



**3**

**2001 12**

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**2001 12**

가

2

가

가

가

	.....	
.	.....	1
1.	.....	1
2.	.....	2
.	.....	4
1.	.....	4
2.	.....	5
3.	.....	6
.	.....	8
1.	.....	8
2.	.....	8
3.	.....	9
4.	.....	11
.	.....	12
1.	.....	12
2.	.....	16
3.	.....	23
.	.....	27
.	.....	32
	.....	34
	.....	36
	.....	43

1.	.....	12
2.	.....	13
3.	.....	14
4.	.....	16
5.	.....	17
6.	.....	18
7.	.....	19
8.	.....	19
9.	1 .....	20
10.	.....	21
11.	.....	22
12.	.....	24
13.	가 .....	25
14.	.....	26

15. S	.....	36
16. S	.....	36
17. S	.....	37
18.	.....	37
19.	.....	38
20.	.....	38
21.	.....	39
22.	.....	40
23.	.....	40
24.	.....	41
25.	.....	41
26.	.....	42
27.	.....	42

1.	.....	15
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1989 7 1  
, , , , 가 , 6  
가 2001 7 1  
, , , , 가 5 가  
. 3  
3 (S )  
6 (1999. 12 2000. 5) 6 (2000. 12  
2001. 5)  
. .  
, 16.6%가  
. 가 .  
, 가 .  
, 36.6%가  
가 . 가 가  
. 4.9% 가 ,  
12.1% 가 . 5.9%  
가 , 4.2% 42.2%  
20.2% 11.4% 가 .  
, .  
가 가 가



가 가  
가 .  
가 가  
가 가  
가 .  
3  
가 가  
가 가  
가 .  
가 3  
가 3  
가  
가 .  
가 .

•

1.

가 가 가  
(Stevens, 1971) 가

,  
가 ( ,  
1988).

, 가  
가

, ,  
,  
( , 1984).

1977

가  
( , 1988), 1989 7 1  
가 3

( , 1990). (1992)

2 6 ,

가 가 10% ( , 1992). 가 , , , , 가 ,

가 5 , , , , 가 2000 7 1 가 가 . 2000 7 1 가 가 5 .

3 ,

2.

가 . 3



•

1.

1989 7 1 가

( , 1988).

1977 500

300

1988 , 1989 7

가

가

( , 1990). 1989 7 1

3

, , , , , , , 8

140

1

, 2

3  
1 2  
2 3 , 8  
가

.  
, 가 , ( ' 5 ' )  
3 .

## 2.

3  
1 1  
4.2% , 1 10.6% 가 .  
15% 6% . 5  
11% 가 ( , 1992).  
1 5.9%  
가 1 9% 가 5 1 12.1%  
가 0.7% ( , 1992).  
. 6 8.8%,  
26.1%, 5.1%가 2.8%  
가 가 ( , 1990).

25%가

40% 20%  
 10.2% 5  
 0% 48.2%  
 가 14.9%  
 10.4% 10% ( , 1992).  
 3 9.7%가  
 3  
 99.2% 50.4% ( , 1992).

(Kupfer , 1994; Hiratsuka , 2001), 65  
 가  
 25 (Steinberg ,  
 1990), 8.9%,  
 5.9% ( , 1993).

### 3.

(1991) 1  
 10.4% 19.1% 가  
 (1990) 1·3

17.0%가                      14.8% 가                      .                      14.0%  
가                      (                      , 1991).



1.

3 (S  
)  
56,726 47,304  
104,030  
819  
553 142 137

2.

가.

가 2000 7 1  
6 1999 12 1 2000 5 31  
6 2000 12 1 2001 5 31

### 3.

가.

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1)

2) :

, , , , 가

.

3) : International Statistical Classification of Disease and  
Related Health Problems (WHO, 1992)

• , • , • , • , • , • , •

10

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20%

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4.

Chi-square test

SAS

. , , ,  
t-test Chi-square test .  
.

•

1.

