

2001 6

김혜숙의 보건학 석사학위논문을 인준함.

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2001년 6월 일

2

가

. 2 6

가 ,

가

1

2001 06

		
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가. QI		6
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. CQI		15
. QI		16
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Quality

Indicator ,

Quality

. 2000 12 1 2001 1 31

8,405

, Quality Indicator (,

,), , , ,

, , ,

, , , 12 가

. 100 가

, 3가

.

,

QI .

Quality , ‘ ,

, , ‘

, ,

, ,

, ,

CQI Guideline, Quality Review, Concurrent, Tutorial

가 .

•

1.

•

•

,

•

(Quality Assurance, QA) (Performance Improvement, PI)

•

가 . 1981
1994 QA 가
, 가 . 1995 3
가 200
가
.
.

가 (Quality Improvement, QI)

가

feedback

가

가

가

가

가

가 (Diagnosis Related Group, DRG)

·
(Electronic
Data Interchange, EDI) , 가 ,
,
가
(Continuous Quality
Improvement Activity) 가 .
,
(Picture
Archiving and Communication System, PACS) ,
.
가

(, 1999).

(Continuous
Quality Improvement, CQI) .
(integrated data-driven process)

(Decision Support System, DSS)

.

.

.

, Quality

가

.

2.

.

.

, QI (indicator) .

,

.

, Quality

.

,

.

•

1. QI

가. QI

(Retrospective Inspection)

(audit)

,

가

가

.

Quality Improvement(QI)

가 가

(system)

(process)

가

.

(continuous)

Continuous Quality

Improvement(CQI)

,

Performance Improvement (PI)

(,

2001).

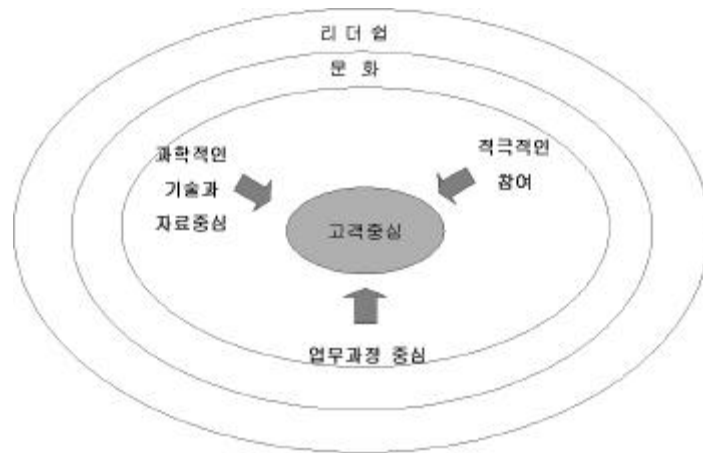
QI “

가

”

(

1).



1. CQI

Avedis Donabedian(1985)

가

. ' (absolutist definition)'

' (individualized definition)'

,

. ' (social

definition)'

가

.

.

가 ,
(, 2001).

1)

, .
, ,
가 .
가
가

(accreditation)

가

가 .

2)

가 .

.

.

() ,

.

가

,
 .
 .
 .
 3)
 ,
 .
 (Donabedian, 1985).
 가
 ,
 가
 ,
 ,

. CQI

CQI

. 가
 ,
 ,
 ,
 . CQI

·
· 가 ·
CQI ·

·

·

CQI

가

(, 2001)

, CQI

가 ·

가

·

·

·

가

·

. CQI CQI
 (,
 2001).
 , CQI 가
 .
 .
 가
 .
 .
 가 .
 ,
 가
 가 .
 . 가
 (, 2001).
 , 가 CQI .

. CQI

(flow chart), (fish bone diagram),

(run chart), (histogram), (pareto chart),

(control chart) (scattered diagram) (Hospital

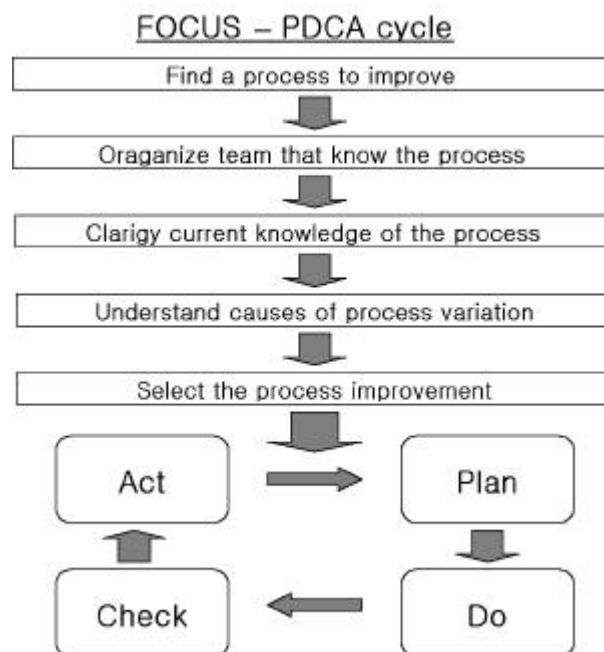
Corporation America, 1991). CQI FOCUS-PDCA

,

,

(

2).



