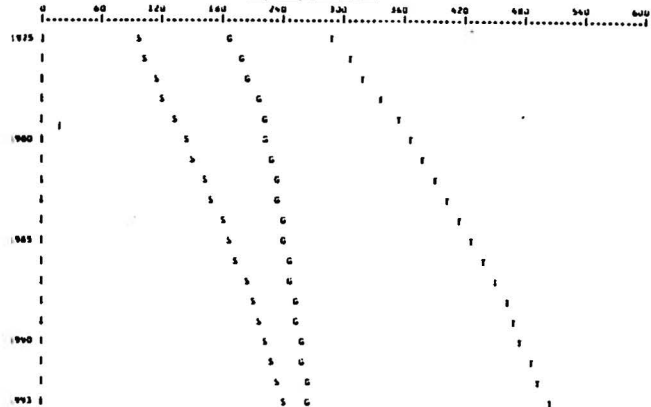
Central



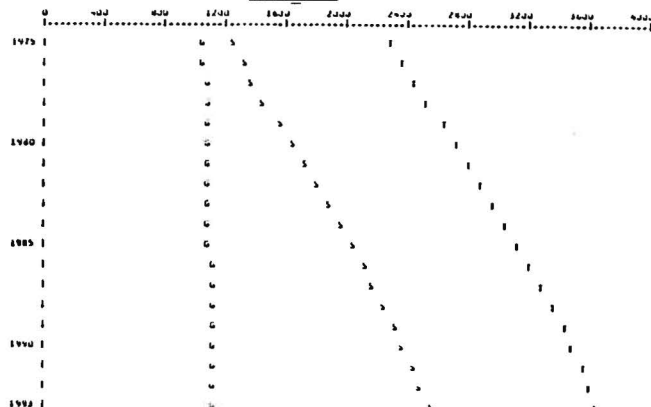
North



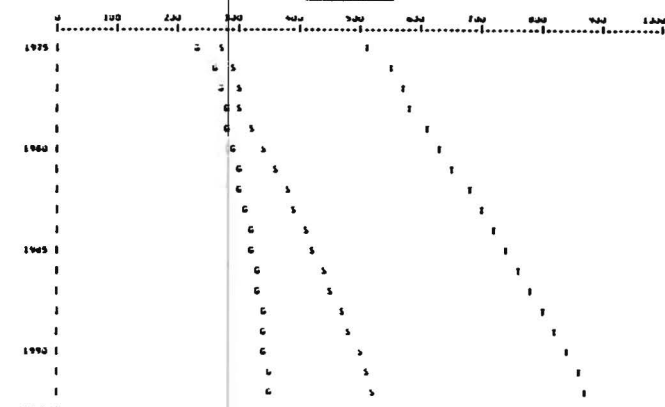
Island Coast



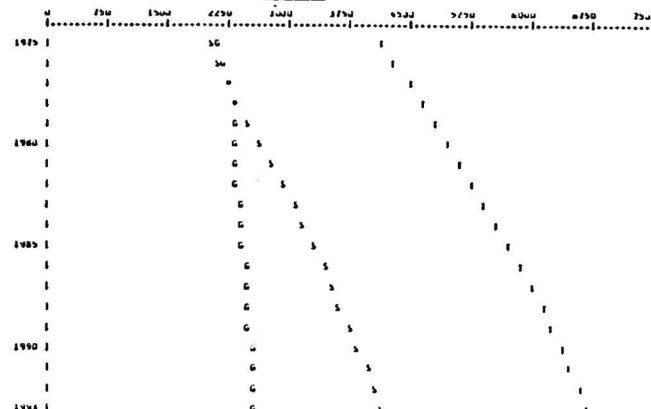
G.V.R.D.



Capital



Total



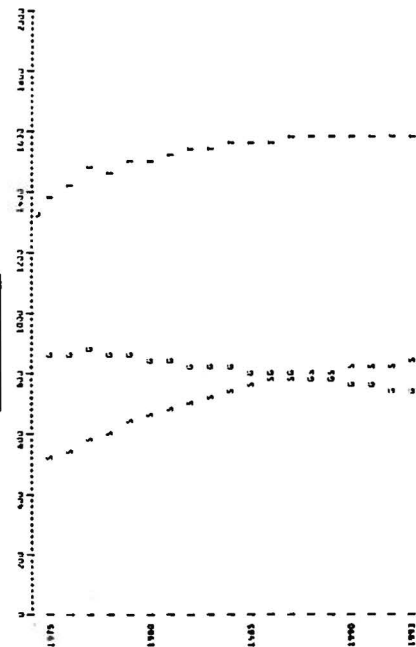
G = G.P.

S = Specialist

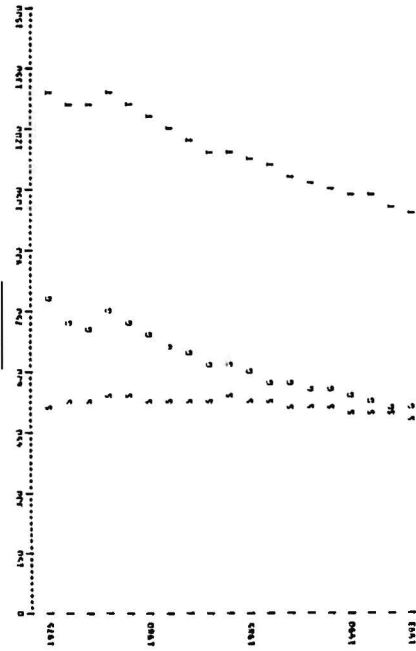
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population Projection (120B)

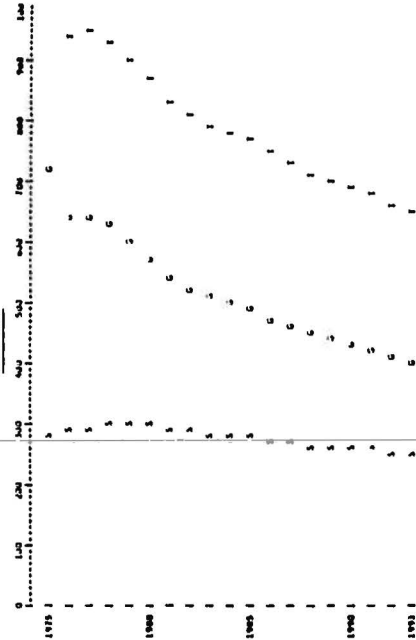
Border East



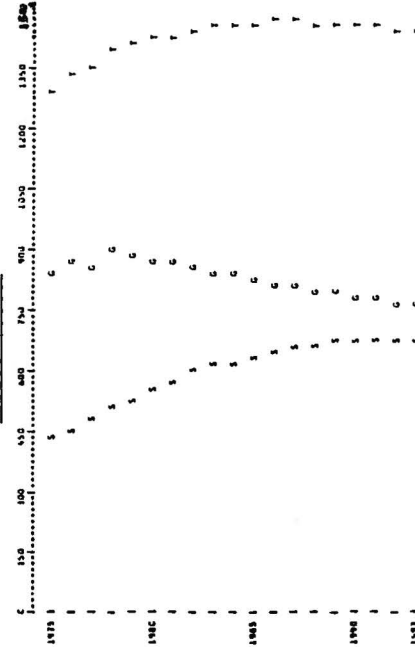
Central



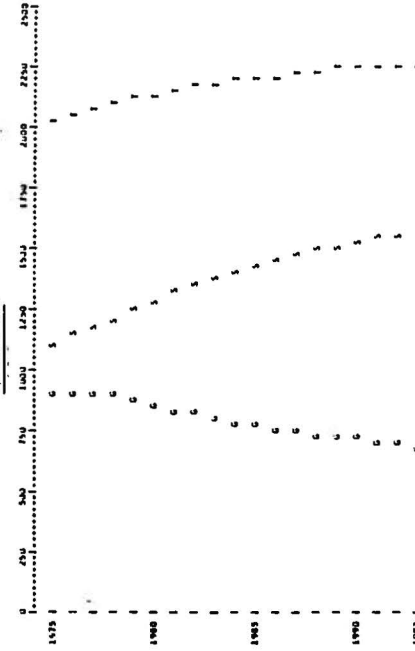
North



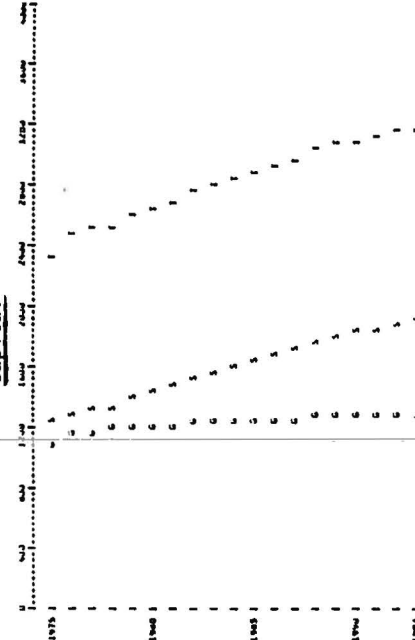
Island Coast



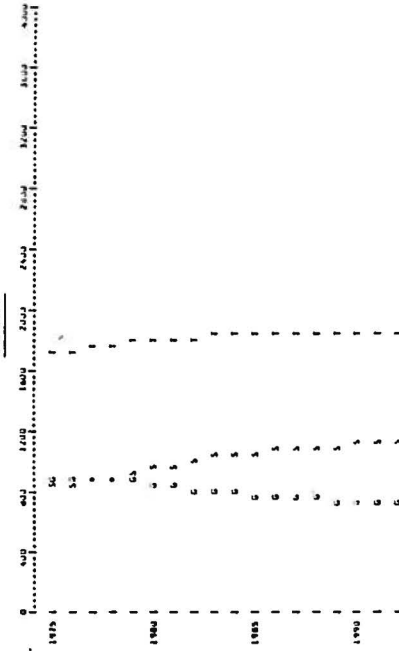
G.V.R.D.