9.7%, 29.5%가 16.6%가  
( $p < 0.05$ )( 1).

1.

:

	1)	2)	
	36,903	33,328	-9.7
	19,823	13,976	-29.5
	56,726	47,304	-16.6

1) : 6 (1999. 12 2000. 5)

2) : 6 (2000. 12 2001. 5)

가.

• 가 ( 2).

2.

: (%)

( )							
~20	5,388(21.2)	5,064(16.2)	10,452(18.4)	4,856(22.0)	4,810(19.1)	9,666(20.4)	
21~40	4,947(19.5)	7,134(22.8)	12,081(21.3)	4,338(19.7)	5,014(19.9)	9,352(19.8)	
41~60	6,432(25.3)	7,730(24.6)	14,162(25.0)	5,587(25.4)	6,762(26.3)	12,349(26.1)	
61~80	8,175(32.2)	10,428(33.3)	18,603(32.8)	6,919(31.2)	8,039(31.7)	14,958(31.6)	
81~	453( 1.8)	975( 3.1)	1,428( 2.5)	375( 1.7)	604( 2.4)	979( 2.1)	
	25,395(100.0)	31,331(100.0)	56,726(100.0)	22,075(100.0)	25,229(100.0)	47,304(100.0)	

.

,

가 ( 3).

3.

: (%)

11,883(32.2)	11,192(33.6)	9,694(48.9)	6,616(47.3)	21,577(38.1)	17,808(37.6)
9,647(26.2)	8,178(24.5)	3,696(18.6)	2,862(20.5)	13,343(23.5)	11,040(23.4)
6,499(17.6)	5,209(15.6)	3,399(17.2)	2,039(14.6)	9,898(17.4)	7,248(15.3)
4,141(11.2)	4,171(12.6)	1,502( 7.6)	1,164( 8.3)	5,643( 9.9)	5,335(11.3)
4,733(12.8)	4,578(13.7)	1,532( 7.7)	1,295( 9.3)	6,265(11.0)	5,873(12.4)
36,903(100.0)	33,328(100.0)	19,823(100.0)	13,976(100.0)	56,726(100.0)	47,304(100.0)

.

가 16.6%

가 ,

9.7%

1.1%

5.8%

가

,

5.6%

3.9%

29.5%

2.9%,

2.6%가

가

•

9.0%

가

(p<0.05)( 1)( 4).

