

PROVISION OF FP/GP HOSPITAL INPATIENT SERVICES IN NOVA SCOTIA -
1992/93 TO 2002/03

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EXECUTIVE SUMMARY

There is a current perception of a deficit in the provision of FP/GP hospital inpatient care. Recent reports from Ontario have furthered this notion. This paper attempts to quantify the situation on Nova Scotia. Some of the past controversy surrounding this service revolves around the situation at the Dartmouth General Hospital and the inability to attract sufficient FP/GP resources to provide inpatient care. The results of this work found that controlling for changes in inpatient capacity (i.e., changes in inpatient beds), overall service provision by FP/GPs across the Province has remained constant over time, and in some cases improved. A fee increase of 85% was applied to inpatient fee codes April 1, 1999 in an effort to attract additional resources to provide inpatient care. The results found here do not indicate this to have occurred. *Essentially inpatient service levels were found to be dependant on inpatient days.* Focusing solely on the DGH, the results are mixed with fluctuations in resource levels occurring over time. *However, the absolute levels of resources at DGH are favourable when compared to other areas in Nova Scotia.* There has been, however, an overall decline in the provision of supportive care services, with the decline being much more significant in the Halifax/Dartmouth area. This should be investigated more closely to determine if this has potential to impact patient care. *It might also be the case that care is becoming more fragmented in this sector.* Again, this should be monitored. The FP/GP workforce providing these services was found to be aging, although, at a slightly lesser rate than the overall FP/GP rate. Future planning in the health care system must take this into consideration.

Provision of FP/GP Hospital Inpatient Services in Nova Scotia – 1992/93 to 2002/03

Introduction

Throughout the last decade health care has undergone a number of changes in the delivery and structure of the system. Much change has occurred within the hospital sector, which has impacted the delivery of service. One of the basic services delivered within hospitals is the provision of the day-to-day inpatient visit by the FP/GP. Changes within the health care system have impacted on the delivery of this service. Significantly, has been the reduction in the number of inpatient beds that act as a control on the overall capacity for the FP/GP to bill the inpatient service. Factors related to the remuneration of FP/GPs for this work have occurred which might also impact on the provision of the service. From 1992 until 1997, fees for these services fluctuated, declining in real terms, then subsequently rose. In April 1999, specific inpatient fees were increased by approximately 85% with the goal of increasing provision of the service.

The objective of this study is to determine changes in patient access to inpatient visit services. To this end the analysis will focus on the FP/GP reaction to the changes in terms of service provision, and, to determine the profile of the typical FP/GP performing these services. The time period covers April 1, 1992 until March 31, 2003. The focus of the analysis revolves around the fee codes used to bill for inpatient work.

- *The initial visit (A035)* – billed only once upon patient admission to hospital. This fee pays 24 units and was not impacted by the fee increase April 1, 1999.
- *The daily visit (A041)* – this service can be billed daily until the patient stay reaches four weeks. This fee was paid at 7.3 units prior to April 1, 1999 and at 13.5 units after that time
- *The subsequent visit (A043)* – this service can be billed five times per week when a patient stay extends beyond four weeks. Prior to April 1, 1999, this service could only be billed 4.4 times per week on a per patient basis. As was the case with the A041, this service was paid at 7.3 units prior to April 1, 1999 and at 13.5 units after that time.

A secondary analysis will be made for the *supportive care fee code (A058)*. This code does not involve direct patient care, but rather involves the FP/GP providing a supportive role to the patient and/or other physicians in the provision of inpatient care. It can be billed up to three times during the first nine days of the patient stay and twice weekly, thereafter, for the remainder of the patient stay.

Methods

There are several complicating factors impacting on this analysis. Most obvious is the impact of the decline in the number of beds within the Province. This study will focus only on beds designated for use by FP/GPs to admit patients. A further complication is presented for the analysis of the A043 with the increase in the weekly visit allowance after April 1, 1999. The analysis will focus on three sections:

- *Aggregate level data* focusing on utilization data for all years in the study. The data will encompass inpatient days, FP/GP, visit service and patient counts.
- *Physician level data* comparing utilization data at the FP/GP demographic level. This will compare fiscal 2002/03 with 1992/93.
- *Impact of the fee changes* occurring April 1, 1999. This will make use of a mathematical model.

Inpatient services provided by FP/GPs will vary by region. FP/GPs are allowed to admit patients to most hospitals, while at the QE2, the role of the FP/GP is limited in this regard. The analysis will consider utilization patterns across four areas: the main focus will be Nova Scotia as a whole; further analysis will be made for Dartmouth General Hospital (DGH), Halifax/Dartmouth, and Nova Scotia less Halifax/Dartmouth (non-urban). The DGH has been controversial in the past in terms of a perceived inability to attract sufficient FP/GP resources to do inpatient work.

A proxy measure of patient access to FP/GP care will be created using two variables:

- *Inpatient days per FP/GP* – this will indicate the number of FP/GPs providing service based on capacity (measured as inpatients days). *Inpatient days represent a proxy for billing opportunities.*
- *Services per inpatient day* – to control for changes in service volumes on a per inpatient day basis.

The data uses only fee-for-service (FFS) data. The number of FP/GPs being remunerated for inpatient work outside of FFS has grown over time; however, as of 2002/03 it represented less than 4% of all FP/GPs. These fee changes should not have directly impacted the non-FFS physicians, although some indirect impact might have occurred. However, this analysis is beyond the scope of this study.

Aggregate Level Data

Annual aggregate data at the Provincial level is presented in Table 1. Certain portions of this data are also presented graphically in Chart 1.