2. CQI FOCUS - PDCA Cycle

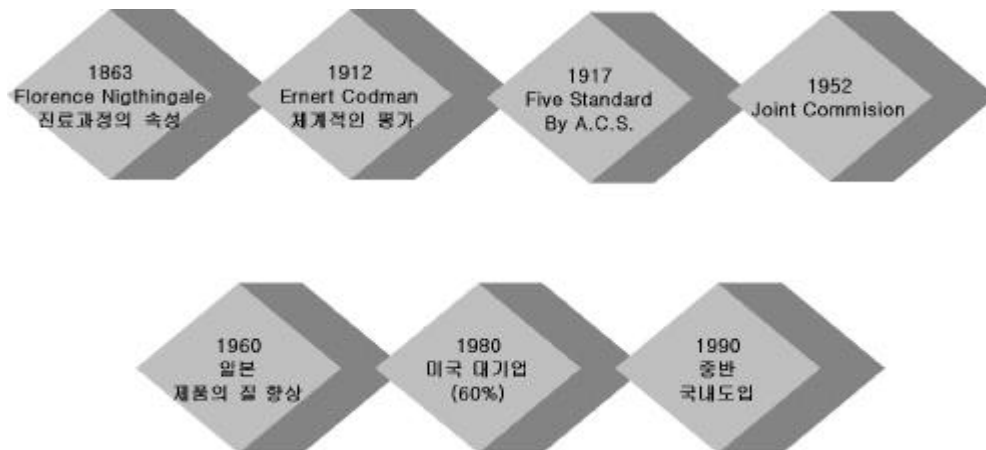
: CQI

. QI

QI 1863 Florence Nightingale
가 Dr. Abraham
Flexner, Dr. Ernert Codman 가
1917 5
(standard) . 1952 Joint
Commission 1950 1960
(Quality
Circle, QC) ,
(Kaizen) QI .
Juran, Deming 가
(Total Quality Management, TQM) TQM
. TQM
1980 , ,
. 가
(benchmarking) TQM 1980
Ford TQM
TQM (Curtis, 1999).
QI ,
1980 TQM
. Harvard Community Health Center,

Hospital Corporation of America, Intermountain Health System TQM (, 2001).

1990 CQI/ TQM 가 CQI QI (3).



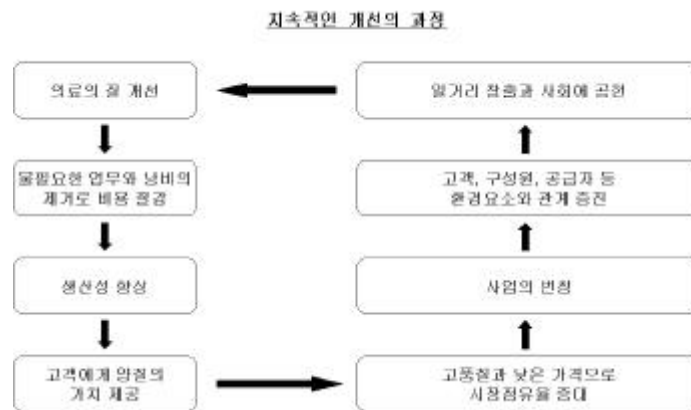
3. QI

. CQI

CQI

가

(4).



4.

CQI

가

. CQI

가 .
 , CQI
 .
 CQI

. QI

QI (Utilization Management, UM),
 (Quality Management, QM), (Risk management, RM),
 (Infection Control). (Nutrition Management),
 , , , .

1) (Utilization Management)

, ,
 가, , , ,
 가 (Carneal, 1998). 가

(Powell, 2000),

， ， ， (Brown, 1998).

2) (Quality Management)

，
， 가
，
，
Quality Systems Management(
， 1998)
，
，

3)

，
，
，
(Risk)

4)

， (， 1995).

가 CQI

.

가

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가

，

가

QI

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가

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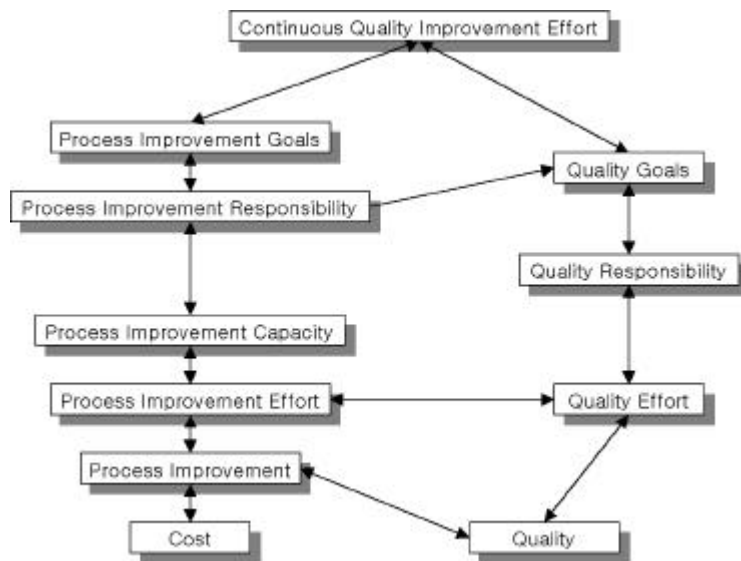
，

.

. CQI

QI (good quality care),
 (appropriate resource allocation), (cost effective)
 CQI

, , ,
 , 가
 (5).



5. CQI

2.

가.

가

가

(, 1994).

1950 가

(Electronic Data Processing, EDP)

(Transaction Processing Systems, TPS) , 1960

(Information Reporting Systems, IRS)

(Management Information Systems, MIS) . 1970

가 , 가 (Expert Systems, ES), (Executive Information Systems, EIS), (Group Decision Support Systems, GDSS)

,

.

(Semi-Structured or Unstructured Problem)

가

,

,

,

,

,

가

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1)

(Data Base

Management System, DBMS)

.

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,

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2)

(Model Base Management System, MBMS) .