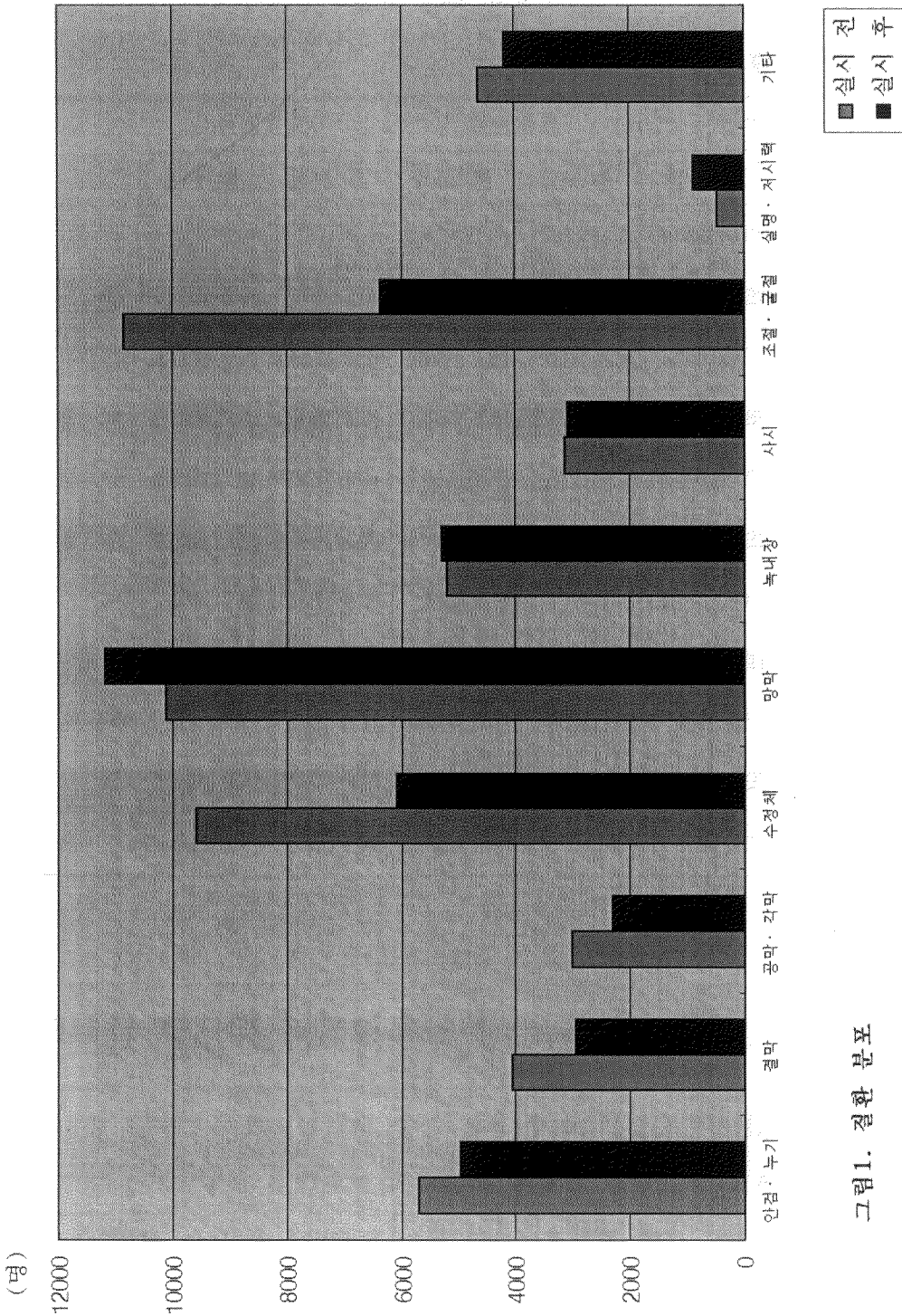


그림1. 질환 분포



4.

: (%)

•	3,325( 9.0)	3,132( 9.4)	2,359(11.9)	1,853(13.3)	5,684(10.0)	4,985(10.5)
	1,260( 3.4)	978( 2.9)	2,796(14.1)	1,962(14.0)	4,056( 7.2)	2,940( 6.2)
•	2,118( 5.7)	1,663( 5.0)	897( 4.5)	631( 4.5)	3,015( 5.3)	2,294( 4.8)
	8,102(22.0)	4,685(14.0)	1,474( 7.4)	1,394(10.0)	9,576(16.8)	6,079(12.9)
	6,416(17.4)	8,361(25.1)	3,685(18.6)	2,812(20.1)	10,101(17.8)	11,173(23.6)
	4,610(12.5)	4,898(14.7)	589( 3.0)	402( 2.9)	5,199( 9.2)	5,300(11.2)
	2,908( 7.9)	2,911( 8.7)	243( 1.3)	191( 1.4)	3,151( 5.6)	3,102( 6.6)
•	4,295(11.6)	3,025( 9.1)	6,528(32.9)	3,339(23.9)	10,823(19.1)	6,364(13.5)
•	322( 0.9)	692( 2.1)	144( 0.7)	200( 1.4)	466( 0.8)	892( 1.9)
	3,547( 9.6)	2,983( 9.0)	1,108( 5.6)	1,192( 8.5)	4,655( 8.2)	4,175( 8.8)
	36,903(100)	33,328(100)	19,823(100)	13,976(100)	56,726(100)	47,304(100)

2.

9,576 819 ,  
 6,079 553  
 142 137 .  
 142 110 , 32 , 137

105 , 32 .

가.