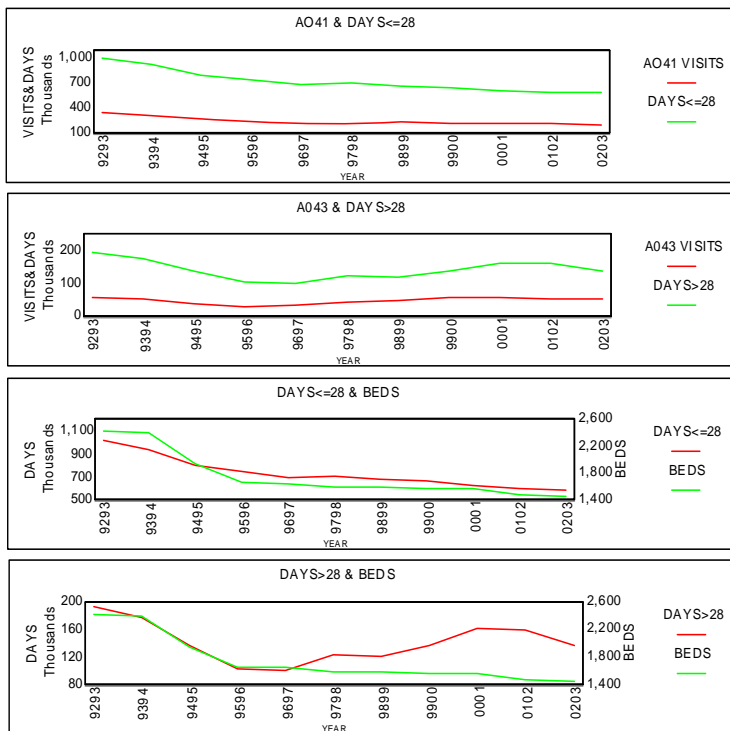
The data presented in Table 1 indicates a decline in total services. This is consistent with the reduction in the number of beds in the Province that occurred over this time period. This is reflected in the Days 1-4 weeks as well as the visits for the A035 and the A041. However, when looking at the A043 and the corresponding Days>4 weeks, we see a different pattern where both measures decline until approximately 1996 (consistent with bed closures). However, after that point both measures begin to rise again. Overall, Days>4 weeks as a proportion of total days began to increase after declining. Focusing only on the A043 visit data it appears that the increase from 4.4 to 5 weekly visits allowed per patient has played a significant role in this increase. However, the number of Days>4 weeks also increased simultaneously giving increased opportunity to bill for the A043. Conversely, the services billed for the A041 declined after the fee increase; however, the Days 1-4 weeks also declined. Initially, these results indicate that if demand for service is present the service will be provided (i.e., the level of patient days will determine the level of service provided). However, before drawing any conclusions a more thorough analysis will be presented in a later section.

The total number of FP/GPs performing the work has declined (Table 2). Again this is consistent with the decline in beds, however, there may be other conflicting factors including remuneration, training, and lifestyle issues. The rate of decline for FP/GPs supplying the A043 has been at a much lesser rate than that for the other three codes.

TABLE 1 – AGGREGATE LEVEL DATA – 1992/93 TO 2002/03 – NOVA SCOTIA

YEAR	SERV A035	SERV A041	SERV A043	SERV ¹ TOTAL	SERV A058	DAYS 1-4 WKS	DAYS >4WKS	FP/GP BEDS
9293	37,861	352,407	57,491	447,912	38,014	1,017,493	195,397	2,428
9394	35,721	322,485	52,935	404,184	28,764	931,548	179,215	2,402
9495	31,862	273,877	38,673	336,427	23,877	808,801	137,350	1,948
9596	28,647	249,547	32,800	305,251	22,904	743,944	104,711	1,665
9697	20,274	225,693	33,746	279,741	20,302	699,734	102,295	1,651
9798	18,949	227,540	45,967	291,501	17,994	707,698	124,999	1,594
9899	16,773	234,509	50,306	301,576	16,761	681,545	121,416	1,589
9900	16,527	227,341	60,653	306,722	18,728	663,167	136,880	1,578
0001	16,686	220,574	59,694	295,884	15,616	626,853	161,594	1,572
0102	16,428	216,915	55,822	287,423	14,686	606,432	160,888	1,477
0203	15,364	206,594	53,653	274,001	13,754	591,434	137,961	1,455

CHART 1 – AGGREGATE LEVEL DATA – 1992/93 – 2002/03 – NOVA SCOTIA



¹ Direct inpatient services only.

Unique patient counts have declined over time for the A035, the A041, and the A058 (Table 2). However, for the A043, the number of patients has actually increased.

Services per patient have also declined (Table 3). In the case of the A041, the decline in the associated average length of stay (ALOS) has been at a similar rate as the decline in services per patient. If we consider these two trends together, then the ALOS decline would represent a decline in billing opportunities on a per patient basis, and perhaps explains some of the decline in services on per patient basis. The ALOS and the unique patient counts have actually increased for the inpatient days associated with the A043. This situation associated with these visits and inpatient stays is unique and will be discussed more thoroughly in a later section.

The number of FP/GPs seeing each patient increased (Table 4A). A number of reasons might exist for this increase. It might be an indication of a decline in continuity of care. It could also reflect a change in practice style toward practice groups sharing patient care. Similar measures are found in the non-urban areas and at the DGH.

In Halifax/Dartmouth this same measure indicates that care is less fragmented (Table 4B). However, consider the lower service volumes and the lesser FP/GP involvement in inpatient care at the QE2.

Supportive care is a somewhat distinct service from the other services. At the Provincial level the overall volume of service has been decreasing at a rate greater than that for direct inpatient care services, being equal to 9.2% of direct inpatient work in 1992/93 declining to 5.3% in 2002/03. Supportive care services provided per inpatient day have declined when all inpatient days are considered and when only Days 1-4 weeks are considered.

TABLE 2 – UNIQUE PATIENTS AND FP/GP COUNTS – NOVA SCOTIA

YEAR	PATIENT				FP/GP			
	A035	A041	A043	A058	A035	A041	A043	A058
9293	37,017	36,543	2,295	10,084	684	721	461	520
9394	34,591	33,705	2,189	9,053	689	719	460	499
9495	30,675	30,034	1,755	8,159	639	674	443	488
9596	27,725	27,645	1,527	7,741	603	636	386	444
9697	22,817	25,600	1,782	6,872	555	600	388	406
9798	20,532	26,137	2,631	6,437	456	566	429	367
9899	19,932	26,479	2,778	6,112	451	555	452	359
9900	19,621	25,966	3,070	6,559	431	549	439	340
0001	18,773	25,123	2,926	6,005	429	528	431	327
0102	18,522	24,878	3,152	5,756	421	531	439	313
0203	17,243	23,477	3,226	5,686	415	503	413	318

TABLE 3 – SERVICES PER PATIENT – NOVA SCOTIA

YEAR	A041	A043	A058
9293	9.64	25.05	3.77
9394	9.57	24.18	3.18
9495	9.12	22.04	2.93
9596	9.03	21.48	2.96
9697	8.82	18.94	2.95
9798	8.71	17.47	2.80
9899	8.86	18.11	2.74
9900	8.76	19.76	2.86
0001	8.78	20.40	2.60
0102	8.72	17.71	2.55
0203	8.81	16.63	2.42

TABLE 4A – FP/GPs PER PATIENT – NOVA SCOTIA

CODE	1992/93	2002/03
A041	1.32	1.66
A043	1.21	1.89
A058	1.02	1.09

TABLE 4B – FP/GPs PER PATIENT – HALIFAX/DARTMOUTH

CODE	1992/93	2002/03
A041	1.27	1.59
A043	1.21	1.41
A058	1.02	1.05

Who Does the Work?