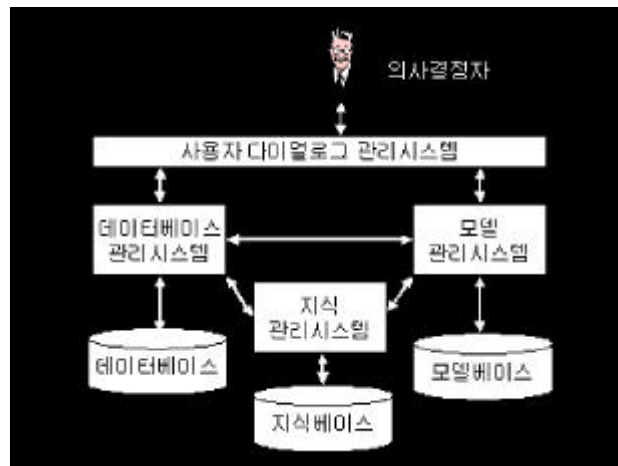
3)

,
가

(Dialogue Generation and Management Software, DGMS)

4)

. 가
 , 가
(6).



6.

.

1)

.

File Drawer System(: ,

), DB

,

Data Analysis System(: ,),

DB

Analysis Information System(: , ,
) .

,

.

Account Model(:),

Simulation Model,

,

Optimization Model(: , EOQ ,),

Suggestion Model(:

,) .

2)

(Personal Decision Support System)

.

(knowledge worker) .

,

가 .

· , (raw data)

· , ,

·

· , (Mrs.

Fields Cookies)

· ,

· ,

· ,

· , 가

·

·

·

(Group Decision Support Systems, GDSS)

가 ,

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가 ,

· , 가

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,
 .
 (group
 dynamics)
 ,
 .
 .
 ,
 .
 ,
 .
 ,
 가 .
 ,
 ,
 ,
 ,
 .

3.

가.

(reliable) (quantitative) (valid),
(indicator) .
,

1) (Sentinel Event Indicator)

2) (Aggregate Data Indicator)

(rate-based indicator)
(continuous-variable indicator) (1).

1.

,

3)

가 ,

.

가

.

()

.

가

.

, 가

.

.

5%

5%

(threshold)

5%

.

‘ ‘ ‘ ‘

.

가 () 가 가 .

4)

가 , 가 . 가 , 가 . 가 .

4.

가.

(Fayyad , 1996).

. , 가 , ,

,

가

가

.

,

.

algorithm

,

,

,

(predicate logic),

(decision tree),

(, 2000).

가 가 ,

,

가

가

. ,

가

가
(Knowledge Extraction),
(Information Discovery), (Data Archeology),
(Data Pattern Process), (Information Harvesting),
KDD(Knowledge Discovery in Database) (, 2001).

,
(Adriaans, 1997).

1)

가

가

2)

3) , , .

3)

· , , , , , .

4)

· , “
1 62%
가 83% ” ,

·

1) (Decision Tree)
(decision rule)
(classification)

(prediction) .
 , 가
 가 . ,
 (parametric)
 (outlier) ,
 ,
 가 (, 1998).

2) (Association Rules)
 (transaction) (item)
 ,
 가
 (undirected) .
 가
 . (association node)
 가 ,
 ,
 (, 1999).

3) (Clustering)

,
 .

(cluster)

(, 1999).

4) (Neural Networks)

(artificial neural networks)

(neurophysiology)

가

(nonlinear models)

(hidden units)

(combination)

(coefficient)

(synaptic weights)

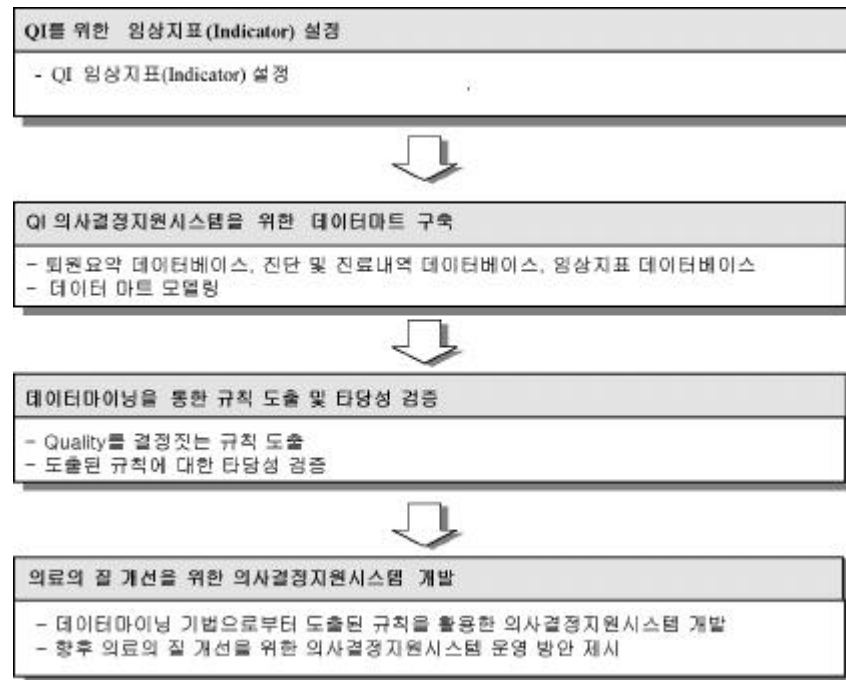
(, 1999).

•

1.

2000	12	1	2001	1	31	
		8,405				. 8,405 QI
Indicator	가 (criteria)		Adverse event가			
	7,732 , Adverse Event가		673 .			

2.



7.

4 (7). , QI

. , QI

. , Quality

. ,

.

3. Quality Indicator

가 3가 , , 가
 Quality Indicator 가 12가
 . Indicator (, ,
), , , , ,
 , , , , ,
 , , , , .
 (Sepsis)
 (International Classification of Diseases, ICD-10) 10
 A41 .
 T81 .
 , 2 .