1 3.8±3.6, 3.3±3.2  
 4.2±4.0, 3.6±3.8  
 2.3±2.4, 2.4±2.3

가 (p>0.05).

.

. 가 (p>0.05)

( 5).

5.

: (%)

~20	-	-	-	-	-	-
21~40	6( 3.0)	12( 3.6)	18( 3.3)	2( 1.0)	3( 1.2)	5( 1.1)
41~60	33(16.3)	67(20.1)	100(18.6)	29(14.6)	46(18.1)	75(16.6)
61~80	143(70.8)	223(66.2)	366(68.1)	142(71.7)	167(65.7)	309(68.4)
81~	20( 9.9)	34(10.1)	54(10.0)	25(12.7)	38(15.0)	63(13.9)
	202(100.0)	336(100.0)	538(100.0)	198(100.0)	254(100.0)	452(100.0)

가 가  
 가 (p<0.05)( 6).

6.

: (%)

122(26.4)	155(41.2)	26(35.6)	37(48.7)	148(27.5)	192(42.4)
186(40.3)	103(27.4)	6( 8.2)	15(19.7)	192(35.7)	118(26.1)
50(10.8)	41(10.9)	17(23.3)	6( 7.9)	67(12.5)	47(10.4)
57(12.3)	27( 7.2)	16(21.9)	4( 5.3)	73(13.6)	31( 6.9)
47(10.2)	50(13.3)	11(15.0)	14(18.4)	58(10.7)	64(14.2)
462(100.0)	376(100.0)	76(100.0)	76(100.0)	538(100.0)	452(100.0)

가

가 (p>0.05)( 7).

7.

(n=110)	(n=105)	(n=110)	(n=105)	(n=110)	(n=105)
14(12.7)	15(14.3)	2( 6.2)	2( 6.2)	16(11.3)	17(12.4)
19(17.3)	12(11.4)	1( 3.1)	6(18.8)	20(14.1)	18(13.1)
33(30.0)	27(25.7)	3( 9.3)	8(25.0)	36(25.4)	35(25.5)

( ) : n %

가  
 가            가            가  
 (p<0.05).            가  
 가            ( 8).

8.

(n=110)	(n=105)	(n=110)	(n=105)	(n=110)	(n=105)
4( 3.6)	12(11.4)	0( 0)	0( 0)	4( 2.8)	12( 8.8)
48(43.6)	32(30.5)	11(34.4)	10(31.5)	59(41.5)	42(30.7)
52(47.2)	44(41.9)	11(34.4)	10(31.5)	63(44.3)	54(39.4)

( ) : n %

1 가 16.75  
 14.73 12.1%가 4.43  
 3.16 28.7% 1.84 2.05  
 11.4% 가 가 (p<0.05)  
 가 ( 9).

9. 1 : ( )

	(n=110)	(n=105)	(n=110)	(n=105)	(n=110)	(n=105)
	11.72(8.27)	10.41(9.17)	5.93(5.65)	6.06(7.20)	10.42(8.17)	9.40(8.91)
	*2.10(2.98)	2.35(2.69)	0.90(1.91)	1.06(1.85)	*1.84(2.85)	2.05(2.50)
	*5.05(3.41)	3.38(3.35)	2.31(3.98)	2.46(3.06)	*4.43(3.64)	3.16(3.30)
	0.07(0.51)	0.13(0.53)	-	0.03(0.00)	0.06(0.53)	0.19(0.54)
	18.96(7.52)	16.29(8.63)	9.16(4.56)	9.63(6.05)	*16.75(7.06)	14.73(7.13)

\*: p<0.05

18 , 82 가  
 1 , 8

16 , 68 가  
 8  
 4 . • 1 가  
 • 가 (p>0.05).

17.5%, 23.4%가  
 1 가 , 4 가 •  
 (p>0.05)( 10).  
 , 가  
 3.1 5.2 가 ( 11).

10.