An aging FP/GP population is reflected in the work patterns observed with the hospital inpatient work (detailed data can be found in Appendix I and II). Chart 2 illustrates these patterns comparing aggregate visit levels for 2002/03 with 1992/93.

The shift over time toward older FP/GPs providing the service is clear. It is also clear that females provide fewer aggregate services than their male counterparts. This is a function of two factors: fewer female FP/GPs provide these services; and, females that do provide these services tend to provide fewer services on a per FP/GP basis. Females also tend to have fewer patients on a per FP/GP basis. Since 2000/01, females FP/GPs have provided about 37% the service volume of male FP/GPs on a per physician basis. This is illustrated in Chart 3. It is clear that older FP/GPs provide higher service levels on a per FP/GP basis.

Overall, total direct services on a per FP/GP basis have declined since 1992/93. This has occurred across most of the age/gender spectrum. Since 1992/93, both male and female FP/GPs provide fewer services on a per patient basis; however, unique patients per FP/GP have increased (Appendix II). This is partly the result of individual patient care being shared across more FP/GPs.

The average age of FP/GPs providing inpatient services weighted by service volume has increased from 46.1 years of age in 1992/93 to 48.3 years in 2002/03.² Table 5A shows the average age for FP/GPs doing inpatient visits by fee code. Interestingly, the average age of FP/GPs doing the A035 is younger than that for other fee codes.

The FP/GP population that provides supportive care work is slightly older than that for direct patient care services. This is shown in Table 5B.

Participation rates – participation rates (defined as supplying at least one service in a given year) have declined since 1992/93 for the A035 and the A041 (Table 6A and 6B). However, for the A043, the rate has remained fairly constant. Interestingly, this is being driven by an increase in female participation. In the male age categories, only males in the 55 to 64 year age group have maintained consistent participation rates from 1992/93. Interestingly, female participation rates are comparable with those for males in both 1992/93 and 2002/03 for the A035 and A041. In 1992/93, the rate for males doing the A043 was much higher than that for females. This gap closed by 2002/03. While females have comparable participation rates it is at a lower average service intensity than their male colleagues (approximately 37% the service levels of males since 2000/01).

The overall participation rate for supportive care is presented in Table 7A. It must be considered that service levels for the supportive care service are less than 10% those of the direct inpatient services. Table 7B indicates the total participation rate with all fee codes combined.

² This is in contrast to nursing home visits which showed values of 44.5 years in 1992 and 52.3 years in 2001. Overall, the weighted average age for all FP/GPs was 43.2 in 1992/93 and 48.0 in 2002/03.

CHART 2 – TOTAL VISIT DATA – NOVA SCOTIA

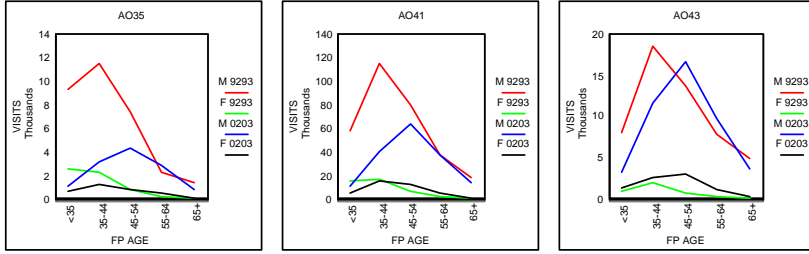


CHART 3 – VISITS PER FP/GP – NOVA SCOTIA

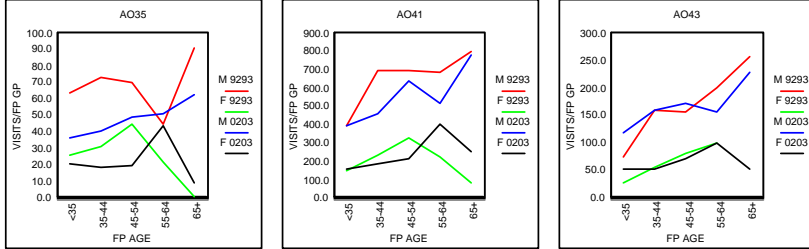


TABLE 5A – AVERAGE AGE FP/GPs DOING INPATIENT WORK - NOVA SCOTIA

SERVICE	92/93	02/03
A035	43.5	46.8
A041	46.1	48.4
A043	47.6	48.5
TOTAL	46.1	48.3

TABLE 5B – AVERAGE AGE FP/GPs DOING SUPPORTIVE CARE – NOVA SCOTIA

SERVICE	92/93	02/03
A058	45.9	49.9

TABLE 6A – PARTICIPATION RATE – 1992/93 – NOVA SCOTIA

AGE	AO35			AO41			AO43		
	M	F	T	M	F	T	M	F	T
<35	69.9%	71.5%	70.5%	69.9%	73.6%	71.4%	51.2%	28.5%	41.9%
35-44	74.5%	71.4%	73.5%	77.8%	73.3%	76.3%	54.7%	33.3%	47.6%
45-54	70.2%	61.3%	68.7%	77.5%	67.7%	75.8%	58.9%	32.3%	54.4%
55-64	51.5%	58.8%	52.6%	55.7%	64.7%	57.0%	41.2%	23.5%	38.6%
65+	25.9%	50.0%	27.4%	39.7%	25.0%	38.7%	32.8%	0.0%	30.6%
TOTAL	65.3%	69.4%	66.5%	69.5%	71.8%	70.1%	51.0%	29.9%	44.8%

TABLE 6B – PARTICIPATION RATE – 2002/03 – NOVA SCOTIA

AGE	AO35			AO41			AO43		
	M	F	T	M	F	T	M	F	T
<35	43.3%	46.8%	45.0%	43.3%	53.2%	48.1%	41.8%	41.9%	41.9%
35-44	44.0%	42.7%	43.4%	50.3%	56.0%	52.9%	41.7%	35.3%	38.8%
45-54	51.7%	44.8%	49.3%	58.7%	63.5%	60.4%	55.8%	43.8%	51.5%
55-64	46.3%	37.9%	44.7%	58.5%	44.8%	55.9%	50.4%	41.4%	48.7%
65+	20.7%	50.0%	24.2%	29.3%	62.5%	33.3%	27.6%	62.5%	31.8%
TOTAL	44.4%	43.8%	44.1%	51.6%	56.8%	53.5%	46.2%	40.0%	43.9%

TABLE 7A – PARTICIPATION RATE – A058 – NOVA SCOTIA

YEAR	RATE
1992/93	50.6%
2002/03	33.8%

TABLE 7B – PARTICIPATION RATE – ALL CODES – NOVA SCOTIA

YEAR	RATE
1992/93	73.4%
2002/03	62.6%
YEAR	FP/GPs doing >49 VISITS/YEAR
1992/93	58.1%
2002/03	47.8%

Concentration of service – a measure was created to compare the relative distribution of services across FP/GPs. This measure uses the proportion of direct inpatient services (exclusive of supportive care) provided by the top 20% of the service providers (i.e., the top 20% of FP/GPs in terms of service volumes) to this end.