Capital



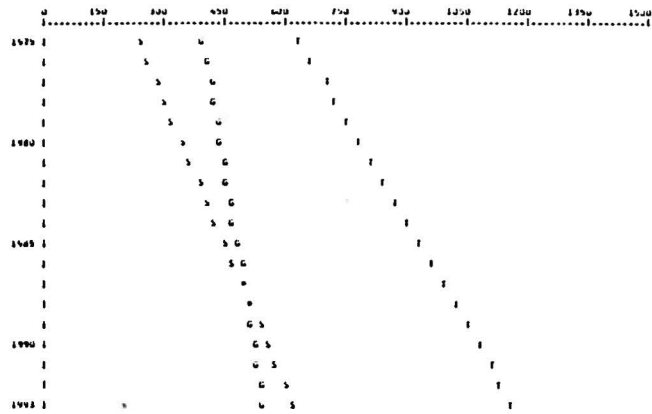
Total



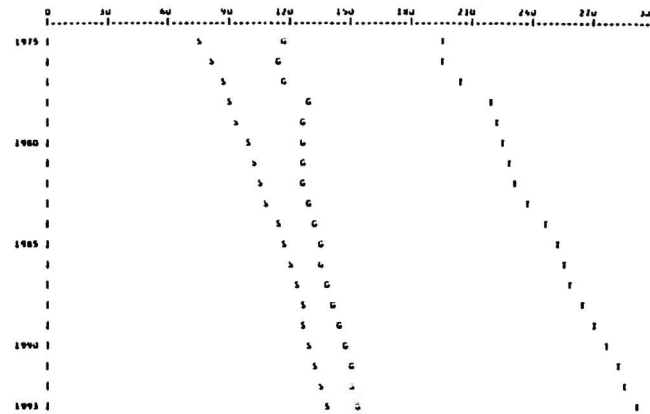
G = G.P.
S = Specialist
T = Total

Simulation of Directory Active Physicians
Projection (120C)

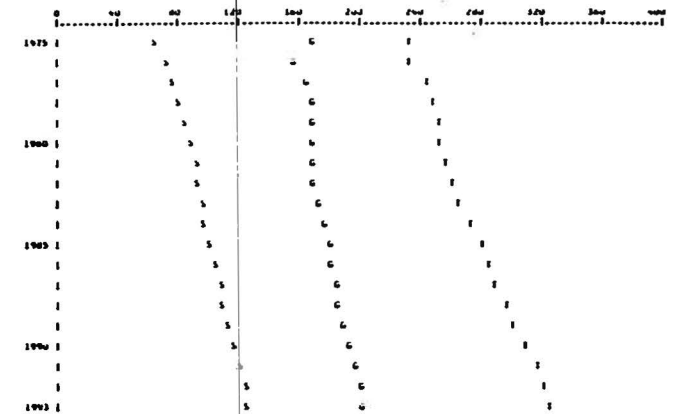
Border East



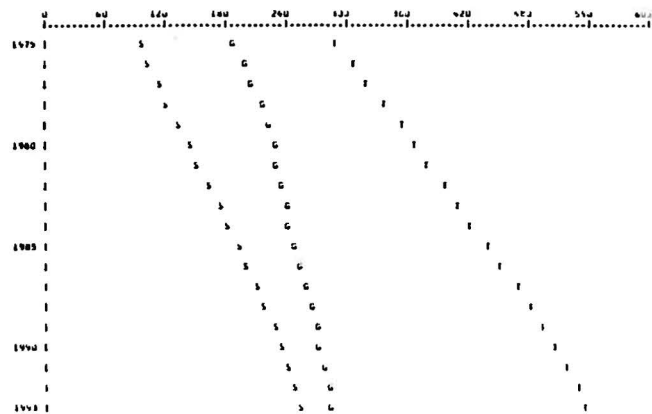
Central



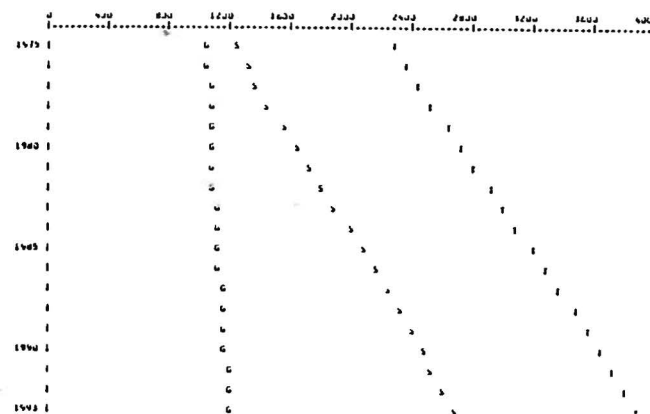
North



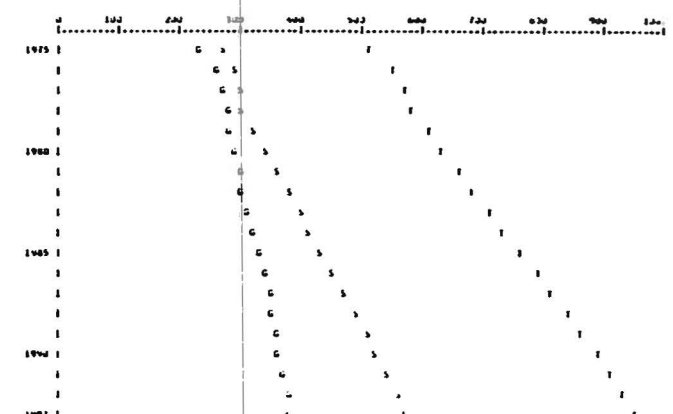
Island Coast



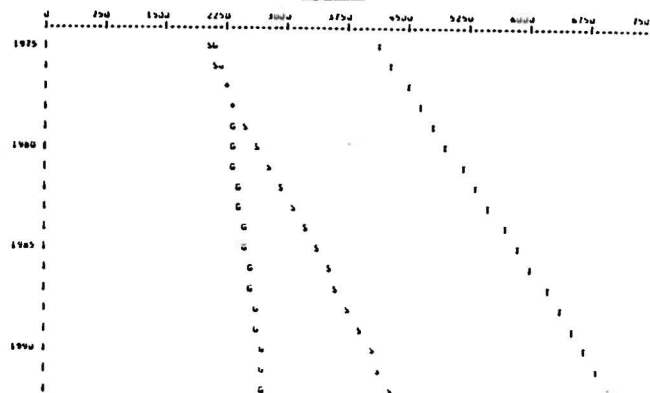
G.V.R.D.



Capital



Total

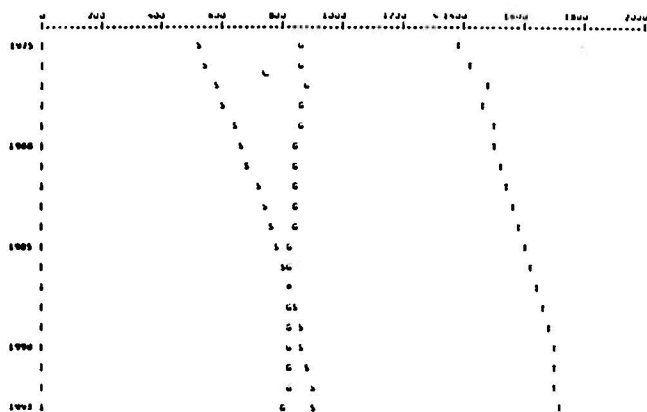


G = G.P.
S = Specialist
T = Total

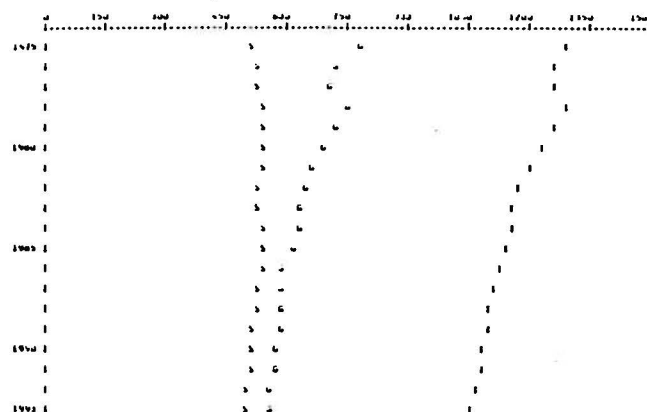
Simulation of Directory Active Physicians per 1,000,000 Population

Projection (120C)