:

	(n=142)		(n=137)	
1	9( 6.3)	9( 6.3)	20(13.9)	20(13.9)
2	4( 2.8)	8( 5.6)	6( 4.4)	12( 8.8)
4	2( 1.4)	8( 5.6)	-	-
	15(10.5)	25(17.5)	26(18.3)	32(23.4)

( ) : n %

11.

(n=142)				(n=137)			
	<sup>1)</sup>	( )	<sup>2)</sup>		<sup>1)</sup>	( )	<sup>2)</sup>
11	1	41	0	15	0	111	0
5	0	17	0	7	2	38	1
5	0	12	0	6	1	15	1
2	0	2	0	1	0	-	0
1	0	3	0	0	-	-	-
0	-	-	-	1	0	1	0
1	0	3	0	0	-	-	-
0	-	-	-	1	1	1	0
0	-	-	-	1	0	1	0
25	1	78	0	32	4	167	2

1) : 가

2) :

45.1% 40.9% 4.2%,  
 51.8% 47.6% 4.2%, 21.9%  
 18.8% 3.1% 가 (p>0.05).  
 46.2±26.4 26.7±24.7 19.5  
 , 46.5±26.2 26.2±24.9 20.3 ,

44.2±30.7      30.7±25.7      13.5

가 (p<0.05).

26.3±14.3      31.6±11.6      5.3 ,

25.3±13.1      31.5±12.3      6.2 가 ,

34.0±23.3      31.6±6.1      2.4

가 (p<0.05).

64      3      56

9 . ,

5 , , , 1 .

• 34 41

1 , 3 , 56 20 .

, , , yag

laser .

### 3.

가.

6%, A 19%, 17%가

, A ,

A

가 ( 12).



표 12. 외래 진료수입 비교

단위: 원

구분	안과			기실시A과			병원전체		
	2000년	2001년	증감(%)	2000년	2001년	증감(%)	2000년	2001년	증감(%)
	진찰료	44,964,615	50,627,468	13	14,029,333	20,190,342	44	556,880,777	713,176,292
수술료	58,456,667	63,319,955	8	21,625,589	20,213,239	-7	223,916,663	234,997,862	5
방사선검사료	14,283,212	14,839,985	4	34,721,753	41,457,205	19	1,084,826,368	1,271,527,805	17
검사료	15,852,950	14,415,053	-9	24,434,337	28,791,926	18	930,665,652	936,540,985	1
주사 및 약대	108,835,908	32,798,277	-70	128,571,067	47,637,682	-63	4,403,105,145	2,033,571,303	-54
기능검사료	1,918,228	1,854,432	-3	757,330	893,531	18	96,812,112	96,723,618	0
안과적검사료	96,873,517	132,624,093	37				98,980,108	135,315,165	37
특수검사료	7,096,178	6,254,022	-12	39,000,388	47,439,930	22	1,022,693,737	1,197,241,730	17
의료소모품비	17,678,192	21,496,123	22	3,512,882	3,377,678	-4	42,686,510	48,066,557	13
부대수입	3,157,323	3,425,160	8	504,535	786,795	56	39,255,262	36,797,558	-6
지정진료수입	42,643,873	46,666,648	9	16,177,870	18,778,712	16	576,021,508	606,520,290	5
총수입	411,760,663	388,321,216	-6	283,335,084	230,421,763	-19	9,635,408,135	7,951,638,267	-17

가 1999 가 12.1% 가 , 2000 7  
 1 가 , 2000 12 1  
 가 5.5% , 2001 1 1 13.5% 43.2%  
 34.8% 7.0%가 ( 13).

13. 가

		( )	( )		
1997	9 1	6,600	3,300		
1998	7 1			5.0%	20.0%
1999	11 15	7,400	3,700		
2000	7 1				
2000	12 1			5.5%	
2001	1 1	8,400	5,300	34.8%	7.0%

.  
 1,533,951 1,548,065 10 가  
 5% 11.0%, 4.0%,  
 3.0% ( 14).

14.