Overall, the distribution of services and patients has become less concentrated since 1992/93. A closer look at the data indicates this change occurred as a result of a shift of services from high volume providers to the lowest volume providers (i.e., the distribution of service provision has become more equitable across the FP/GPs that provide them). This is shown in Chart 4. This trend could be further indication of a fragmentation of care.

The low relative volume of the supportive care service might be reflected in the much higher concentration ratio observed. This is presented in Table 8. The higher ratio for the A058 would indicate relatively more infrequent provision of service among a greater proportion of service providers than with the other codes. Consider that the average provision of the A058 is less than 10% that of the direct care codes. In fact, of the FP/GPs providing the service, approximately 50% provided 13 or fewer services in 2002/03 versus a per FP/GP average of 43.

What Drives Service Provision?

In the fee-for-service sector there are a number of factors impacting the supply of service, including patient need, and FP/GP willingness and ability to supply service. Other factors further impact service levels including relative remuneration levels and changes in the health care sector itself. As discussed above, two major factors, fee levels and patient capacity (inpatient days), have potentially impacted the market for FP/GP hospital inpatient services. A regression analysis was implemented to determine the impact of these factors (Figure 1). The results are presented in the following section. Limitations with the data only allowed regression analysis to be used at the Provincial and non-urban levels.

Figure 1 – RANDOM EFFECTS MODEL

$$Y_{it} = a + b_i x_{it} + e_{it} + u_i$$

Where:

- Y = visit services
- a = constant
- b = coefficients
- x = (FP/GP age, gender, origin, practice location, fee level, year, inpatient days, time period)
- e = residual
- u = county specific residual
- i = ith county
- t = time

The analysis focused on the A041 and the A043 as the A035 was not subject to a fee increase. As well the A035 is administered only on admission to hospital and is more a function of FP/GP willingness to admit patients to hospital and the capacity of the hospital to take in patients (i.e., available beds). The service volumes for the A041 and A043 are subject to fluctuation for a number of different reasons beyond bed capacity including, acuity level of patient, and FP/GP ability or willingness to provide the service. These can be impacted by fee levels and the number of inpatient days.

Daily visit A041 (1 to 4 weeks) – this visit can be administered one per day per patient. Acute care beds declined as did the number of inpatient Days 1-4 weeks. Visits for this service declined in a similar pattern, as did the number of FP/GPs providing the service. The raw data at the

CHART 4 – DISTRIBUTION OF DIRECT INPATIENT SERVICES BY FP/GPs

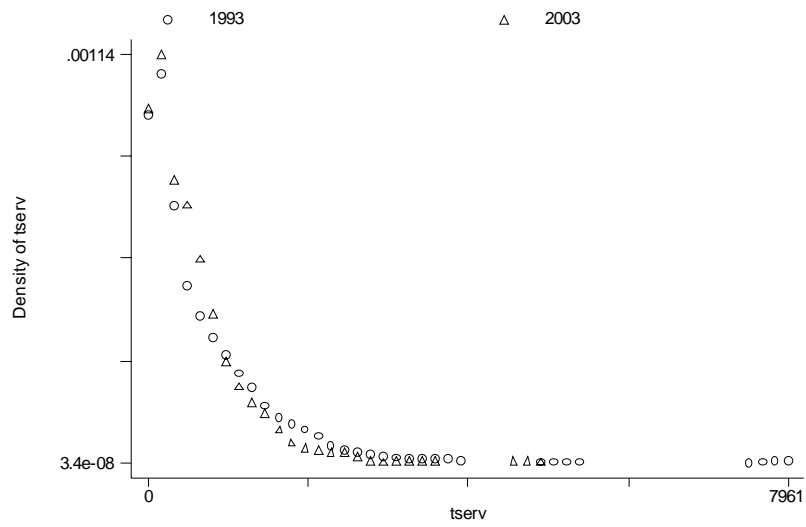


TABLE 8 – CONCENTRATION RATIOS – NOVA SCOTIA

YEAR	A035	A041	A043	A058
92/93	58.6%	59.3%	65.4%	73.1%
02/03	59.5%	52.7%	61.5%	73.0%

Provincial level indicates the number of days declined at a greater rate than the number of visits from 1992/93 to 2002/03. At the non-urban level visits fell at a slightly higher rate than days. A number of complicating factors (beds, numbers of FP/GPs, FP/GP age, gender, and origin, inpatient days, relative fee levels, county level variations) were present so to control for these factors the regression analysis was used. The regression analysis confirmed a strong relation between days and visit services ($p=.0001$) at both levels.

The 85% increase applied to the A041 fee April 1, 1999 might also have impacted the service levels. The intent of the increase was to attract additional service provision. The raw data from April 1, 1999 onward indicates a decline in the number of services at both the Provincial and non-urban levels. Again a number of complicating factors might have existed. To control for these factors the regression analysis was used. The regression indicated no significant effect between the fee increase and service provision. This was the case at both levels.

Subsequent visit A043 (>4 weeks) – this analysis is complicated by the fact that the allowance for the visit was increased from 4.4 visits per patient per week to 5. Looking solely at the raw data for visits before and after April 1999 (Table 9), it would appear at the Provincial and non-urban levels, the increase in the weekly allowance did in fact increase the number of visit services (visits declined at the DGH and in Halifax/Dartmouth). However, the eligible patient days also increased (i.e., capacity to bill increased), although at a lesser rate than the visits.

At the same time the number of FP/GPs doing the work declined slightly. This rules out the fact that the increase in the weekly billing allowance attracted new FP/GPs to provide the service. However, the change might have led the existing service providers to increase their service provision. A measure was generated to compare the change in weekly billing capacity for the A043. All areas, with the exception of Halifax/Dartmouth, show an increase in average weekly visits after the weekly capacity increase April 1, 1999. By 2000/01, the weekly capacity had declined at the Provincial and the non-urban areas. (Days >4 weeks increased by 18% and 23% in these areas for 2000/01. This issue will be discussed later.) It is possible the increase in the weekly visit allowance led to a temporary billing increase.