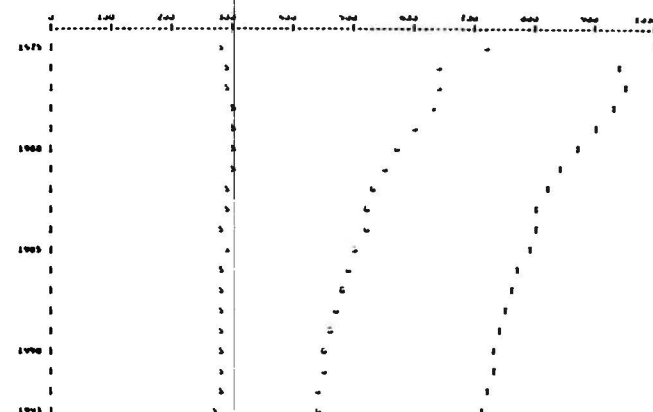
Border East



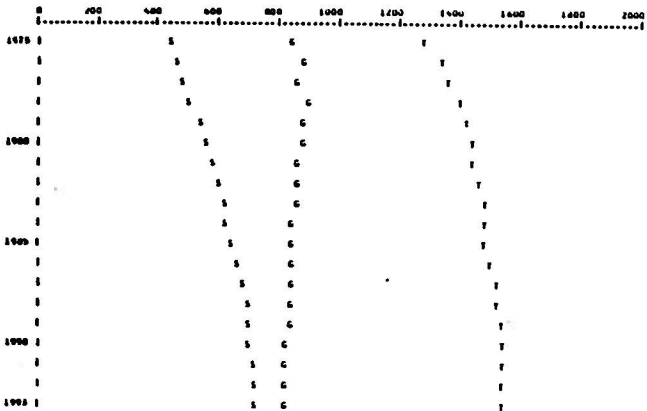
Central



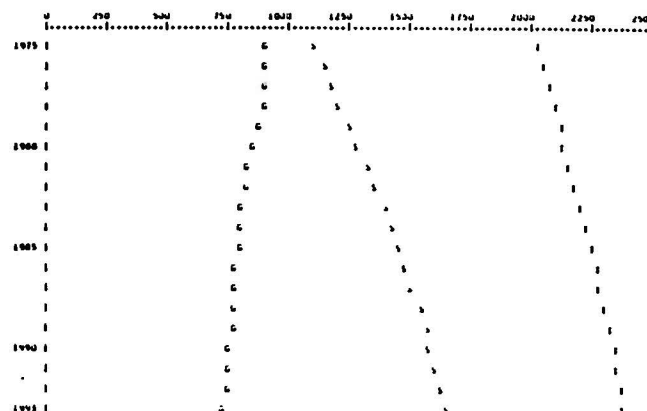
North



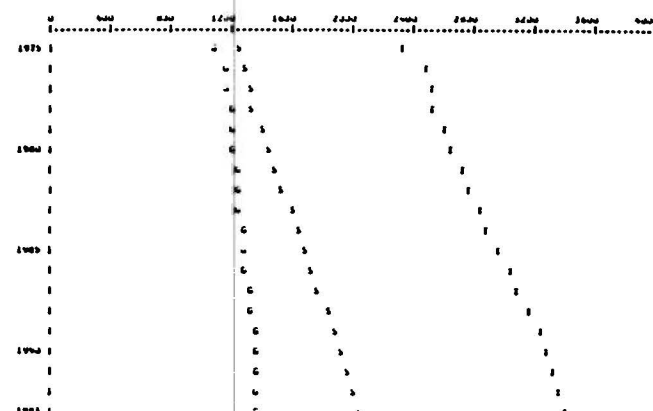
Island Coast



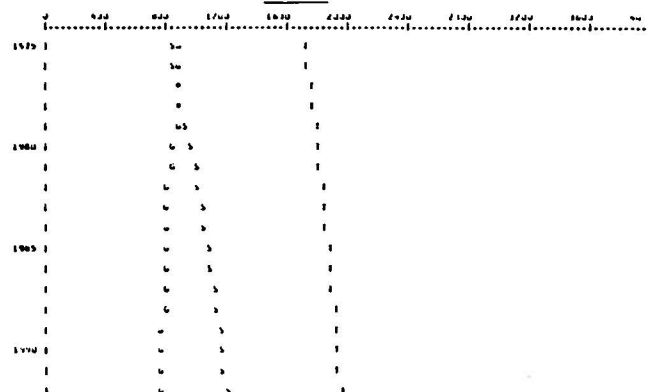
G.V.R.D.



Capital



Total



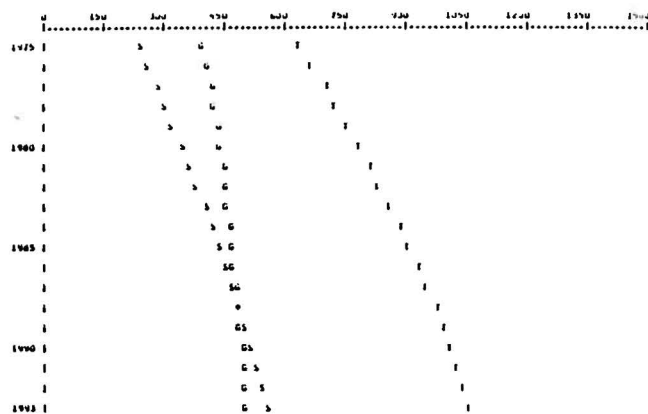
G = G.P.

S = Specialist

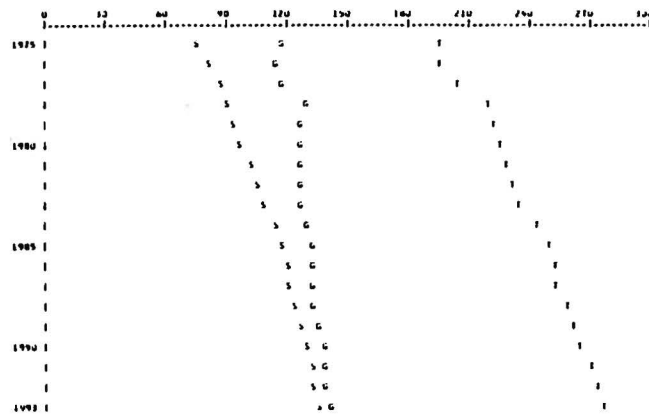
T = Total

Simulation of Directory Active Physicians
Projection (120D)

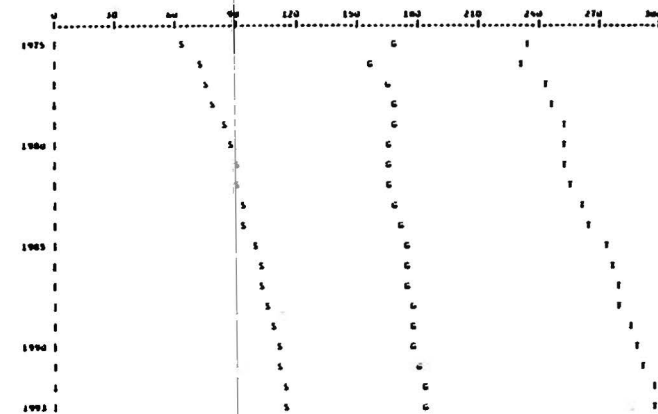
Border East



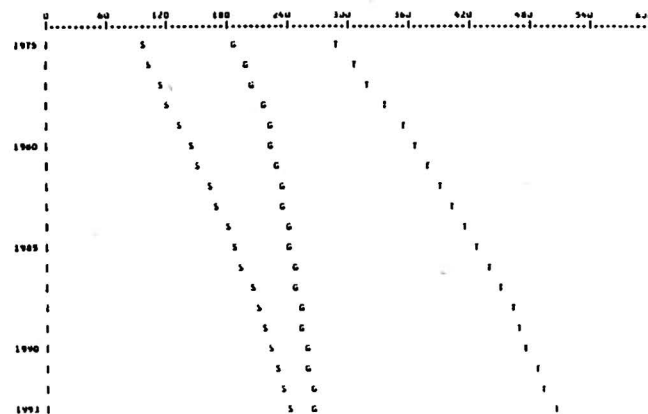
Central



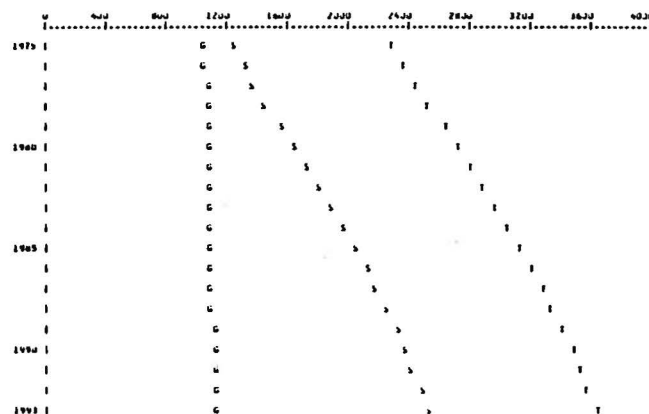
North



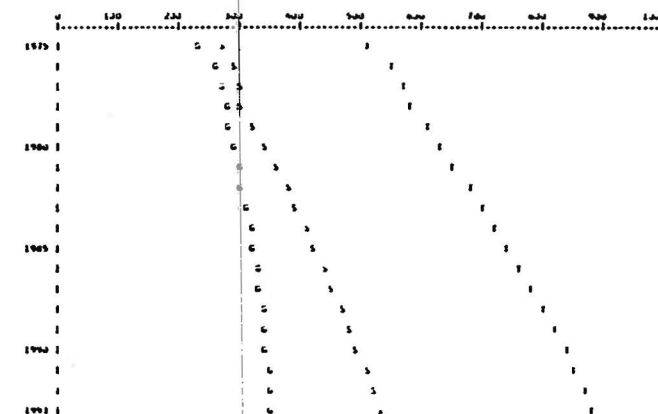
Island Coast



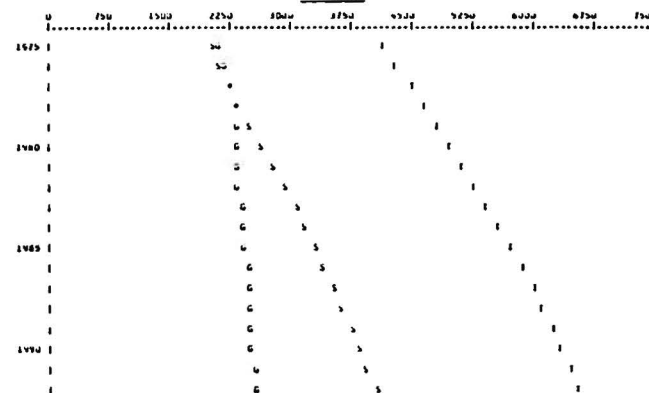
G.V.R.D.