:

	2000	2001	(%)
	28,210	25,522	-9.0
	45,209	59,218	+31.0
	421,073	440,678	+5.0
	383	1,974	+415.0
	23,114	22,452	-3.0
	26,040	30,681	+33.0
	316,511	305,151	-4.0
	358,517	346,236	-3.0
	331,710	294,717	-11.0
	1,548,065	1,533,951	-1.0

•

1.

가 가 가

S

• 6 2000 •

가

(Kupfer , 1994; Hiratsuka , 2001),

가 1960 1970

, 1980 ,

가 가

( , 1998).

20.0% 279

A

2.

6.9%, 4.1%, 16.1%

15.0%

가 .

0.1% , 2.1% 가, 7.6%

12.4%가 가 . 1989

가 5.0 8.8% ( , 1990; , 1992)( 15 17 ).

1960

31%, 17%, 11% 1970 31%, 17%,

12% 1980 36%, 16%, 12% 1980

가

가

( , 1998).

가 16.6%

15.0%

9.1%가 가 ( 18 ).

가 가 가 ( 19 22 ).

10,101

11,173 10.6% 가 21 , 38

1 가 4.2 3.5

가 28.6% 31.6%

가 19.0% 10.3% 81.0%

69.2% 2.0 1.5

0.6 1.4 가

57.9% ,

23.7% 21 3 8

38 6 16 가 가

14.3% 15.8% 가

42.7 38.7 2 30 2 25

가 0% 83.3% 가 .

가 가 가  
, , ,  
가 3  
. 가 가 , ,  
, , 가  
3 가 ( 23 27 ).  
A 6%,  
A 19%, 17%가 . 가  
가 가  
, A 가 가  
가  
. 17.3%, A 18.1%, 13.1%가 가  
. 가 , , 가  
가 가 가 가

3

.

가

3

가

가

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•

2000 7 1

3

•

.

, 16.6%가

가

.

•

, ,

가

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,

36.6%

,

가

가

가 ,

가 .

59.9%가

11.4% .

가 ,

가

.

,

6%,

1%

.

가 가

가

가 가

가

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 가  
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 가 . , , 가  
 가 가 가  
 3  
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 가  
 가 3  
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 3  
 가  
 .  
 가 .

, 1991  
가  
, 1992  
1998; 39(11): 2761-2767  
, 1984  
가  
; 1990  
1986; 9(8): 20-24  
1988; 17(10): 34-40  
1988; 17(10): 34-40  
, 1990  
, 1990  
, 1993.  
가  
, 1990  
, 1990

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17. S

:

1)	453,433	417,678	-7.9	177,950	163,802	-8.0	631,383	581,480	-7.9
2)	360,877	337,135	-6.6	130,649	127,655	-2.3	491,526	464,760	-5.4
3)	92,556	80,543	-13.0	47,301	36,147	-23.6	139,857	116,690	-16.6
	34,722	31,077	-10.5	15,860	11,823	-25.5	50,582	42,900	-15.2

1) : S

2) : 1989 7 1

3) : 2000 7 1 가

, 가 ,

18.

:

	2,749	3,000	+9.1	5,562	3,562	-36.0	8,311	6,562	-21.0
	34,154	30,328	-11.2	14,261	10,414	-27.0	48,415	40,742	-29.5
	36,903	33,328	-9.7	19,823	13,976	-15.8	56,726	47,304	-16.6

19.

:

764(27.8)	879(29.3)	2,688(48.3)	1,674(47.0)	3,452(41.5)	2,553(38.9)
724(26.3)	718(23.9)	1,015(18.2)	690(19.4)	1,739(20.9)	1,408(21.5)
456(16.6)	421(14.1)	923(16.6)	498(14.0)	1,379(16.6)	919(14.0)
315(11.5)	396(13.2)	412( 7.5)	315(8.8)	727( 8.7)	711(10.8)
490(17.8)	586(19.5)	524( 9.4)	385(10.8)	1,014(12.2)	971(14.8)
2,749(100.0)	3,000(100.0)	5,562(100.0)	3,562(100.0)	8,311(100.0)	6,562(100.0)

20.