Regression analysis was undertaken at the Provincial and non-urban levels to try and determine the drivers of the provision of the A043. Similar to the A041, inpatient days was strongly significant ($p=.0001$) at both levels. However, unlike the A041, the impact of the fee increase April 1, 1999 was significant at both levels. It was at a weaker level of significance ($p=.1$) than for inpatient days. It is also possible that it was not the fee increase but rather the increase in the weekly billing allowance that led to this result. However, the analysis does not separate the two effects.

It can be concluded that changes in inpatient days did result in the FP/GPs adjusting services to meet demand. However, the impact of the fee increase on service provision is less certain. There is some evidence it might have played some role, however, the results of the analysis don't allow for complete certainty in this regard.

Halifax/Dartmouth and DGH

Raw utilization data was analyzed for Halifax/Dartmouth and DGH (Table 10). The data is complicated by the fact that the FP/GP role in direct inpatient care at the QE2 is limited relative to other facilities, and by the fact that complete data is not available for DGH until 1997/98.

TABLE 9 – UTILIZATION DATA - A043

YEAR	DAYS >4 wks	A043 VISITS	FP/GPs	DAYS >4 wks HFX/DART	A043 VISITS	FP/GPs
Nova Scotia						
1998/99	121,416	50,306	452	55,603	7,299	114
1999/00	136,880	60,653	439	59,114	7,120	103
CHANGE	12.7%	20.6%	(-2.9%)	6.3%	(-2.5%)	(-9.6)
Non-urban				DGH		
1998/99	65,813	43,007	338	5,722	4,006	65
1999/00	77,766	53,533	336	5,029	3,178	65
CHANGE	18.2%	24.0%	(-0.6%)	(-12.1%)	(-20.7%)	N/C

TABLE 10 – HALIFAX/DARTMOUTH (92/39–02/03) AND DGH (97/98-02/03)

	DAYS<4WKS	A041	DAYS>4WKS	A043
HFX/DART	-42.0%	-16.3%	-1.9%	141.8%
DGH	-28.0%	-26.5%	66.9%	10.6%

The reduced role of the FP/GP at the QE2 is reflected in the volume of services as a proportion of inpatient days in Halifax/Dartmouth running at about 10%. In the non-urban areas this figure is approximately 55%. Days 1-4 weeks declined at a greater rate than the A041 in Halifax/Dartmouth and the DGH. Services for the A043 increased significantly over time; however, service volumes are only about 15% that of the non-urban areas. It is difficult to ascertain why this large increase in the A043 occurred. The increase began in 1997/98, at the same time the Days >4 weeks reversed a decline. It can only be speculated this increase might be due in part to an increasing number of patients awaiting placement in long-term care beds. It does appear, however, that inpatient days do determine to some extent service levels in Halifax/Dartmouth. This also appears to be the case at the DGH for the A041. For the A043, it is a little more difficult to ascertain. There does appear to be some correlation; however, a doubling of Days >4 weeks in 2001/02 over 2000/01 has not been met with a similar response in terms of provision of visit services. This trend is difficult to explain. Again possible speculation would indicate it is the result of patients being placed in the DGH while awaiting placement in long-term care facilities. The number of A043 services provided increased by only 4% over this same time period.

Supportive care has declined in both these areas. In Halifax/Dartmouth, as a proportion of direct inpatient services, it is higher than in the non-urban areas. However, this proportion has plummeted from 33.9% in 1992/93 to 9.8% in 2002/03. In the non-urban areas this rate was 4.5% in 2002/03; however, it had fluctuated over time from a high rate of 6.7% in 1992/93 to its current level.

Access to care

The issue of adequate care being provided to hospital inpatients is often raised. Although this study does not offer answers in terms of quality of care, some basic utilization data is available to measure access to care in terms of patient/FP/GP encounters given the capacity in the inpatient sector. Two access measures are presented to this effect and are presented in the following tables. Table 11 indicates data at the Provincial level.

These measures indicate a number of different trends:

- Days per FP/GP have declined indicating that in terms of FP/GPs providing service, greater numbers are participating when adjusting for capacity (measured in terms of inpatient days).
- Services per day have increased indicating in terms of patient days that FP/GPs are providing more services on a per day basis.

The non-urban areas show slightly different trends (Table 12). Overall, more FP/GPs participate in this care relative to capacity as evidenced by the decline in the days per FP/GP measure. When controlling for service volumes, overall services have remained flat as evidenced by the services per day measure. However, this was the result of a slight decline in the A041 being offset by a large increase in the A043. Using these measures as a proxy for access, it does not appear that access has been compromised over time.

Access to care measures were generated for Halifax/Dartmouth and DGH (Table 13).

TABLE 11 – ACCESS TO CARE MEASURES – PROVINCIAL LEVEL

YEAR	DAYS/GP			SERV/DAY			GPs			
	1-4WKS	<4WKS	TOTAL	A041	A043	TOTAL	A058	A041	A043	TOTAL
9293	1,411.2	423.9	1,682.2	0.346	0.294	0.338	0.031	721	461	721
9394	1,295.6	389.6	1,544.9	0.346	0.295	0.338	0.026	719	460	719
9495	1,200.0	310.0	1,397.6	0.339	0.282	0.330	0.025	674	443	677
9596	1,169.7	271.3	1,319.8	0.335	0.313	0.333	0.027	636	386	643
9697	1,166.2	263.6	1,297.8	0.323	0.330	0.323	0.025	600	388	618
9798	1,250.3	291.4	1,394.8	0.322	0.368	0.328	0.022	566	429	597
9899	1,228.0	268.6	1,354.1	0.344	0.414	0.355	0.021	555	452	593
9900	1,208.0	311.8	1,362.9	0.343	0.443	0.360	0.023	549	439	587
0001	1,187.2	374.9	1,378.4	0.352	0.369	0.355	0.020	528	431	572
0102	1,142.1	366.5	1,334.5	0.358	0.347	0.355	0.019	531	439	575
0203	1,175.8	334.0	1,343.3	0.349	0.389	0.357	0.019	503	413	543