2. QI Indicator

			(ICD-10)
•			
-	(Sepsis)		A41
-	Ventilator	Ventilator	J15
-			T83
•			T81
•			R99
•		28	P96.8
•			
•			
•			
•			T88.5
•			T80
•			L89
•			Y40/ Y42/ Y43/ Y44/ Y52
•			W01/ W10/ W13

4. QI

(data-reduction)
(prediction methods)
,
(, 2000). QI
,
,
, 가 .

5.

Quality

가.

Quality

.

.

Quality

3

.

3.

	(1: , 0:)
	(1: , 0:)
	(1: , 0:)
	(1:-20, 2:21-40, 3:41-60, 4:61-)
	(1: , 2:)
	(1: , 2:)

. Decision tree Quality

(decision rule) (decision
tree) (classification) (prediction)
(induction rule)

.

Answer tree 1.0 ,

, 가

CHAID(Chi-squared Automatic Interaction Detection)

. CHAID

가

. CHAID

p

, () (quality indicator)
 (child node)
 . Quality
 , .

6.

가 가
 가 ,
 가 (gain chart) (misclassification probability)
 (risk chart) 가 가 . Quality
 가 .
 가 가 . (correct
 prediction rate) 가
 . Quality
 .

7.

Microsoft Visual Basic 6.0

Indicator

Review,

Tutorial

.

.

QI

QI Guideline, Indicator

Quality

Concurrent,

.

.

1. QI

QI

Quality Indicator 가

Access DB

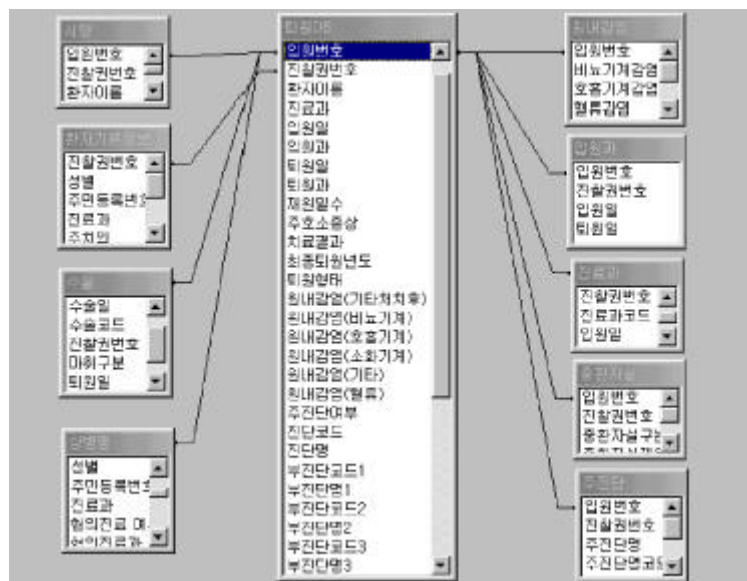
MS_SQL

. QI

QI Indicators

, 8

.



8. QI

2.

2000 12 2001 1 8,405
가 53.0%, 가 47.0% 가 , 72.7%,
27.3% 가 . 20 가 25.0%, 21-40 가
20.3%, 41-60 31.3%, 61 23.4% 41-60 가 가 .
2.5%, 28.8%,
2.4%, 1.0%, 3.9%,
7.9%, 11.4%, 8.2%,
5.8%, 0.8%, 5.1%,
5.3%, , 3.4%,
2.4%, , 5.1%,
, 1.1%,
3.0%, 1.9%
가 (4).

4.

1.	4,451	53.0%
2.	3,954	47.0%
	8,405	100.0%
1.	6,109	72.7%
2.	2,296	27.3%
	8,405	100.0%
1. 20	2,103	25.0%
2. 21-40	1,708	20.3%
3. 41-60	2,624	31.3%
4. 61	1,970	23.4%
	8,405	100.0%
1.	206	2.5%
2.	2,417	28.8%
3. ,	201	2.4%
4.	87	1.0%
5.	327	3.9%
6.	666	7.9%
7.	961	11.4%
8.	691	8.2%
9.	486	5.8%
10.	65	0.8%
11.	431	5.1%
12.	445	5.3%
13. ,	288	3.4%
14.	202	2.4%
15. ,	426	5.1%
16. ,	96	1.1%
17.	248	3.0%
18.	162	1.9%
	8,405	100.0%

5 Quality Indicator

5.0%(10/ 202),

ventilator

ventilator

가 4.9%(21/ 429),

가

73.7%(28/ 38) .

가 0.7%(29/ 4,218),

가 2.0%(170/ 8,405),

28

0.4%(1/ 228),

3.5%(212/ 5,988),

5.6%(106/ 1,900),

가 1.1%(47/ 4,218),

가 0.0%(0/ 3,183),

0.1%(4/ 3,096),

가 0.1%(5/ 8,405),

가

0.4%(31/ 8,405),

0.1%(9/ 8,405) (5).

5. Quality Indicator

	10	5.0%
	192	95.0%
	202	100.0%
	21	4.9%
	408	95.1%
Ventilator	429	100.0%
	28	73.7%
	10	26.3%
	38	100.0%
	29	0.7%
	4,189	99.3%
	4,218	100.0%
	170	2.0%
	8,235	98.0%
	8,405	100.0%
	1	0.4%
	227	99.6%
	228	100.0%
	212	3.5%
	5,776	96.5%
	5,988	100.0%
	106	5.6%
	1,794	94.4%
	1,900	100.0%
	47	1.1%
	4,171	98.9%
	4,218	100.0%
	0	0.0%
	3,183	100.0%
	3,183	100.0%
	4	0.1%
	3,092	99.9%
	3,096	100.0%
	5	0.1%
	8,400	99.9%
	8,405	100.0%
	31	0.4%
	8,374	99.6%
	8,405	100.0%
	9	0.1%
	8,398	99.9%
	8,405	100.0%

(, ,), ,
 , , , ,
 , , 가 100
 Quality 가
 Quality ,
 , ,
 가 100 Quality
 .