:

11,119(32.6)	10,313(34.0)	7,006(49.1)	4,942(47.4)	18,125(37.4)	15,255(37.5)
8,923(26.1)	7,460(24.6)	2,681(18.8)	2,172(20.9)	11,604(24.0)	9,632(23.6)
6,043(17.7)	4,788(15.8)	2,476(17.4)	1,541(14.8)	8,519(17.6)	6,329(15.6)
3,826(11.2)	3,775(12.4)	1,090( 7.6)	849( 8.2)	4,916(10.2)	4,624(11.3)
4,243(12.4)	3,992(13.2)	1,008( 7.1)	910( 8.7)	5,251(10.8)	4,902(12.0)
34,154(100)	30,328(100)	14,261(100)	10,414(100)	48,415(100)	40,742(100)

21.

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•	445(16.2)	611(20.4)	886(16.0)	658(18.5)	1,331(16.0)	1,269(19.3)
	138( 5.0)	89( 3.0)	1,011(18.2)	599(16.8)	1,149(13.8)	688(10.5)
•	69( 2.5)	94( 3.1)	107( 1.9)	64( 1.8)	176( 2.1)	158( 2.4)
	562(20.5)	356(11.9)	257( 4.6)	197( 5.5)	819( 9.8)	553( 8.4)
	383(13.9)	829(27.6)	50( 8.1)	572(16.1)	833(10.1)	1,401(21.5)
	179( 6.5)	198( 6.6)	44( 0.8)	32( 0.9)	223( 2.7)	230( 3.5)
	330(12.1)	386(12.9)	52( 0.9)	48( 1.3)	382( 4.6)	434( 6.6)
•	290(10.5)	172( 5.7)	2,505(45.0)	1,023(28.7)	2,795(33.7)	1,195(18.2)
•	28( 1.0)	106( 3.5)	24( 0.4)	53( 1.5)	52( 0.6)	159( 2.4)
	325(11.8)	159( 5.3)	226( 4.1)	316( 8.9)	551( 6.6)	475( 7.2)
	2,749(100)	3,000(100)	5,562(100)	3,562(100)	8,311(100)	6,562(100)



22.

:

•	2,880( 8.4)	2,521( 8.3)	1,473(10.3)	1,195(11.5)	4,353( 9.0)	3,716( 9.1)
	1,122( 3.3)	889( 2.9)	1,785(12.5)	1,363(13.1)	2,907( 6.0)	2,252( 5.5)
•	2,049( 6.0)	1,569( 5.2)	790( 5.5)	567( 5.4)	2,839( 5.9)	2,136( 5.2)
	7,540(22.1)	4,329(14.3)	1,217( 8.5)	1,197(11.5)	8,757(18.1)	5,526(13.6)
	6,033(17.7)	7,532(24.8)	3,235(22.8)	2,240(21.5)	9,268(19.1)	9,772(24.0)
	4,431(13.0)	4,700(15.5)	545( 3.8)	370( 3.6)	4,976(10.3)	5,070(12.4)
	2,578( 7.5)	2,525( 8.3)	191( 1.3)	143( 1.4)	2,769( 5.7)	2,668( 6.5)
•	4,005(11.7)	2,853( 9.4)	4,023(28.3)	2,316(22.2)	8,028(16.6)	5,169(12.7)
•	294( 0.9)	586( 2.0)	120( 0.8)	147( 1.4)	414( 0.9)	733( 1.8)
	3,222( 9.4)	2,824( 9.3)	882( 6.2)	876( 8.4)	4,104( 8.4)	3,700( 9.1)
	34,154(100)	30,328(100)	14,261(100)	10,414(100)	48,415(100)	40,742(100)

23.

	(n=110)	(n=32)	(n=105)	(n=32)	(n=42) (n=137)
	5	15	-	-	5 15
	61	44	15	12	76 56
	66	58	15	13	81 71

24.