TABLE 12 – ACCESS TO CARE MEASURES – NON-URBAN AREAS

YEAR	DAYS/GP			SERV/DAY			GPs			
	1-4WKS	<4WKS	TOTAL	A041	A043	TOTAL	A058	A041	A043	TOTAL
9293	1,175.2	311.8	1,466.9	0.554	0.469	0.540	0.036	488	367	469
9394	1,094.4	299.0	1,383.8	0.551	0.458	0.535	0.030	473	356	451
9495	991.8	227.5	1,203.6	0.537	0.446	0.524	0.030	451	346	437
9596	950.6	192.0	1,125.3	0.530	0.493	0.525	0.032	433	306	418
9697	969.2	195.4	1,102.9	0.506	0.515	0.507	0.032	404	299	408
9798	1,020.5	222.3	1,152.6	0.493	0.562	0.504	0.027	387	318	404
9899	1,001.8	194.7	1,099.3	0.525	0.653	0.544	0.028	382	338	408
9900	1,014.2	231.4	1,125.6	0.515	0.688	0.545	0.031	375	336	407
0001	982.8	286.5	1,118.9	0.526	0.525	0.526	0.028	368	335	409
0102	916.2	234.1	1,017.8	0.538	0.571	0.544	0.027	381	348	423

TABLE 13 – ACCESS TO CARE MEASURES – HALIFAX/DARTMOUTH

YEAR	DAYS/GP			SERV/DAY			GPs			
	1-4WKS	<4WKS	TOTAL	A041	A043	TOTAL	A058	A041	A043	TOTAL
9293	1,905.5	861.2	2,083.1	0.078	0.048	0.073	0.025	233	94	252
9394	1,682.5	699.8	1,816.0	0.090	0.057	0.085	0.020	246	104	268
9495	1,621.1	604.6	1,750.7	0.093	0.061	0.088	0.019	223	97	240
9596	1,637.1	574.3	1,681.3	0.095	0.083	0.094	0.021	203	80	225
9697	1,572.3	492.9	1,676.4	0.090	0.083	0.089	0.017	196	89	210
9798	1,747.2	489.2	1,901.8	0.105	0.114	0.106	0.015	179	111	193
9899	1,727.5	487.7	1,916.0	0.112	0.131	0.115	0.012	173	114	185
9900	1,625.4	573.9	1,899.7	0.111	0.120	0.112	0.014	174	103	180
0001	1,657.3	683.7	2,029.4	0.114	0.142	0.119	0.009	160	96	163
0102	1,715.7	872.9	2,215.7	0.113	0.117	0.114	0.009	150	91	152

Within Halifax/Dartmouth services per day have increased for both the A041 and A043. Overall days per FP/GP have actually increased since 1992/93 having fluctuated in the interim years. The increase was driven to some extent by an unusually large increase (21%) in the Days >4 Weeks that occurred in 2001/02. The situation at DGH is almost identical with the exception that overall services and A043 services on a per day basis have declined (Table 14). Again, prior to a large increase for Days >4 weeks that occurred in 2001/02, access measures fluctuated over time.

TABLE 14 – ACCESS TO CARE MEASURES – DGH

YEAR	DAYS/GP			SERV/DAY						
	1-4WKS	<4WKS	TOTAL	A041	A043	TOTAL	A058	A041	A043	TOTAL
9798	477.8	72.8	539.6	0.631	0.659	0.634	0.044	80	68	80
9899	531.2	88.0	611.7	0.646	0.700	0.653	0.038	71	65	71
9900	521.6	77.4	584.2	0.643	0.632	0.642	0.044	71	65	72
0001	475.0	74.3	523.6	0.661	0.834	0.682	0.038	64	56	66
0102	500.1	161.9	650.2	0.645	0.437	0.597	0.037	55	51	55

At an absolute level, despite the fluctuations, access measures are favourable at DGH when compared to the other areas indicated above. This is apparent in the days per FP/GP and services per day measures.

Discussion

The analysis seems to indicate the most significant factor driving the provision of hospital inpatient work is the capacity in terms of inpatient days. Since 1992/93, the overall effort put forth by FP/GPs in terms of service supply has remained consistent and perhaps improved when controlling for inpatient capacity. Based on the data, access to care at the Provincial and non-urban level appears to have improved slightly, at least when compared with 1992/93. Fewer FP/GPs do this work; however, when the decline in beds and the corresponding measure of patient days is considered, basic measures of access have remained constant, and in some cases improved. The same measures at the Halifax/Dartmouth and DGH levels have fluctuated over time making it difficult to draw firm conclusions. In terms of services per day, the trend has improved over time, however, when looking at days per FP/GP, this same improvement does not appear in the data. At the DGH, when compared with other areas, measures of access are favourable.

In the case of the A043, the rapid rise in the associated patient Days>4 weeks has raised a key question as to what has led to this increase. The acuity level of the patient must be considered. It is speculated the increase in Days >4 weeks is being driven in part by patients waiting for long-term care placement. If this were the case then would the same level of service be required as would be the case of a more typical acute care patient. There is no concrete evidence to support this; however, there is some circumstantial evidence. Patients in the long stays grew only in the 85 and older age group, and, at a much greater rate than the population increase within the Province for this age group. This age demographic is most likely to require nursing home care³. It could also be the result of the increased focus on geriatric care which might also have increased patient admissions of older patients and who require longer stays.

Utilization of the supportive care services has declined at a much greater rate than that for direct patient care services. This could be the result of a number of factors. The nature of the service does not involve direct provision of care. Direct provision of care is the responsibility of other physicians. It is also apparent the decline in the provision of supportive care service is greater amongst younger FP/GPs when compared to the direct care fee codes. This could be a function of younger FP/GPs choosing a different lifestyle than their predecessors. Given that it does not involve the provision of direct care, it is possible that younger FP/GPs would not place supportive care services high on what they perceive as a priority service for their patients. If the lifestyle choice involved fewer clinical hours, then perhaps FP/GPs would opt out of lower priority services; in this case, the provision of supportive care services. It could also be a function of the training of younger FP/GPs. *The rate of decline has been much greater in Halifax/Dartmouth.* The decline across all areas should be considered in the context of the following statement: *'A question must be raised as to the impact of FP/GPs electing not to provide this service given the long-term knowledge of the patient they possess.'*

While access might not have declined, evidence does exist that care might becoming more fragmented in this sector. This might be evidenced by the data indicating unique patients are being seen by more FP/GPs as part of their care than in the past. This might also be further evidenced by the declining concentration ratio indicating that the distribution of services amongst FP/GPs who provide the service is more widely distributed. This could be the function of a move toward practice groups and the sharing of patient care. Also, the decline in the supportive care services might also indicate fragmentation of care. This study doesn't attempt to determine if these trends have a positive or negative impact; however, it is an issue that should be further investigated.

The provision of care in the hospital inpatient sector has differed from the patterns experienced in the nursing home sector. Service provision in the nursing home sector has declined even after controlling for capacity. A number of reasons why this might not have occurred within the hospital inpatient sector should be considered. Obligations associated with being affiliated with a hospital might include maintaining a

³ The Provision of Nursing Home Visits in Nova Scotia – an Analysis of Family/General Practice – 1993 to 2001. Health Economics, Nova Scotia Department of Health. 2003

minimum level of care within the hospital. It could also be the case that FP/GPs are in the hospital carrying out other duties making it more efficient to provide the inpatient service. This could be in the form of outpatient clinics or surgical assists. These opportunities would not be present in a nursing home setting making it more difficult for a FP/GP to focus on provision of care in such settings.