3.

Quality

가.

Quality

,

.

,

,

.

.

1)

8,405

가

5,988

212

5,988

3.5%,

5.776

96.5%

.

가

,

가

2.3%,

5.9%,

0.9%,

가

가

1 12.0%, 1 2

5.1%, 2 4 1.3%, 4 8

3.4%, 8 341 1.2% 1 가

2 4 가

20 6.9%, 20 0.00% 20 가

(9).

재입원

Cat.	%	n
0	96.46	5776
1	3.54	212
Total (100.00)		5988

진료과

P-value=0.0000; Chi-square=78.0055; df=3

Cat.	%	n
0	87.73	1075
1	2.27	25
Total (100.00)		1100

재원기간

P-value=0.0250; Chi-square=18.3654; df=4

1일, 1일,2일, 2일,4일, 4일,8일, 8일,341일

Cat.	%	n
0	68.00	22
1	12.00	3
Total (100.00)		25

Cat.	%	n
0	94.94	75
1	5.06	4
Total (100.00)		79

Cat.	%	n
0	98.71	153
1	1.29	2
Total (100.00)		155

Cat.	%	n
0	96.64	258
1	3.35	9
Total (100.00)		268

Cat.	%	n
0	98.78	568
1	1.22	7
Total (100.00)		575

나이분류

P-value=0.0301; Chi-square=8.8682; df=1

실원군

P-value=0.0015; Chi-square=25.7297; df=2

20세이상

20세이하

관영성가정호전

내분비대사질환 등

순환기계 질환 등

Cat.	%	n
0	100.00	126
1	00.00	0
Total (100.00)		126

Cat.	%	n
0	93.10	27
1	6.90	2
Total (100.00)		29

Cat.	%	n
0	60.00	3
1	40.00	2
Total (100.00)		5

Cat.	%	n
0	93.99	93
1	6.00	6
Total (100.00)		99

Cat.	%	n
0	93.39	163
1	0.61	1
Total (100.00)		164

9.

2)

‘ 1’ 가
 , 20 61
 43.8% (6).

6.

					/
1	1)	.	2)	20	, 43.8%
2	1)	.		61	
3	3)	>4	<=8		40.0%
1	3)	>2	<=4	.	21 100.0%
2	3)	>4	<=8	.	99.4%
3	5)	.	.	.	99.3%
4	6)				99.1%
5	3)	>8	<=341	.	. 98.8%

* 1) : , , , , , ,
 , , , ,

$$^* 2) \quad : \quad , \quad ,$$

* 3) : , , 가 : ,
 , , , , , , ,
 ,

* 5) $\vdash$, , , ,

* 6) : , , , , , , , 가 , , ,

3)

1,900
106 1,900
5.6%, 1,794 94.4% .
가
1 0.2%, 1 18 가 5.8%, 18
30 11.5%, 30 341 27.6% 30 341
가 가 .
(
, , ,)
1.7%, (,)
28.2% 가 . 1 18
20
1.2%, 21-60 5.7%, 61 10.4% 61 5
. 21-60 가 가
9.5%, 가 1.5% 가 가 . 21
0.6%,
33.3%
(10).

중환자실재병상

Cat.	%	n
0	94.42	1794
1	5.58	108
Total	(100.00)	1900

재원기간

P-value=0.0000; Chi-square=212.5056; DF=3

(1일]

(1일, 18일]

[18일, 30일]

[30일, 341일]

Cat.	%	n
0	89.78	909
1	0.22	2
Total	(47.95)	911

Cat.	%	n
0	94.16	597
1	5.84	37
Total	(33.37)	634

Cat.	%	n
0	88.54	170
1	11.46	22
Total	(10.11)	192

Cat.	%	n
0	72.36	118
1	27.61	45
Total	(8.58)	163

나이분류

P-value=0.0043; Chi-square=8.1730; df=1

종환군

P-value=0.0008; Chi-square=31.0094; df=1

21-60세

61세이상

20세이하

호흡기계 질환군 등

순환기계 질환군 등

Cat.	%	n
0	94.29	264
1	5.71	16
Total	(14.74)	280

Cat.	%	n
0	89.62	184
1	10.38	19
Total	(9.83)	183

Cat.	%	n
0	98.83	169
1	1.17	2
Total	(9.00)	171

Cat.	%	n
0	98.35	119
1	1.65	2
Total	(6.37)	121

Cat.	%	n
0	71.83	51
1	28.17	20
Total	(3.74)	71

성별

P-value=0.0043; Chi-square=8.1730; df=1

질환군

P-value=0.0112; Chi-square=27.3288; df=1

여자

남자

신생물 질환군 등

순상중독 및 모연매 의전 특정기타질환

Cat.	%	n
0	98.48	130
1	1.52	2
Total	(6.95)	132

Cat.	%	n
0	90.54	134
1	9.46	14
Total	(7.79)	148

Cat.	%	n
0	99.40	167
1	0.60	1
Total	(8.84)	168

Cat.	%	n
0	88.87	2
1	33.33	1
Total	(0.16)	3

10.

4)

18

20

,

1'

7

33.3%

(7).

7.

				/
1	>1 ≤18		20	33.3%
2	>18 ≤30	1)	.	28.2%
1	>1 ≤18	2)	21	100.0%
2	1		.	99.8%
3	<1 ≤18	2)	20	99.4%
4	>18 ≤30	3)	.	98.3%

$$* 1) \quad \vdots \quad ,$$
$$^* 2) \quad : \quad , \quad ,$$

, , , ,

* 3) $\vdash$,

,

5)

8,405

170

8,405

2.0%,

8,235

98.0%

.

