

CHAPTER 3

3.1 RESULTS

The data was divided into two sets (Before March 2003 and After March 2003). The sample size of 73850 was reached after inclusion and exclusion criteria had been applied to the original data set. The SAS System, Version 8 was applied to the two sets of data [(I) and (II)].

3.2 REQUESTED FREQUENCY OF TESTS

The requested frequency of tests was used in order to compare the frequency with which each test as well as specific combinations of tests were being ordered prior to the release of the evidence-based guidelines and after they were issued.

The data was entered into the SAS System and the results were as follows:

TABLE 3.2.1 REQUESTED FREQUENCY BEFORE MARCH 2003

SPECIFIC ANTIBODY TITER	FREE T4	TSH	FREE T3	FREQUENCY
-	-	-	1	1306
-	-	1	-	13631
-	-	1	1	213
-	1	-	-	337
-	1	-	1	95
-	1	1	-	5750
-	1	1	1	1292
1	-	-	-	4500
1	-	-	1	42
1	-	1	-	444
1	-	1	1	2
1	1	-	-	8
1	1	-	1	3
1	1	1	-	240
1	1	1	1	39
			TOTAL	27902

TABLE 3.2.2 REQUESTED FREQUENCY AFTER MARCH 2003

SPECIFIC ANTIBODY TITER	FREE T4	TSH	FREE T3	FREQUENCY
-	-	-	1	638
-	-	1	-	23440
-	-	1	1	213
-	1	-	-	741
-	1	-	1	50
-	1	1	-	10520
-	1	1	1	717
1	-	-	-	7717
1	-	-	1	39
1	-	1	-	1232
1	-	1	1	20
1	1	-	-	30
1	1	-	1	2
1	1	1	-	555
1	1	1	1	34
			TOTAL	45948

3.3 STATISTICAL REPRESENTATION OF RESULTS

TABLE 3.3.1. TSH

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILITY FISHER'S EXACT TEST (2-TAIL)
TSH	(48.9%)	(51.0%)	p <0.001

TABLE 3.3.2. FT3

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILITY FISHER'S EXACT TEST (2-TAIL)
FT3	(4.7%)	(1.4%)	p <0.001

TABLE 3.3.3. FT4

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILITY FISHER'S EXACT TEST (2-TAIL)
FT4	(1.2%)	(1.6%)	p <0.001

TABLE 3.3.4. FT4 AND FT3

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILITY FISHER'S EXACT TEST (2-TAIL)
FT4 AND FT3	(0.3%)	(0.1%)	p <0.001

TABLE 3.3.5 TSH AND FT3

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILITY FISHER'S EXACT TEST (2-TAIL)
TSH AND FT3	(0.8%)	(0.5%)	p <0.001

TABLE 3.3.6 FT4 AND TSH

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILTY FISHER'S EXACT TEST (2-TAIL)
FT4 AND TSH	(20.6%)	(22.9%)	p <0.001

TABLE 3.3.7 FT4 + TSH + FT3

TEST REQUESTED	BEFORE MARCH 2003	AFTER MARCH 2003	PROBABILITY FISHER'S EXACT TEST (2-TAIL)
FT4 + TSH+ FT3	(4.6%)	(1.6%)	p <0.001

3.4 SUMMARY OF STATISTICAL ANALYSIS FOR SPECIFIC TESTS

TABLE 3.4 SUMMARY OF STATISTICAL ANALYSIS

TEST	BEFORE MARCH 2003	TOTAL COST	AFTER MARCH 2003	TOTAL COST	p- VALUE
1. TSH	13631	R1, 530,761	23440	R2, 632,312	P<0.001
2. FREE T4	337	R33, 767	741	R74, 248	P<0.001
3. FREE T3	1306	R130, 861	638	R63, 928	P<0.001
4. FREE T4 AND TSH	5750	R1, 221,875	10520	R2, 235,500	P<0.001
5. FREE T4 AND FREE T3	95	R19, 038	50	R10, 020	P<0.001

3.5 FISHER EXACT TEST

Comparisons of frequency/percentages were based on the Fisher Exact Test (2-Tail) and p-values less than or equal to 0.05 were considered significant.

3.6 COST COMPARISON

The total cost of the tests ordered either individually or in combination was calculated for the period before March 2003 as well as after March 2003 in order to determine the impact of the evidence-based guidelines from an economical point of view. The price ranges used in the calculation were those made available by Discovery Health (Table 1.1). The study was conducted within the time frame

of one year and thus inflation was not taken into account. In order to account for the change in membership at Discovery Health during the time that the study was conducted these cost values have been normalised. The cost values were normalised by initially calculating the total membership of the company. The percentage change in the total membership for the duration of the study was then calculated. This is represented in the table below:

**TABLE 3.6.1 CHANGE IN MEMBERSHIP - DISCOVERY HEALTH
(2002-2004)**

YEAR	LIVES*	AVERAGE	PERCENTAGE
2002	1,115,068		
2003	1,407,036	1,261,052	
2004	1,545,650	1,476,343	17.07%

***MEMBERS OF THE SCHEME**

The percentage of change in membership was then used to calculate the change in cost after the guidelines were published for the tests. The results are represented in the tables that follow:

TABLE 3.6.2 NORMALISED COST COMPARISON FOR TSH

YEAR	TOTAL COST (R)	COST PER LIFE (R)	INCREASE IN COST/LIFE
2003	1,530,761	1.21	
2004	2,632,312	1.78	46.88%

There was an increase in cost of 46.88% for TSH.

TABLE 3.6.3 NORMALISED COST COMPARISON FOR FREE T4

YEAR	TOTAL COST (R)	COST PER LIFE (R)	INCREASE IN COST/LIFE
2003	33,767	0.03	
2004	74,248	0.05	87.82%

There was an increase in cost of 87.82% for Free T4.

TABLE 3.6.4 NORMALISED COST COMPARISON FOR FREE T3

YEAR	TOTAL COST	COST PER LIFE	INCREASE IN COST/LIFE
2003	130,861	0.10	
2004	63,928	0.04	-58.27%

There was a decrease in cost of 58.27% for Free T3.

TABLE 3.6.5 NORMALISED COST COMPARISON FOR THE COMBINATION OF FREE T4 AND TSH

YEAR	TOTAL COST (R)	COST PER LIFE (R)	INCREASE IN COST/LIFE
2003	1,221,875	0.97	
3004	2,235,500	1.51	56.28%

There was an increase in cost of 56.28% for the combination of TSH and Free T4.

TABLE 3.6.6 NORMALISED COST COMPARISON FOR THE COMBINATION OF FREE T4 AND FREE T3

YEAR	TOTAL COST (R)	COST PER LIFE (R)	INCREASE IN COST/LIFE
2003	19,038	0.02	
2004	10,020	0.01	-55.04%

There was a decrease in cost of 55.04% for the combination of Free T4 and Free T3.