	(n=110)	(n=32)	(n=105)	(n=32)	(n=42)	(n=137)
	1	4	-	-	1	4
	3	6	-	-	3	6
	-	3	-	-	-	3
	1	-	-	-	1	-
	-	1	-	-	-	1
	-	1	-	-	-	1
	5	15	-	-	5	15

25.

	(n=110)	(n=32)	(n=105)	(n=32)	(n=42)	(n=137)
	31	25	6	6	37	31
	15	13	5	5	20	18
	4	1	1	1	5	2
	4	-	-	-	4	-
	2	-	-	-	2	-
	-	1	1	-	1	1
	5	4	2	-	7	4
	61	44	15	12	76	56

26.

(n=110)				(n=105)			
( )				( )			
9	1	38	0	15	0	111	0
3	0	14	0	6	2	12	0
4	0	11	0	6	1	15	1
1	0	0	0	1	0	0	0
1	0	3	0	0	-	-	-
0	-	-	-	1	0	1	0
1	0	3	0	0	-	-	-
0	-	-	-	1	1	1	0
0	-	-	-	1	0	1	0
19	1	69	0	31	4	141	1

27.

(n=110)				(n=105)			
( )				( )			
2	0	3	0	0	-	-	-
2	0	3	0	1	0	26	1
1	0	1	0	0	-	-	-
1	0	2	0	0	-	-	-
6	0	9	0	1	0	26	1

## **ABSTRACT**

### **The effect of change of mandatory referral system in an ophthalmology of tertiary care medical institution**

Yang Soo Kim

Department of Hospital Administration

Graduate School of

Health Science and Management

Yonsei University

(Directed by Professor Seung Hum Yu, M.D., Dr. P.H.)

In Korea, the mandatory referral system was first introduced in July 1, 1989, however 6 departments ; ophthalmology, otorhinolaryngology, dermatology, rehabilitation, family medicine and dentistry were excluded. According to the change of mandatory referral system in July 1, 2000, 5 departments; ophthalmology, otorhinolaryngology, dermatology, rehabilitation and family medicine were included. In this study, the effect of change of mandatory referral system to the medical utilization of outpatient clinic and medical income in ophthalmology of tertiary care medical institute, S Hospital in Seoul was evaluated for 6 months before(1999. 12 2000. 5) and after(2000. 12 2001. 5).

And the results were as follows :

1. The number of outpatients was reduced by a total 16.6%. The statistical analysis of the change of distribution of age, sex and major location of patient's address was not significant. The number of patient with blindness • low vision, retina, glaucoma increased and that of patient with accommodation • refractive error, cataract decreased.

2. The number of cataract patients was reduced by 36.6%. The distribution of age and sex was not changed. The major location of patient's address was changed to nearer to the hospital. The number of present illness reduced in 4.9%, and ocular present illness increased. The number of examination including laboratory test reduced in 12.1% but that of ocular special examination increased. The number of consultation record to other department increased in 5.9%. The number of cataract surgery reduced in 4.1%, the waiting time reduced in 42.2% however surgery time increased in 20.2% and number of postoperative complications increased in 11.4%.

3. The income of outpatient clinic and cataract surgery reduced. Among items of outpatient clinic income, the most increased was ocular examination and the most reduced was injection and drugs. Among items of cataract surgery income, the most increased was operation fee and the most decreased was the item of doctor's fee.

In conclusion, for the patient, due to the lowered density of

outpatient population more space was provided to the patients with more severe disease entity such as blindness • low vision, retina and glaucoma. For the hospital, the need for the expansion of ophthalmology was not found, however that for creation of the special clinics dealing with more severe disease entity was found. Due to reduced income and increased financial need of investment for the equipment and manpower of the more severe disease entity, the ophthalmology of tertiary care medical institute is faced with financial disaster. It is strongly suggested that the cost of medical practice of more severe disease entity be raised to achieve the success after change of mandatory referral system in ophthalmology.

In this study, the number of patient and medical institute and the period of study are limited, therefore further study will be needed.