가

1

6

가 1.0%, 6

17

가 1.6%, 17

341

6.4%

17

341

가 6

, 4.4%, , , ,
 , , 0.3% 1.4 .
 (11).



6)

‘ 1’ 17 341 , 가
61
23.4% (8).

8.

				/
1	¹⁾	>17	· 61	23.4%
		<=341		
2	¹⁾	>17	· 60	11.4%
		<=341		
3	²⁾	>1	· ·	7.1%
		<=6		
4		>6	·	4.4%
		<=11		
1	³⁾	>6	·	99.7%
		<=17		
2	⁴⁾	>1	<=6 · ·	99.0%

* 1) : , , , , , ,

, , ,

* 2) : , , , ,

* 3) : , , , , ,

* 4) : , , , , ,

.

1)

,

가

. '

1' ' 28'(가
 , 20 61)
 16 0.3%(16/ 5,988) , 16
 7
 212 3.3%(7/ 212) . ' 1'
 3.3% , 'Gain(%)'가
 43.8 ' 1'
 43.8% .

가 .

. ' 28'(가
 , 20
 61) 43.8%
 . 'Index(%)'가 '1235.7'
 ' 1'

12 . ' 7' 9

'575.7'

5 (9).

9.

Rule	Node	Node-by-Node						Cumulative			
		Node	Node: Resp:	Node: Resp:	Gain	Index	Node: Resp	Gain	Index		
		n	%	n	%	(%)	(%)	%	:%	(%)	(%)
1	28	16	0.3	7	3.3	43.8	1235.7	0.3	3.3	43.8	1235.7
2	8	5	0.1	2	0.9	40.0	1129.8	0.4	4.3	42.9	1210.5
3	22	5	0.1	2	0.9	40.0	1129.8	0.4	5.2	42.3	1195.0
4	25	9	0.2	2	0.9	22.2	627.7	0.6	6.1	37.1	1049.1
5	27	81	1.4	13	6.1	16.0	453.3	1.9	12.3	22.4	633.1
6	16	41	0.7	6	2.8	14.6	413.3	2.6	15.1	20.4	575.7
7	9	25	0.4	3	1.4	12.0	338.9	3.0	16.5	19.2	543.2
8	7	504	8.4	37	17.5	7.3	207.4	11.5	34.0	10.5	296.5
9	21	29	0.5	2	0.9	6.9	194.8	11.9	35.0	10.3	292.3
10	17	259	4.3	16	7.6	6.2	174.5	16.3	42.5	9.2	261.0
11	23	99	1.7	6	2.8	6.1	171.2	17.9	45.3	8.9	252.7
12	10	79	1.3	4	1.9	5.1	143.0	19.2	47.2	8.7	245.2
13	18	151	2.5	7	3.3	4.6	130.9	21.8	50.5	8.2	232.0
14	5	1555	26.0	71	33.5	4.6	129.0	47.7	84.0	6.2	176.0
15	26	352	5.9	10	4.7	2.8	80.2	53.6	88.7	5.9	165.4
16	13	573	9.6	7	3.3	1.2	34.5	63.2	92.0	5.2	145.6
17	2	1625	27.1	14	6.6	0.9	24.3	90.3	98.6	3.9	109.2
18	15	290	4.8	2	0.9	0.7	19.5	95.2	99.5	3.7	104.6
19	24	164	2.7	1	0.5	0.6	17.2	97.9	100.0	3.6	102.1
20	20	126	2.1	0	0.0	0.0	0.0	100.0	100.0	3.5	100.0

2)

가
1' 8'(1 18
20 ,
) 3 0.2%(36/ 1,900)
, 3 1
106
0.9%(1/ 106) . ' 1'
0.9% , 'Gain(%)'가 33.3 '
1' 33.3%
. 'Index(%)'가 '597.5'
' 1'
6 . '
3' ' 12' '499.2'
5 (
10).

10.

Rule	Node	Node-by-Node						Cumulative			
		Node	Node	Resp	Resp	Gain	Index	Node	Resp	Gain	Index
		: n	: %	n	%	(%)	(%)	: %	%	(%)	(%)
1	8	3	0.2	1	0.9	33.3	597.5	0.2	0.9	33.3	597.5
2	11	71	3.7	20	18.9	28.2	504.9	3.9	19.8	28.4	508.7
3	12	163	8.6	45	42.5	27.6	494.8	12.5	62.3	27.8	499.2
4	5	273	14.3	35	33.0	12.9	230.6	26.8	95.3	19.8	355.7
5	10	121	6.4	2	1.9	1.7	29.6	33.2	97.2	16.3	293.1
6	7	168	8.8	1	0.9	0.6	10.7	42.0	98.1	13.0	233.6
7	1	911	48.0	2	1.9	0.22	3.9	90.0	100.0	6.2	111.2
8	4	191	10.1	0	0.0	0.0	0.0	100.0	100.0	5.6	100.0

3)

가
, 1' 16'
17 341 , 가
61) 141
1.7%(141/ 8,405) , 141 33
170 19.4%(33/ 170)
. ' 1'
19.4% , 'Gain(%)'가 23.4 ' 1'
23.4% .
가 .

.
 ‘ 16’(17 341 , 가
 61)
 23.4% . ‘Index(%)가 ’1157.1’
 ‘ 1’
 11 . ‘ 5’ ‘
 13’ ‘444.2’
 4 (11).

11.