Capital



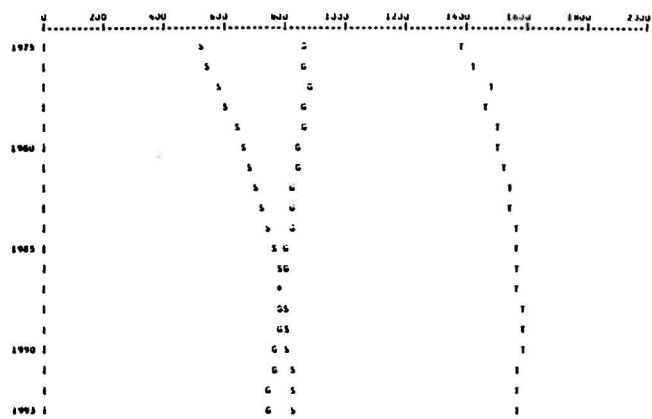
Total



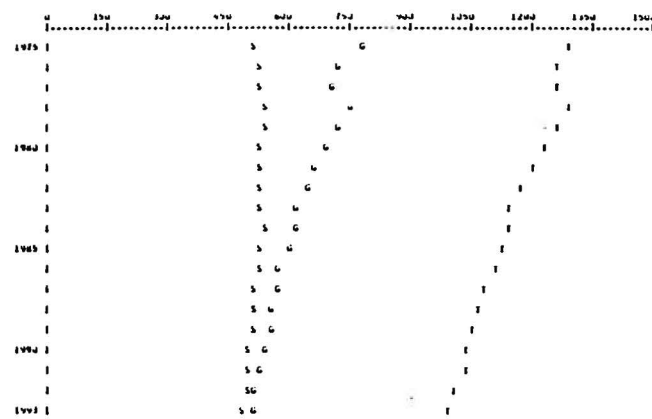
G = G.P.
S = Specialist
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population
Projection (120D)

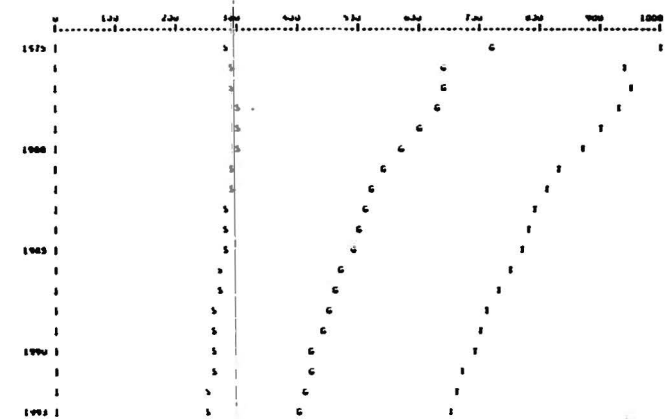
Border East



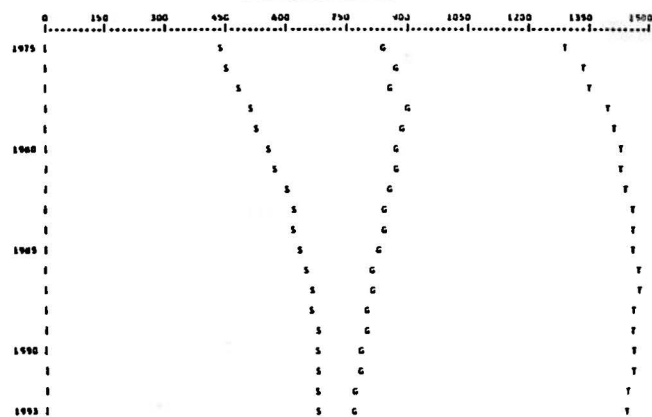
Central



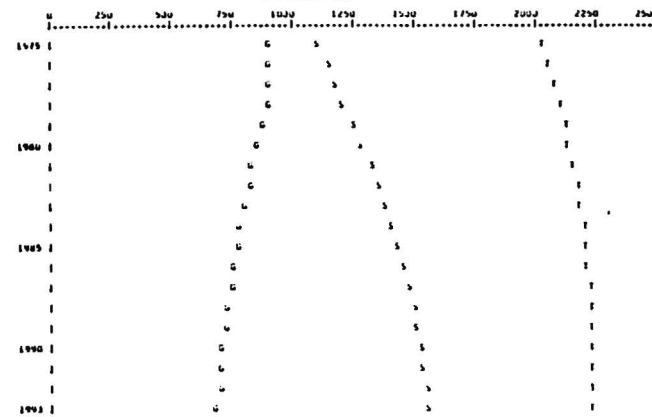
North



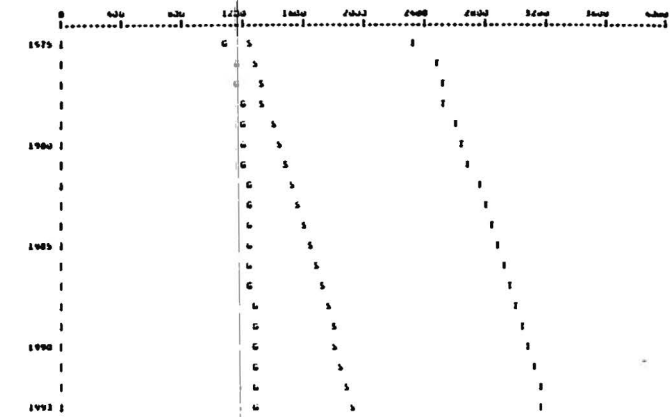
Island Coast



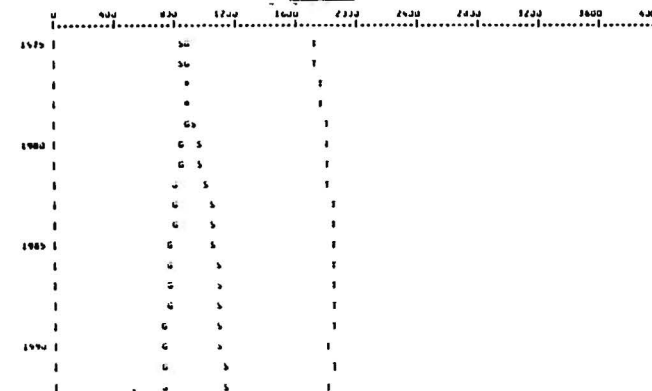
G.V.R.D.



Capital



Total

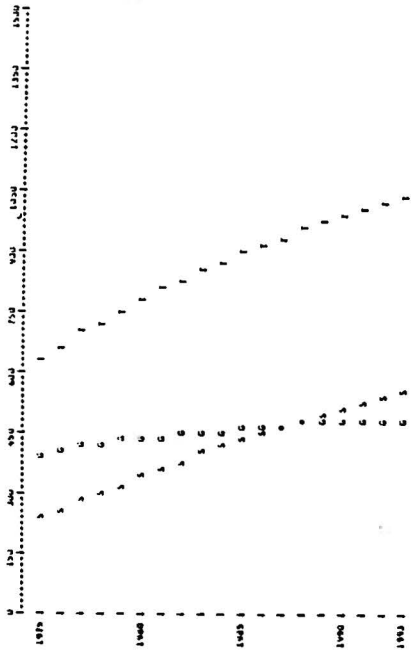


G = G.P.
 S = Specialist
 T = Total

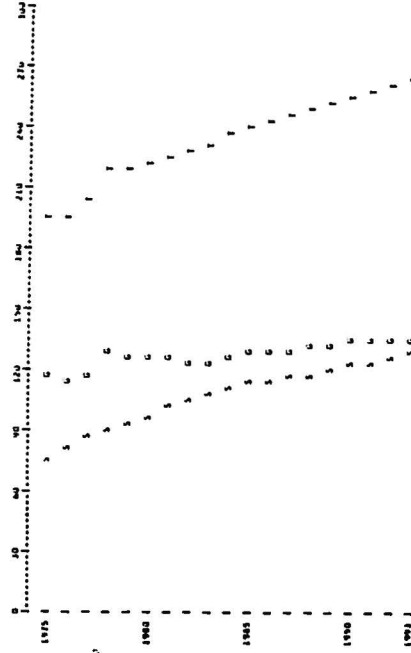
Simulation of Directory Active Physicians

Projection (160A)