The impact of the fee increase on service provision is not clear. There is no evidence it impacted on the provision of the A041 service. While there is some evidence it might have impacted on the A043, it is not decisive. It might have been the case that the increase in the weekly billing allowance led to the increase. Prior the increase in capacity the service might have been provided but no remuneration made. Subsequently no service record would be submitted. *The observed response in terms of service provision brings up two questions: 1) did a problem in terms of provision of inpatient service ever exist; and, 2) if there was a problem, why has service provision not increased.*

Conclusion

The overall provision of inpatient care appears to be at comparable levels when compared to 1992/93 when controlling for inpatient capacity. Physician numbers and participation rates have declined, but this trend appears more a function of hospital capacity. There has been some decline in the supportive care area which should be further monitored. Similar to the overall FP/GP population, which is aging, the group of FP/GPs providing inpatient care is also aging. There are at least two views on this trend: 1) it is a function of FP/GPs aging with their patient population, and assuming older patients are more likely to require hospitalization, it would follow that older FP/GPs are more likely to provide inpatient services; or, 2) younger FP/GPs have made a decision not to provide this type of service. Female participation is increasing as a proportion of all FP/GPs. Female service provision is currently much lower (ignoring quality of care issues) than that for male FP/GPs at about 37% for 2002/03. Provision must be made to ensure this trend does not lead to a gap in care. As this study showed, continuity of care may becoming more fragmented. Despite an 85% increase in funding for these fees additional FP/GPs, did not enter the market to provide these services. It appears that the major factor driving provision of the service is the presence of patients in the hospital beds.

Although this study was designed to focus mainly on the role of the FP/GP in the provision of care, the role of the specialist must not be ignored. It is possible that changes within the system have led to a situation where the specialist's role in inpatient care has changed over time. It might be assumed the reduction in bed capacity has led to greater average complexity involved with inpatient care (only more complex case are admitted leading to higher average complexity on a per case basis). If this is the case, then perhaps the role of the FP/GP has diminished in the overall inpatient sector assuming specialists might be required to provide care for a greater proportion of inpatients given this increased average complexity.

BIBLIOGRAPHY

Chan, B. *The Declining Comprehensiveness of Primary Care*, CMAJ, February 19, 2002.

Hurley, J., Labelle, R. *Relative Fees and the Utilization of Physicians' Services in Canada*. Centre for Health Economic and Policy Analysis. February 1994.

Kennedy, P. *A Guide to Econometrics*, 4th Ed. MIT Press. 1998.

Nova Scotia Department of Health. *General/Family practice in Nova Scotia, Recent Trends Future Directions*. June 10, 2002.

Nova Scotia Department of Health. *The Provision of Nursing Home Visits in Nova Scotia – An Analysis of Family/General Practice – 1993 to 2001*. February, 2003.

Watson, D., Bogdanovic, B., Heppner, P., Katz, A., Reid, R., Roos, N. *Supply, Availability and Use of Family Physicians in Winnipeg*. Manitoba Centre for Health Policy. May 2003.

APPENDIX I – SERVICE SUPPLY

YEAR	AGE	FP/GPs		SUPPLYING								DISTRIBUTION OF FP/GPs							
		SERVICE		A035		A041		A043		A058		A035		A041		A043		A058	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1992/93	<35	146	103	146	106	107	41	88	78	21.3%	15.1%	20.2%	14.7%	23.2%	8.9%	16.9%	15.0%		
1992/93	35-44	158	75	165	77	116	35	115	66	23.1%	11.0%	22.9%	10.7%	25.2%	7.6%	22.1%	12.7%		
1992/93	45-54	106	19	117	21	89	10	86	14	15.5%	2.8%	16.2%	2.9%	19.3%	2.2%	16.5%	2.7%		
1992/93	55-64	50	10	54	11	40	4	44	8	7.3%	1.5%	7.5%	1.5%	8.7%	0.9%	8.5%	1.5%		
1992/93	65+	15	2	23	1	19	0	19	2	2.2%	0.3%	3.2%	0.1%	4.1%	0.0%	3.7%	0.4%		
GENDER		475	209	505	216	371	90	352	168	69.4%	30.6%	70.0%	30.0%	80.5%	19.5%	67.7%	32.3%		
TOTAL			684		721		461		520										
YEAR		A035		A041		A043		A058		A035		A041		A043		A058			
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
2002/03	<35	29	29	29	33	28	26	21	20	7.0%	7.0%	5.8%	6.6%	6.8%	6.3%	6.6%	6.3%		
2002/03	35-44	77	64	88	84	73	53	50	60	18.6%	15.4%	17.5%	16.7%	17.7%	12.8%	15.7%	18.9%		
2002/03	45-54	89	43	101	61	96	42	61	44	21.4%	10.4%	20.1%	12.1%	23.2%	10.2%	19.2%	13.8%		
2002/03	55-64	57	11	72	13	62	12	38	6	13.7%	2.7%	14.3%	2.6%	15.0%	2.9%	11.9%	1.9%		
2002/03	65+	12	4	17	5	16	5	14	4	2.9%	1.0%	3.4%	1.0%	3.9%	1.2%	4.4%	1.3%		
GENDER		264	151	307	196	275	138	184	134	63.6%	36.4%	61.0%	39.0%	66.6%	33.4%	57.9%	42.1%		
TOTAL			415		503		413		318										