Rule	Node	Node-by-Node						Cumulative			
		Node	Node	Resp	Resp	Gain	Index	Node	Resp	Gain	Index
		: n	: %	: n	: %	(%)	(%)	: %	%	(%)	(%)
1	16	141	1.68	33	19.4	23.4	1157.1	1.7	19.4	23.4	1157.1
2	17	280	3.33	32	18.8	11.4	565.0	5.0	38.2	15.4	763.3
3	5	211	2.51	15	8.8	7.1	351.5	7.5	47.1	12.7	625.8
4	10	68	0.81	3	1.8	4.4	218.1	8.3	48.8	11.9	586.2
5	13	413	4.91	17	10.0	4.1	203.5	13.2	58.8	9.0	444.2
6	6	512	6.09	15	8.8	2.9	144.8	19.3	67.7	7.1	349.9
7	8	1650	19.63	37	21.8	2.2	110.9	39.0	89.4	4.6	229.5
8	2	1479	17.60	15	8.8	1.0	50.1	56.6	98.2	3.5	173.7
9	11	967	11.51	3	1.8	0.3	15.3	68.1	100.0	3.0	146.9
10	3	2245	26.71	0	0.0	0.0	0.0	94.8	100.0	2.1	105.5
11	14	439	5.22	0	0.0	0.0	0.0	100.0	100.0	2.0	100.0

4.

,

.

96.5%,

94.4%,

98.0%

(12).

12.

	96.5%
	94.4%
	98.0%

, , Quality ,
 , ,
 Quality
 . , ,
 Quality .

5.

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가

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가

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(Index)가

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, 18 30

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5

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, 17 33 33 341

가 , , ,

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60

11

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, 17 33 33 341

가 , , ,

, , , , , ,

20 , 21-40 , 41-60

7

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, 1 6 가 ,

, , , ,

6

.

Quality

가

가 .

6.

가. QI

Quality Indicator 가

CQI Guideline, Quality Review, Concurrent, Tutorial

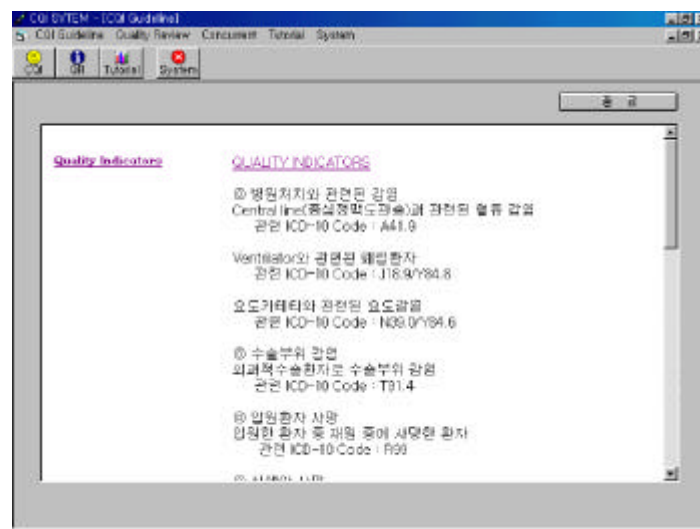
1) CQI Guideline

QI Guideline

QI Indicator 가

(ICD-10)

(12).



12. QI Guideline

2) Quality Review :

Quality Review

QI

Indicator

Indicator

(13).

CD SYSTEM (Quality Indicators)

CDI Guideline Quality Review Concurrence Tutorial System

CDI QI Tutorial System

Clinical Indicators

출생전환자수 100명
비율기준점 25명 1.551547 %

기간: 2000-12-01 ~ 2000-01-31
전국치
수치치

진출원번호	성별	연령	후진원번호	입원과	출원과	재원기간
1 873275	여자	52	874.6	내과	내과	59
2 309336	여자	46	874.6	소아과	소아과	21
3 309340	남자	00	090.0	신경과	신경과	107
4 375169	여자	86	121.0	신경과	신경과	22
5 372712	남자	72	804.9	신경과	신경과	21
6 308912	여자	84	112.0	신경과	신경과	99
7 314576	남자	85	163.9	신경과	신경과	99
8 373545	남자	74	163.9	신경과	신경과	61
9 306154	여자	67	306.200	신경과	신경과	132
10 372149	여자	90	161.4	신경과	신경과	132
11 371475	여자	56	161.0	신경과	신경과	180
12 374625	남자	40	071.1	신경과	신경과	54
13 247624	남자	78	093.1	신경과	신경과	218
14 374653	남자	69	071.1	신경과	신경과	44
15 373302	여자	58	051.3	신경과	신경과	42

13. Quality Review

Quality Indicator

(14).

CGI SYSTEM - [출력] | LQ: baseline | Quality Review | Concurrent | Tutorial | System

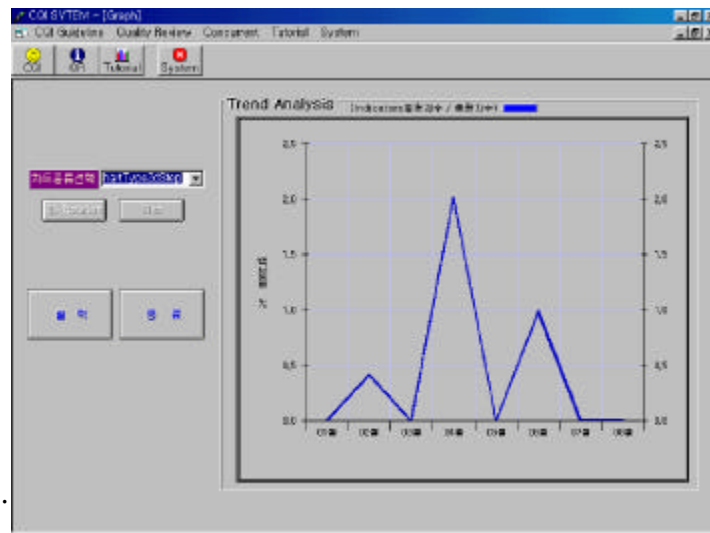
1 of 1+ | 100% | [Icons]

01-05-23 비노기계결업

원래종료일	성별	연령	추진단코드	원래종료	원래종료	원래종료
170,247	M	45	069.2A	신경외과	재활의학과	86
204,376	M	85	063.8	신경과	신경과	99
206,154	F	67	306.20C	신경외과	신경외과	152
247,824	M	71	033.1	신경외과	신경외과	276
308,312	F	84	012.0	신경과	신경과	99
339,836	F	46	K74.6	수화기내과	피식외과	27
369,340	M	66	C90.0	신경외과	혈액내과	107
369,576	F	11	C71.7	신경외과	신경외과	198

14. Quality Review

QI Indicator ,
(15).