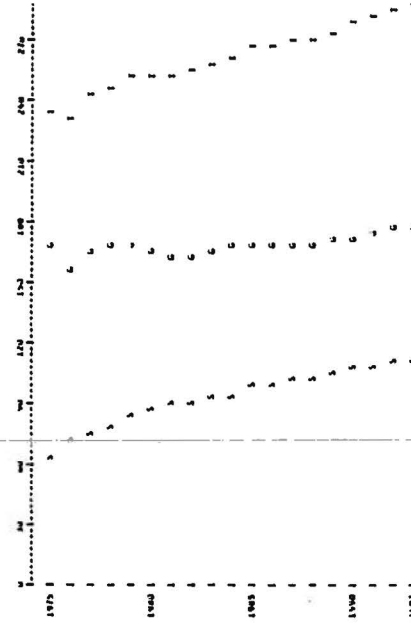
Border East



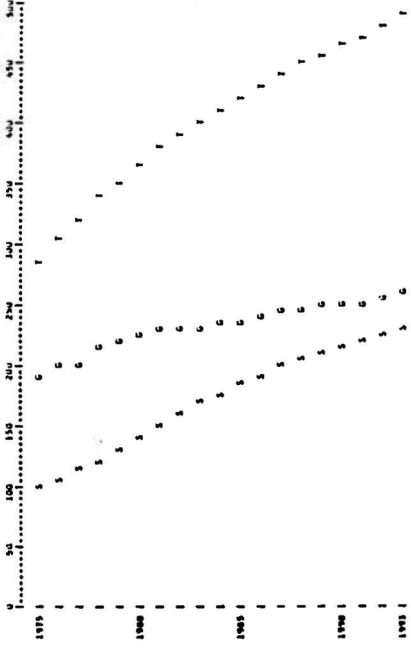
Central



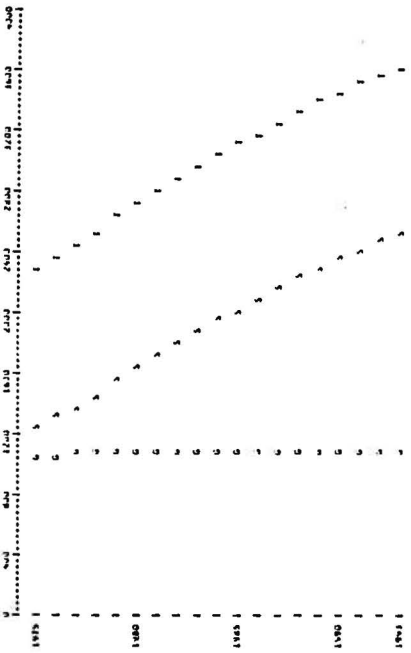
North



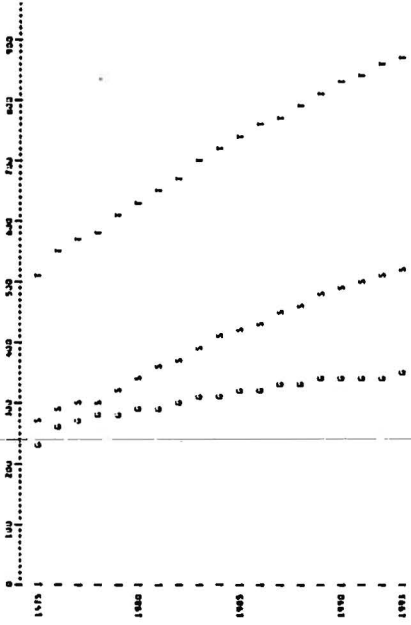
Island Coast



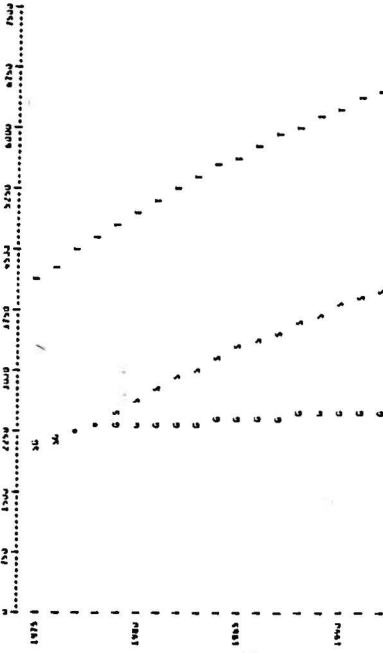
G.V.R.D.



Capital



Total



G = G.P.

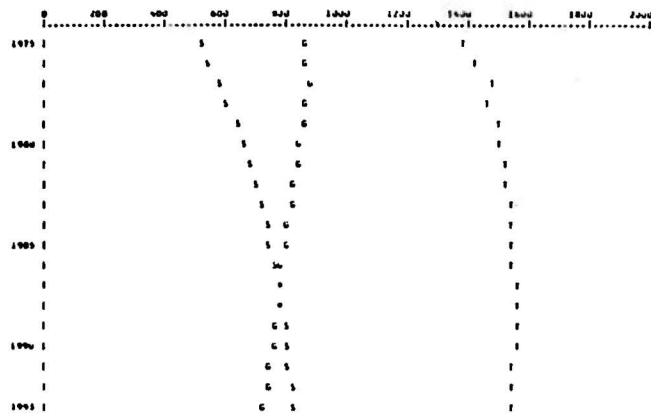
S = Specialist

T = Total

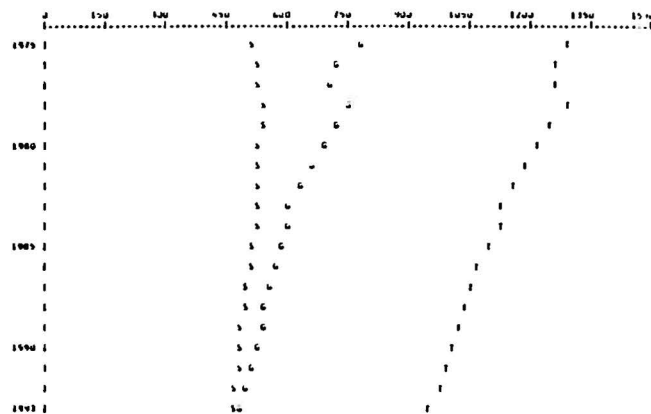
Simulation of Directory Active Physicians per 1,000,000 Population

Projection (160A)

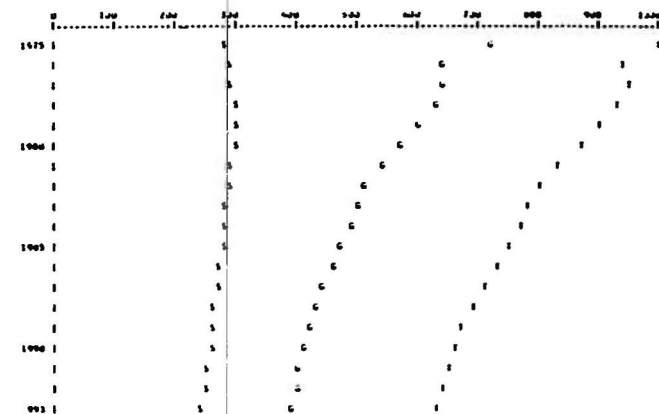
Border East



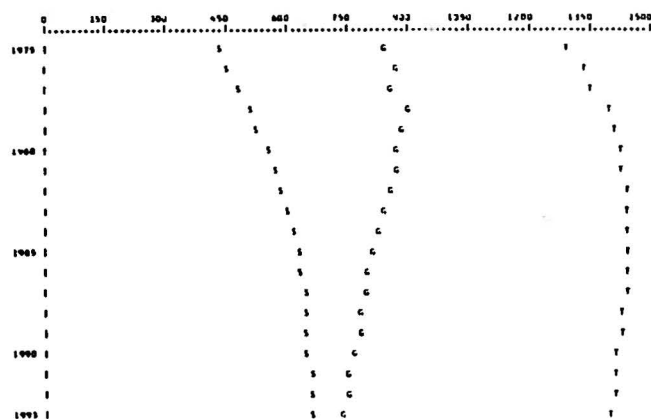
Central



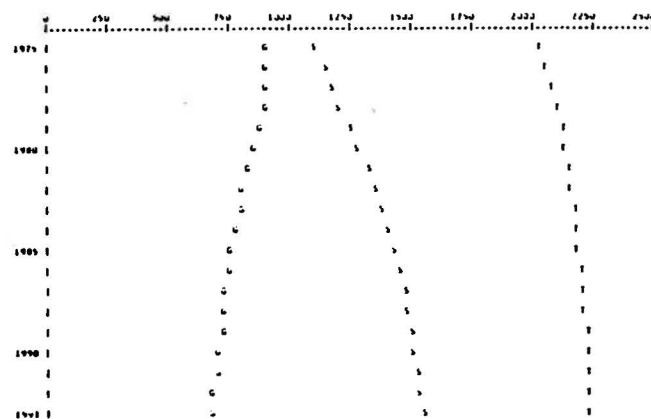
North



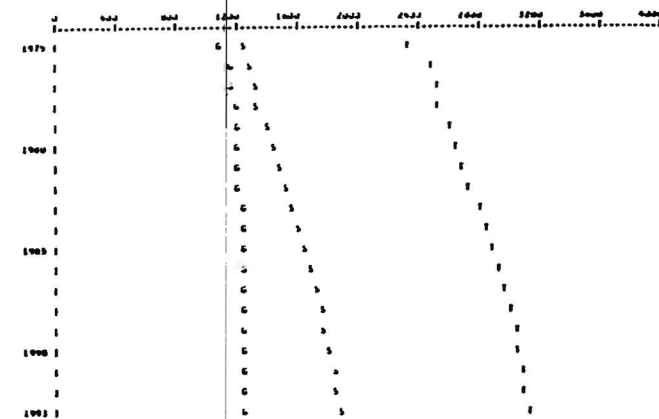
Island Coast



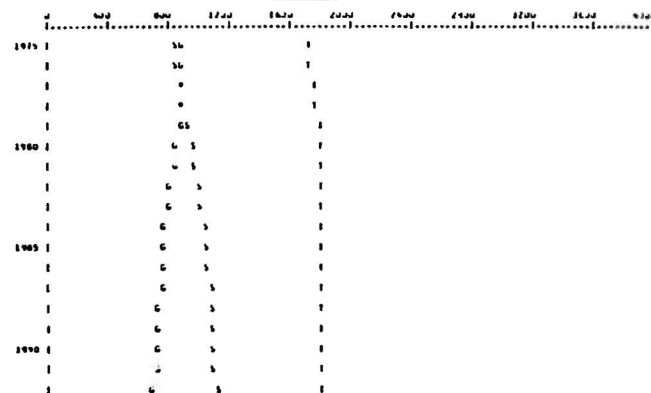
G.V.R.D.



Capital



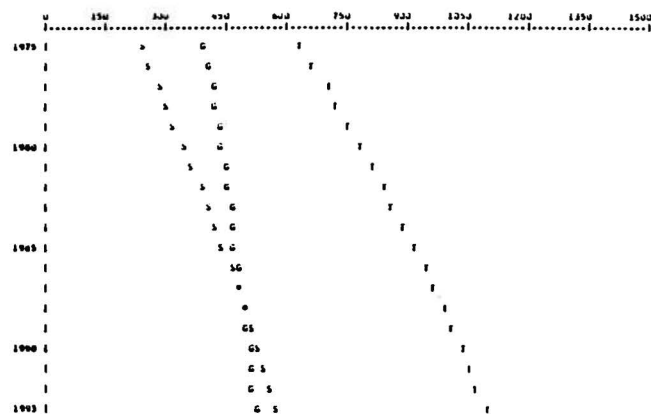
Total



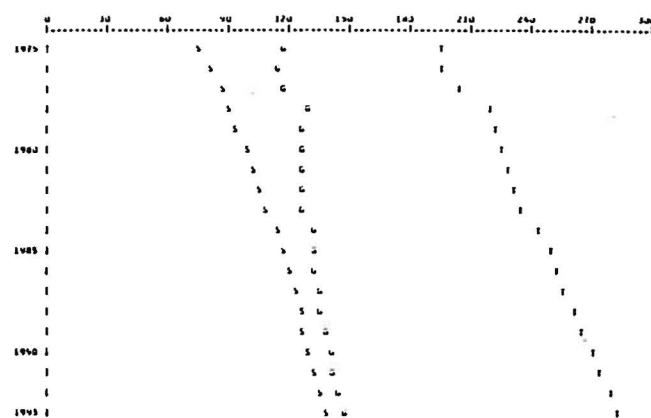
G = G.P.
S = Specialist
T = Total

Simulation of Directory Active Physicians Projection (160B)