APPENDIX II – SERVICE SUPPLY BY FEE CODE

A035		MALE				FEMALE				MALE		FEMALE	
YEAR	AGE	TOTAL SERV	TOTAL PATIENT	TOTAL FP	SERV/PAT	TOTAL SERV	TOTAL PATIENT	TOTAL FP	SERV/PAT	SERV/FP	PAT/FP	SERV/FP	PAT/FP
1992/93	<35	9,341	8,751	146	1.1	2,637	2,509	103	1.1	64.0	59.9	25.6	24.4
1992/93	35-44	11,499	10,359	158	1.1	2,303	2,160	75	1.1	72.8	65.6	30.7	28.8
1992/93	45-54	7,392	6,465	106	1.1	845	774	19	1.1	69.7	61.0	44.5	40.7
1992/93	55-64	2,258	1,920	50	1.2	213	194	10	1.1	45.2	38.4	21.3	19.4
1992/93	65+	1,371	1,131	15	1.2	2	2	2	1.0	91.4	75.4	1.0	1.0
	TOTAL	31,861	28,626	475	1.1	6,000	5,639	209	1.1	67.1	60.3	28.7	27.0
2002/03	<35	1,043	954	29	1.1	597	554	29	1.1	36.0	32.9	20.6	19.1
2002/03	35-44	3,135	2,903	77	1.1	1,203	1,147	64	1.0	40.7	37.7	18.8	17.9
2002/03	45-54	4,365	3,822	89	1.1	838	791	43	1.1	49.0	42.9	19.5	18.4
2002/03	55-64	2,922	2,516	57	1.2	481	414	11	1.2	51.3	44.1	43.7	37.6
2002/03	65+	746	633	12	1.2	34	33	4	1.0	62.2	52.8	8.5	8.3
	TOTAL	12,211	10,828	264	1.1	3,153	2,939	151	1.1	46.3	41.0	20.9	19.5
A041		MALE				FEMALE				MALE		FEMALE	
YEAR	AGE	TOTAL SERV	TOTAL PATIENT	TOTAL FP	SERV/PAT	TOTAL SERV	TOTAL PATIENT	TOTAL FP	SERV/PAT	SERV/FP	PAT/FP	SERV/FP	PAT/FP
1992/93	<35	57,928	9,892	146	5.9	15,494	3,353	106	4.6	396.8	67.8	146.2	31.6
1992/93	35-44	115,310	15,453	165	7.5	17,619	2,965	77	5.9	698.8	93.7	228.8	38.5
1992/93	45-54	80,919	9,819	117	8.2	6,853	1,098	21	6.2	691.6	83.9	326.3	52.3
1992/93	55-64	37,313	3,983	54	9.4	2,479	419	11	5.9	691.0	73.8	225.4	38.1
1992/93	65+	18,415	1,529	23	12.0	77	15	1	5.1	800.7	66.5	77.0	15.0
	TOTAL	309,885	40,676	505	7.6	42,522	7,850	216	5.4	613.6	80.5	196.9	36.3
2002/03	<35	11,345	2,573	29	4.4	5,229	1,501	33	3.5	391.2	88.7	158.5	45.5
2002/03	35-44	40,528	7,980	88	5.1	15,881	4,475	84	3.5	460.5	90.7	189.1	53.3
2002/03	45-54	64,109	11,056	101	5.8	12,720	2,884	61	4.4	634.7	109.5	208.5	47.3
2002/03	55-64	37,068	5,892	72	6.3	5,203	864	13	6.0	514.8	81.8	400.2	66.5
2002/03	65+	13,269	1,500	17	8.8	1,242	219	5	5.7	780.5	88.2	248.4	43.8
	TOTAL	166,319	29,001	307	5.7	40,275	9,943	196	4.1	541.8	94.5	205.5	50.7

APPENDIX II – SERVICE SUPPLY BY FEE CODE

A043													
		MALE				FEMALE				MALE		FEMALE	
YEAR	AGE	TOTAL SERV	TOTAL PATIENT	TOTAL FP	TOTAL SERV/PAT	TOTAL SERV	TOTAL PATIENT	TOTAL FP	TOTAL SERV/PAT	SERV/FP	PAT/FP	SERV/FP	PAT/FP
1992/93	<35	8,100	531	107	15.3	1,049	109	41	9.6	75.7	5.0	25.6	2.7
1992/93	35-44	18,586	888	116	20.9	1,921	128	35	15.0	160.2	7.7	54.9	3.7
1992/93	45-54	13,793	615	89	22.4	791	51	10	15.5	155.0	6.9	79.1	5.1
1992/93	55-64	7,986	276	40	28.9	403	13	4	31.0	199.7	6.9	100.8	3.3
1992/93	65+	4,862	183	19	26.6	0	0	0	n/a	255.9	9.6	n/a	n/a
	TOTAL	53,327	2,493	371	21.4	4,164	301	90	13.8	143.7	6.7	46.3	3.3
2002/03	<35	3,307	397	28	8.3	1,336	219	26	6.1	118.1	14.2	51.4	8.4
2002/03	35-44	11,751	1,398	73	8.4	2,715	472	53	5.8	161.0	19.2	51.2	8.9
2002/03	45-54	16,663	1,816	96	9.2	3,050	491	42	6.2	173.6	18.9	72.6	11.7
2002/03	55-64	9,700	915	62	10.6	1,196	132	12	9.1	156.5	14.8	99.7	11.0
2002/03	65+	3,680	234	16	15.7	255	28	5	9.1	230.0	14.6	51.0	5.6
	TOTAL	45,101	4,760	275	9.5	8,552	1,342	138	6.4	164.0	17.3	62.0	9.7
ALL DIRECT													
		MALE				FEMALE				MALE		FEMALE	
YEAR	AGE	TOTAL SERV	TOTAL PATIENT	TOTAL FP	TOTAL SERV/PAT	TOTAL SERV	TOTAL PATIENT	TOTAL FP	TOTAL SERV/PAT	SERV/FP	PAT/FP	SERV/FP	PAT/FP
1992/93	<35	75,369	19,174	153	3.9	19,180	5,971	112	3.2	492.6	125.3	171.3	53.3
1992/93	35-44	145,395	26,700	172	5.4	21,843	5,253	81	4.2	845.3	155.2	269.7	64.9
1992/93	45-54	102,104	16,899	119	6.0	8,489	1,923	21	4.4	858.0	142.0	404.2	91.6
1992/93	55-64	47,557	6,179	59	7.7	3,095	626	12	4.9	806.1	104.7	257.9	52.2
1992/93	65+	24,648	2,843	24	8.7	79	17	2	4.6	1,027.0	118.5	n/a	n/a
	TOTAL	395,073	71,795	527	5.5	52,686	13,790	228	3.8	749.7	136.2	231.1	60.5
2002/03	<35	15,695	3,924	34	4.0	7,162	2,274	34	3.1	461.6	115.4	210.6	66.9
2002/03	35-44	55,414	12,281	96	4.5	19,799	6,094	87	3.2	577.2	127.9	227.6	70.0
2002/03	45-54	85,137	16,694	102	5.1	16,608	4,166	63	4.0	834.7	163.7	263.6	66.1
2002/03	55-64	49,690	9,323	72	5.3	6,880	1,410	13	4.9	690.1	129.5	529.2	108.5
2002/03	65+	17,695	2,367	19	7.5	1,531	280	5	5.5	931.3	124.6	306.2	56.0
	TOTAL	223,631	44,589	323	5.0	51,980	14,224	202	3.7	692.4	138.0	257.3	70.4