15. Quality Review Graph

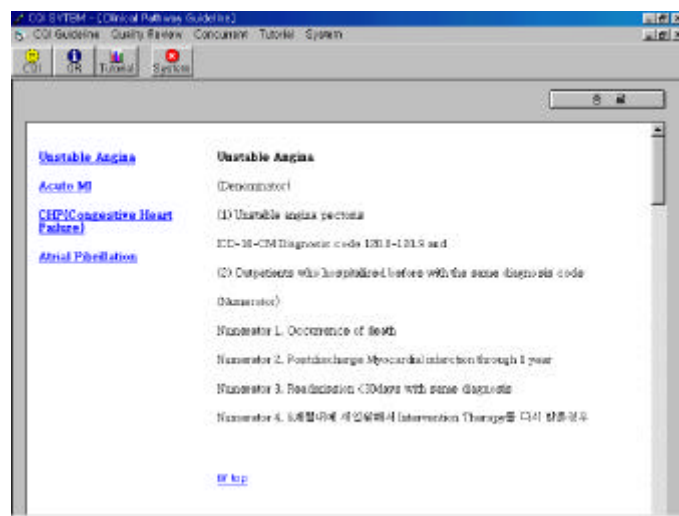
3) Concurrent :

QI Indicator
 (concurrent)
 Indicator
 Indicator
 (16).

16. Quality Indicator Screening

4) Tutorial

, , , Guideline
Critical Pathway (17).



17. Tutorial

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•

(1995)

20

2.0%

2.2%

0.7-5.0%

50.0%가

2%

3.5%

(1995)

1.3%

•

, ,
 16 가 2.1%
 16 1.2%
 0.9% . (1996)
 가 ,
 .
 .
 (2000)
 ,
 Ziegenfuss(1995) CQI 10가
 . (1996)
 1.03
 가 0.36
 .
 가 10
 . Albright(1993)

Indicator

10% , 5% . (1999)

가

가

가

·

(1997)

,

2 ,

3 .

14 . (1999)

19

· (1987)

(APACHE)

. Solberg (1997)

CQI

. (2000)

가

가

,

,

가

. Tabish(1996)

,

. Edward(1997)

CQI program

.

(Journal of the American Heart Association, 2000)

, ,

indicator

QI

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가

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process

가

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가

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,

QI

가

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(chart review),

(aberrance)

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(status progress)

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(On-Line

Analytical Processing, OLAP)

가

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2000 12 2001 1

Visual Basic 6.0

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Quality

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Quality

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12

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1 18 20

6

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17 33

33 341 가

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, , 60

11

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QI Guideline, Quality Review, Concurrent, Tutorial

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, 2000 12 2001

1

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가

. , Quality Indicator

(real time)

가

가

가

가

·
·, 1996
·, Data base., 2000
·, 1999
· (APACHE)
·, 1987
·
·, 1999
·
·, 1996
· 가.
·, 1999
·, 2000
·, 2000
· CQI
·, 2000
·, ·
· 2001 2001
· ; 421-443
· QA 2000 가

2000 ; 3-11

. QA 1999 ; 51-56
. , 1995
. CQI QA 1999 ; 1-20
, , QI .
, 1999
. , 1996
. , 1995
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. , 2000
. , 2000
. , 2001
, , 1997
, . SPSS , 1998
. , 1994
, ,
. QA 1998 ; 5(2) : 324-334
. CQI , 2001 ; 39-54
QA . 10 , 1996:92-93
. 가. , 2000

- . . , 1995
- QI . QI , 2000
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Abstract

Analysis of Healthcare Quality indicators using Data Mining and Development of a Decision Support System Quality Improvement

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Health Science and Management

Yonsei University

(Directed by professor Young Moon Chae, Ph.D.)

This study presented an analysis of healthcare quality indicators using data mining and a development of decision support system for quality improvement. Specifically, important factors influencing the key quality indicators were identified using a decision tree method for data mining based on 8,405 patients who discharged from the study hospital during the period between December 1, 2000 to January 31, 2001. In addition, a decision support system was developed to analyze and

monitor trends of these quality indicators using a Visual Basic 6.0. Guidelines and tutorial for quality improvement activities were also included in the system.

Of 12 selected quality indicators, decision tree analysis was performed for 3 indicators (namely, unscheduled readmission for the same or related condition, unscheduled returns to a intensive care unit (ICU), and inpatient mortality) which have more than 100 cases during the period. The optimum range of target group in healthcare quality indicators were identified from the gain chart. Important factors for the 3 indicators were: diagnosis group, disease group, and age for the unscheduled readmissions for the same or related condition; length of stay and disease group for the unscheduled returns to ICU; and length of stay, diagnosis group, and discharge department for the inpatient mortality.

In the future, a number of quality indicators should be increased to effectively support a hospital-wide continuous quality improvement (CQI) activity and the decision support system should be well integrated with the hospital OCS (Order Communication System) to support concurrent review.