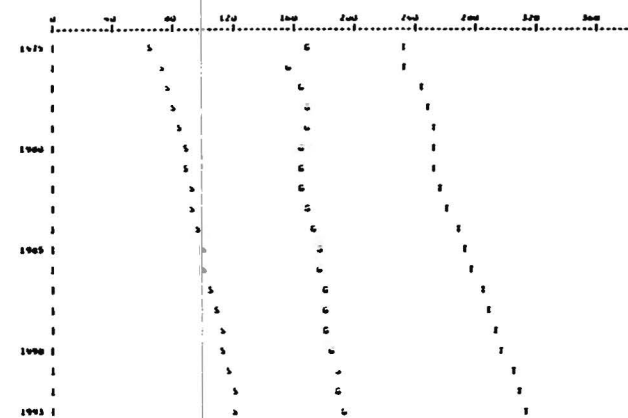
Border East



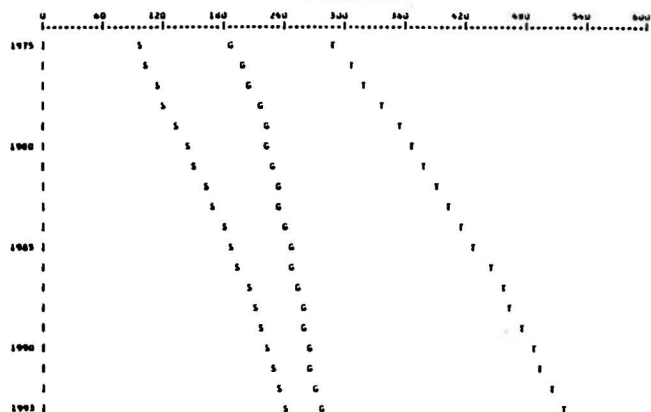
Central



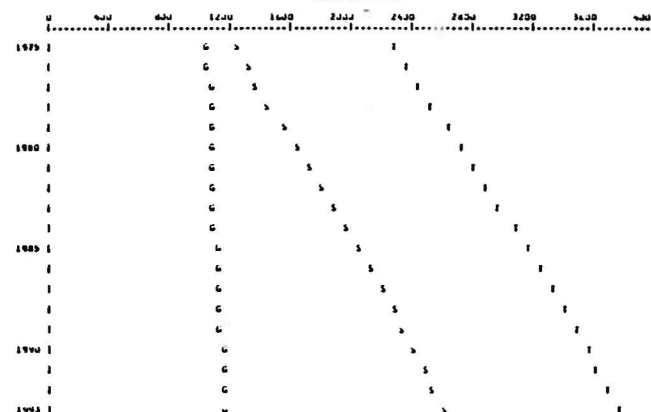
North



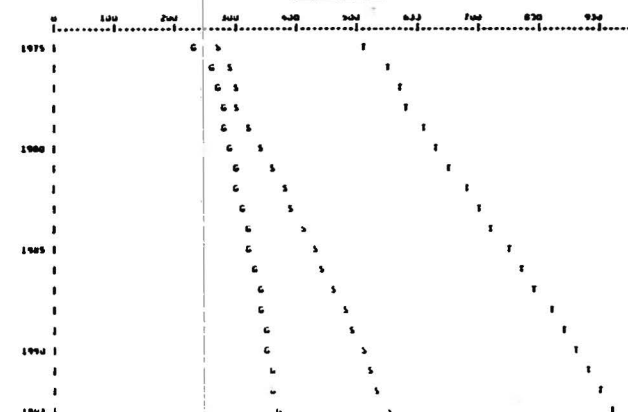
Island Coast



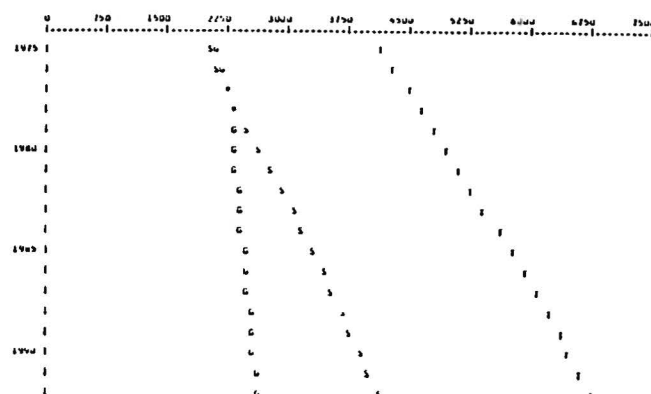
G.V.R.D.



Capital



Total



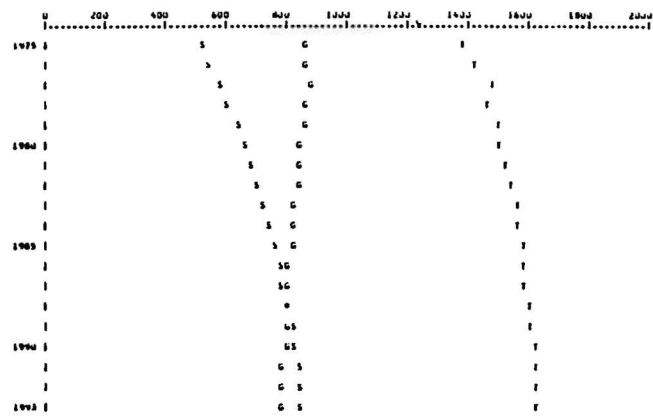
G = G.P.

S = Specialist

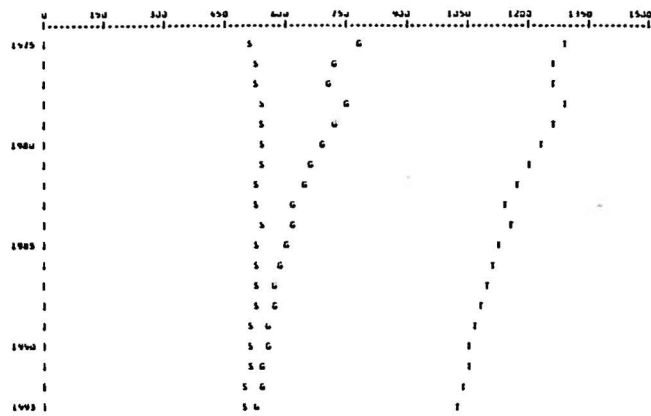
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population
Projection (160B)

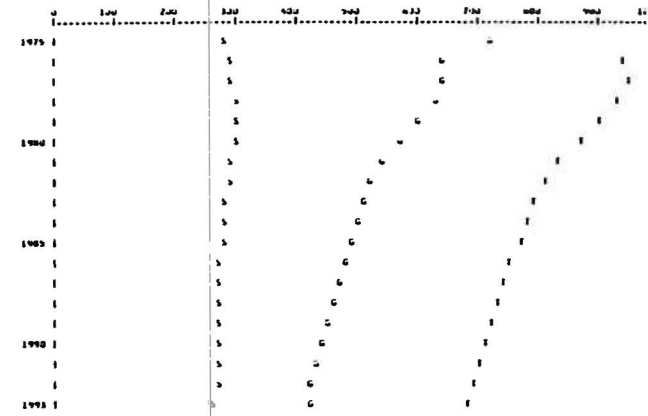
Border East



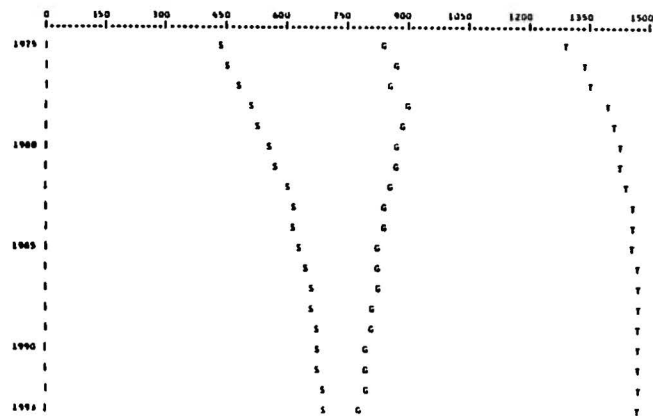
Central



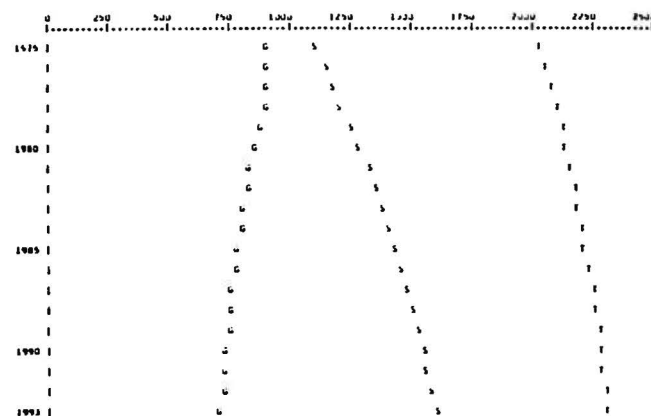
North



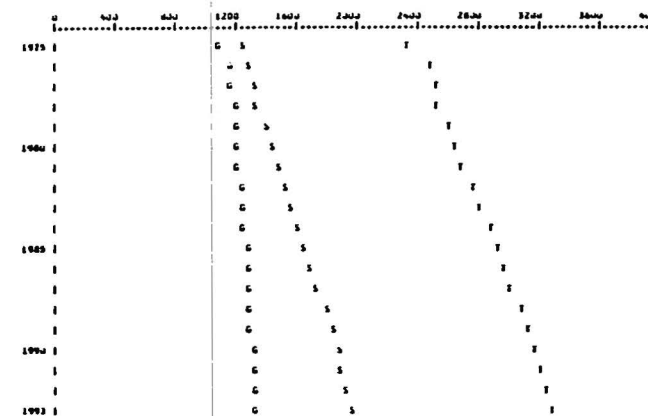
Island Coast



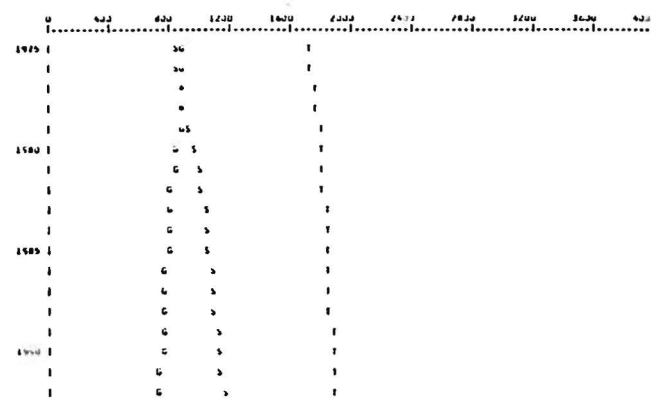
G.V.R.D.



Capital



Total



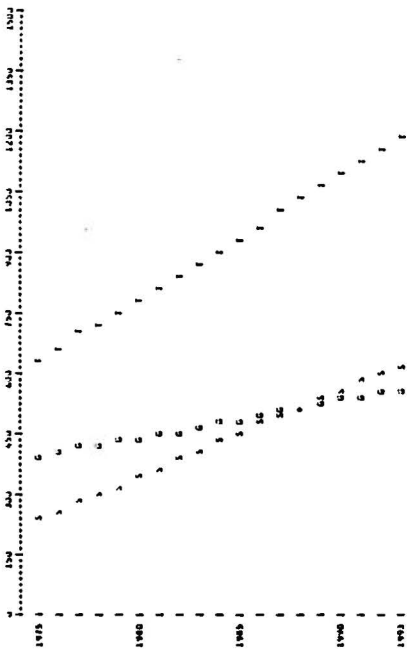
G = G.P.

S = Specialist

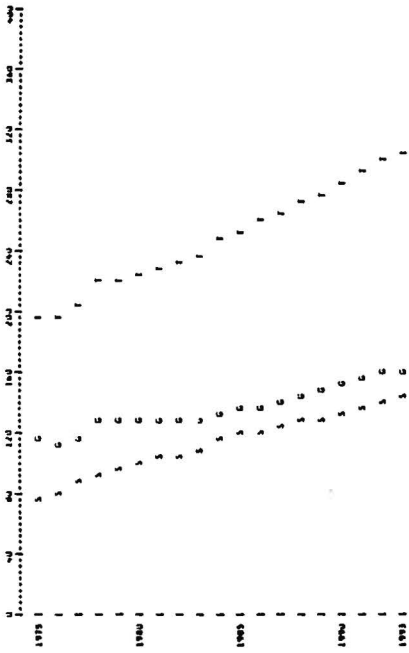
T = Total

Simulation of Directory Active Physicians Projection (160C)

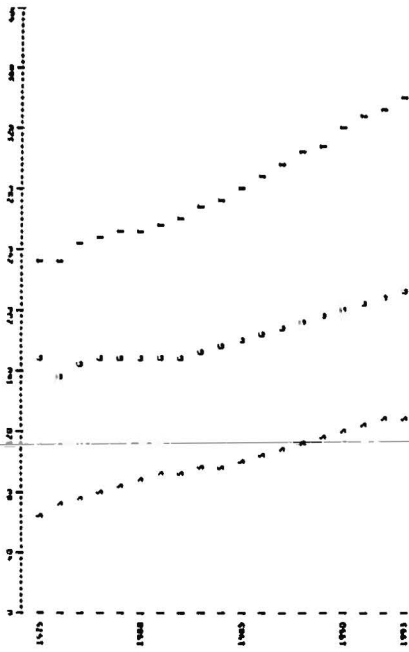
Border East



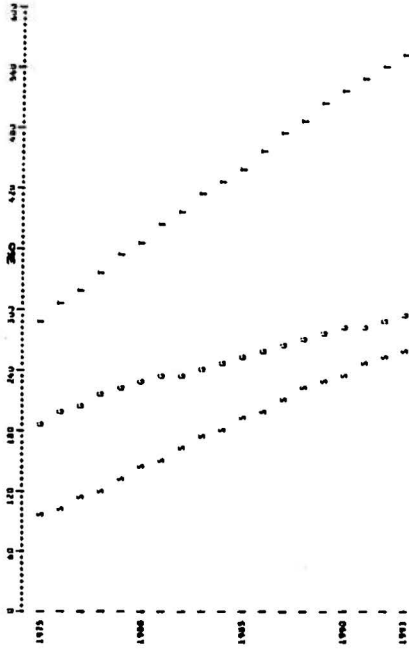
Central



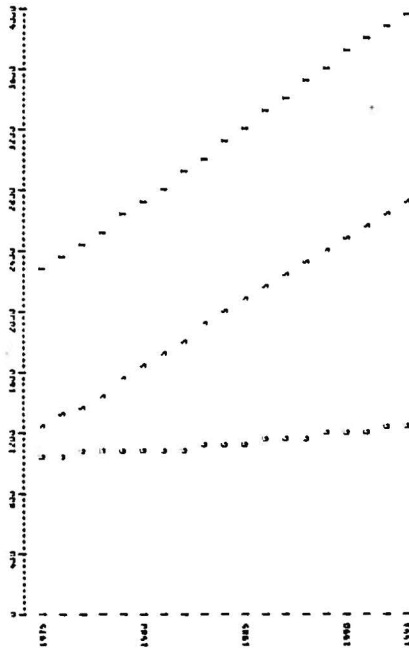
North



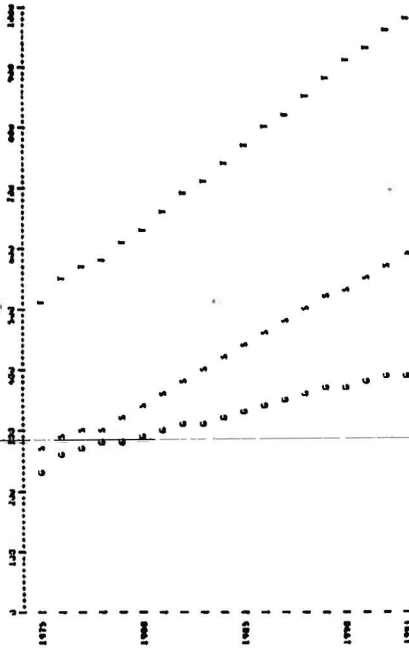
Island Coast



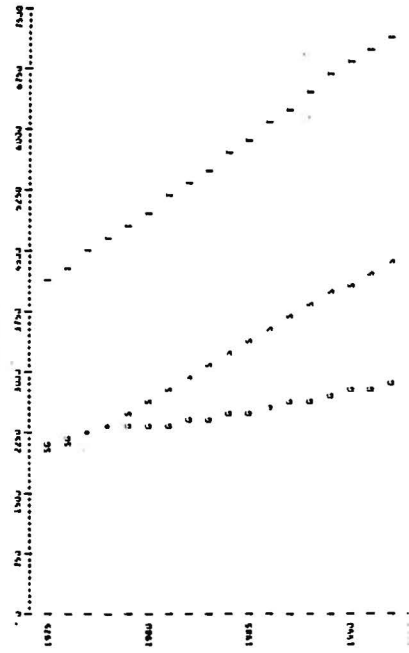
G.V.R.D.



Capital



Total



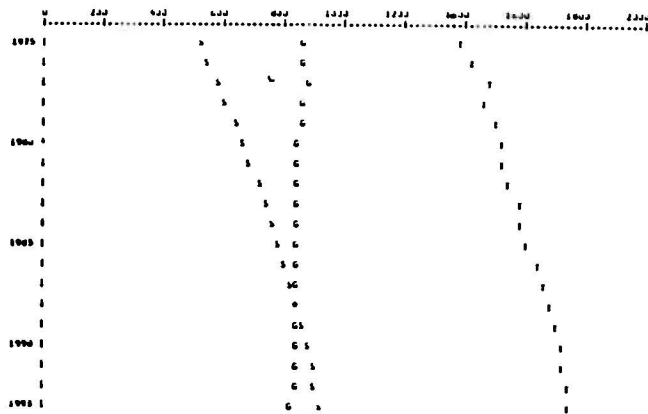
G = G.P.

S = Specialist

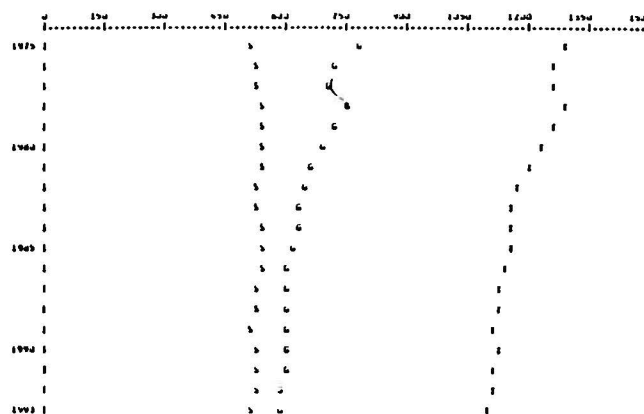
T = Total

Simulation of Directory Active Physicians per 1,000,000 Population
Projection (160C)

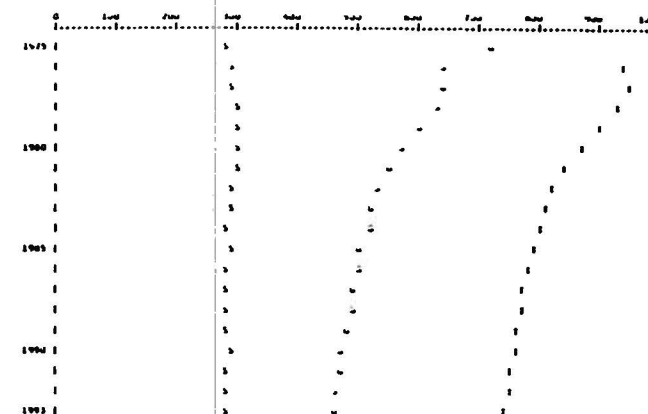
Border East



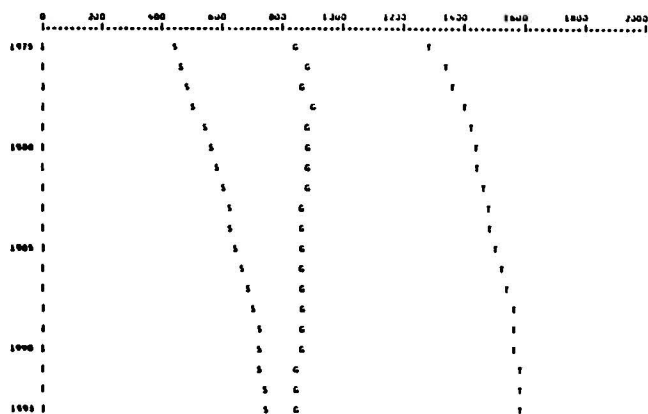
Central



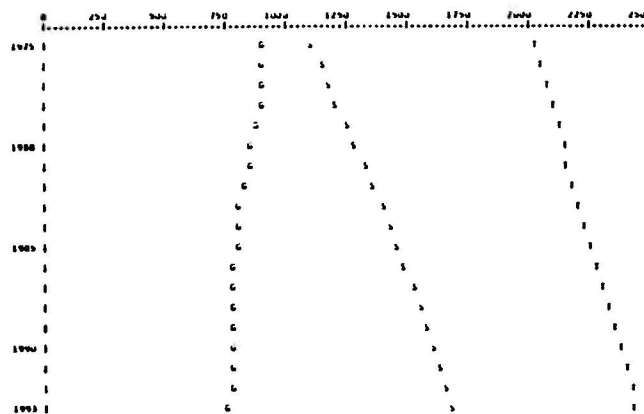
North



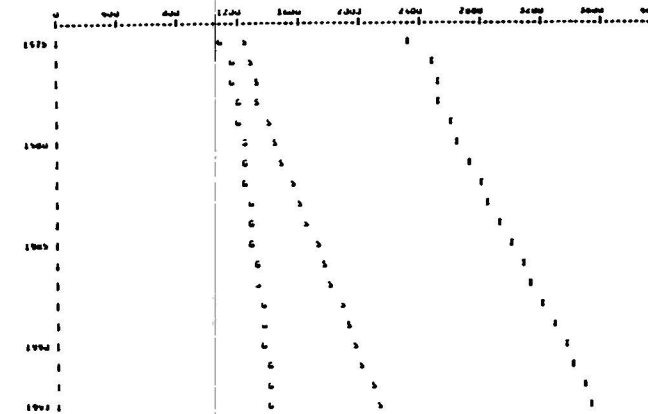
Island Coast



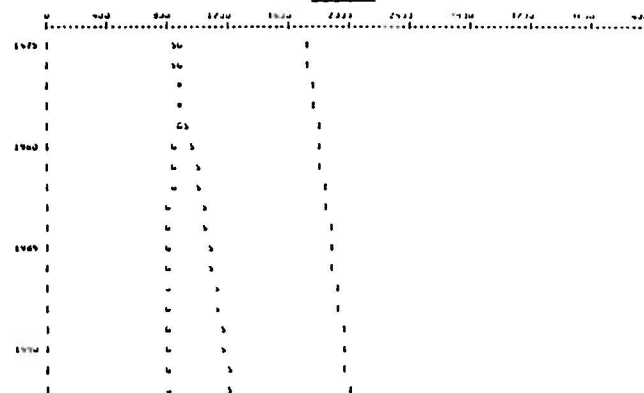
G.V.R.D.



Capital



Total



G = G.P.

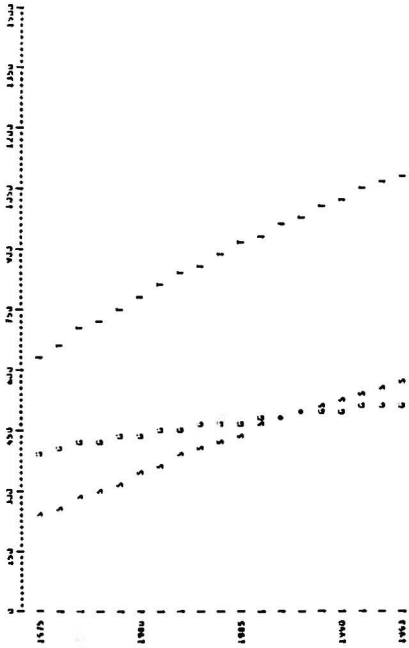
S = Specialist

T = Total

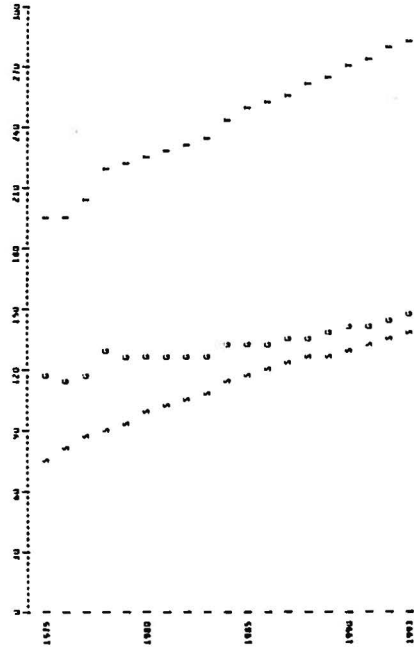
Simulation of Directory Active Physicians

Projection (1600)

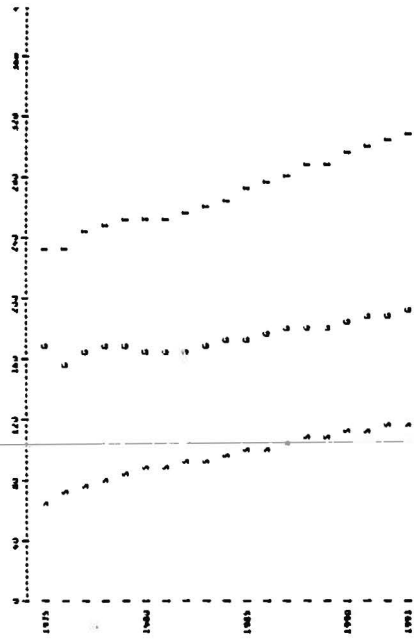
Border East



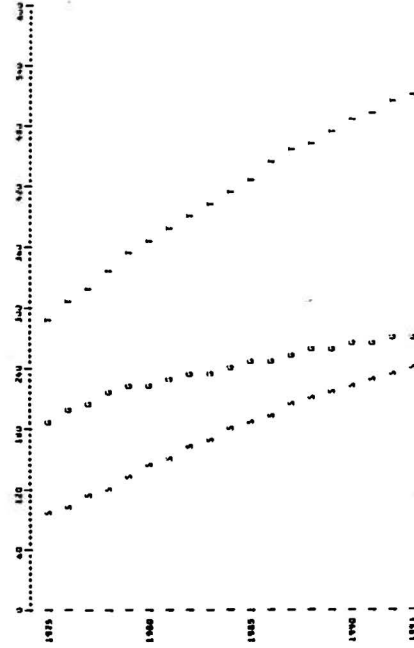
Central



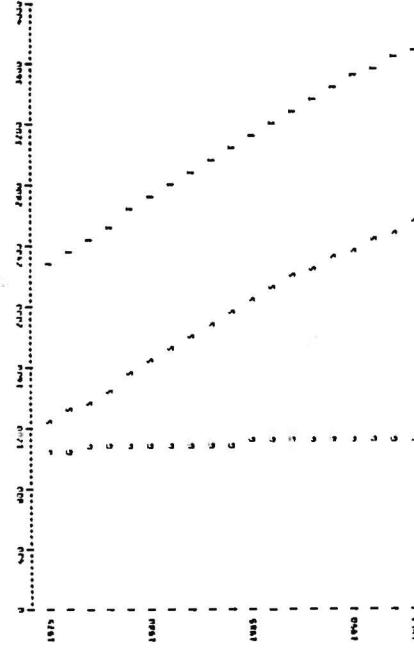
North



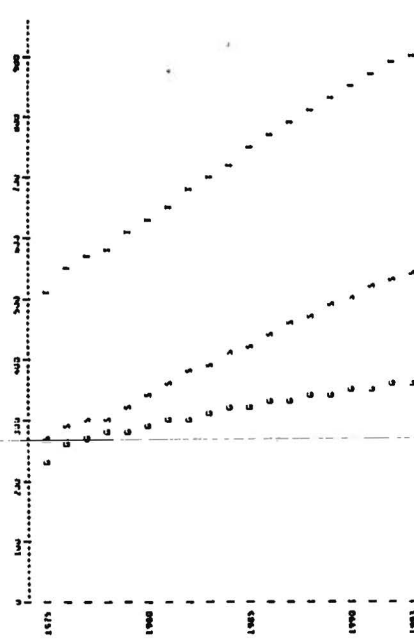
Island Coast



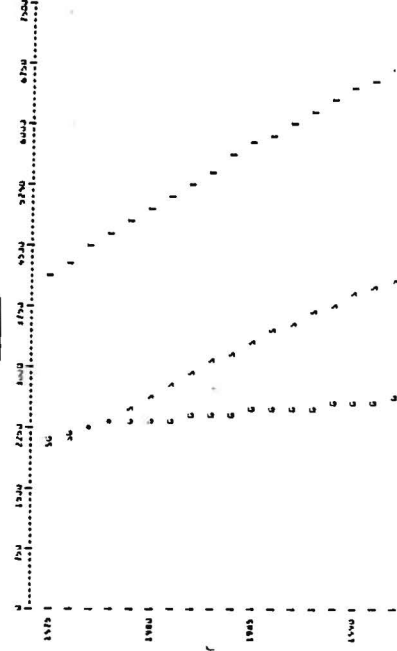
G.V.R.D.



Capital



Total



G = G.P.

S = Specialist

T = Total

GENERAL MANPOWER STOCK SIMULATOR (GMSS)

Simulations of Possible Numbers of Physicians
in British Columbia to 1993

Report S:6
Division of Health Services
Research and Development
Health Sciences Centre
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July, 1979

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