



**อัตราการป่วยด้วยโรคติดต่อที่ต้องเฝ้าระวังบางโรค
และการแสดงผลการวิเคราะห์ข้อมูล**

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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1. อัตราการป่วยด้วยโรคติดต่อที่ต้องเฝ้าระวังบางโรค

ตารางที่ 1 อัตราป่วยด้วยโรคติดต่อที่ต้องเฝ้าระวังบางโรค ต่อประชากร 100,000 คน
พ.ศ. 2525-2533

โรค	2525	2530	2531	2533
วัณโรค (ระยะแพร่เชื้อ) (ร้อยละ)	30.88	33.56 (.22)	36.11 (.21)	35.60 (.19)
คอตีบ	2.32	1.00	0.40	0.10
ไอกรน	7.11	2.74	3.11	0.88
บาดทะยักในทารก*	62.94	46.83	37.30	20.80
หัด	57.11	78.67	67.55	52.13
หัดเยอรมัน	0.65	4.34	1.81	4.15
อหิวาตกโรค	1.33	9.91	4.21	-
ไข้สมองอักเสบ	3.18	3.19	2.97	2.14
กามโรค	52.06	169.94	194.91	194.81
(อัตราต่อ 1,000)	(6.80)	(7.69)	(7.04)	(6.50)
เอดส์ (ผู้ป่วยและผู้ติดเชื้อ)	-	.36	9.26	44.98

ที่มา: ปฏิทินสาธารณสุข พุทธศักราช 2535

หมายเหตุ : * หมายถึง อัตราต่อการเกิดมีชีพ 100,000 ราย

2. การวิเคราะห์โปรไฟล์

การวิเคราะห์โปรไฟล์มีวัตถุประสงค์ที่จะทำการทดสอบว่า จะสามารถรวมกลุ่มผู้ป่วยโรคติดเชื้ และกลุ่มผู้ป่วยวัณโรคปอด เข้าเป็นกลุ่มเดียวกันได้หรือไม่ เพื่อให้มีกลุ่มตัวอย่างน้อยลง ทำให้สะดวกต่อการวิเคราะห์ในขั้นต่อไป

***** PROFILE ANALYSIS *****

COMPUTE A = AGE.

COMPUTE B = CEA.

COMPUTE C = ABBALCEA.

COMPUTE D = SERUMCEA.

COMPUTE E = SERUMALB.

COMPUTE F = BALALB.

COMPUTE ID2 = ID1.

RECODE ID2 (3 = 2) (2 = 9).

MISSING ALL (9).

MANOVA A B C D E F BY ID2 (1,2) / TRANSFORM = REPEATED

The raw data or transformation pass is proceeding

83 cases are written to the compressed active file.

/ RENAME = AVERAGE , AMINUSB , BMINUSC , CMINUSD , DMINUSE , EMINUSF

/ ANALYSIS = (AMINUSB , BMINUSC , CMINUSD , DMINUSE , EMINUSF / AVERAGE)

/ PRINT TRANSFORM

/ DESIGN.

** ANALYSIS OF VARIANCE **

54 cases accepted.

0 cases rejected because of out-of-range factor values.

29 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

** ANALYSIS OF VARIANCE -- DESIGN 1 **

Transformation Matrix (Transposed)

	AVERAGE	AMINUSB	BMINUSC	CMINUSD	DMINUSE	EMINUSF
A	.167	1.000	.000	.000	.000	.000
B	.167	-1.000	1.000	.000	.000	.000
C	.167	.000	-1.000	1.000	.000	.000
D	.167	.000	.000	-1.000	1.000	.000
E	.167	.000	.000	.000	-1.000	1.000
F	.167	.000	.000	.000	.000	-1.000

** ANALYSIS OF VARIANCE -- DESIGN 1 **

Order of Variables for Analysis

Variates Covariates

AMINUSB

BMINUSC

CMINUSD

DMINUSE

EMINUSF

5 Dependent Variables

0 Covariates

Note.. TRANSFORMED variables are in the variates column.

** ANALYSIS OF VARIANCE -- DESIGN 1 **

EFFECT .. ID2 (กลุ่มผู้ป่วยโรคมะเร็งที่ขอบปอด)

Multivariate Tests of Significance (S = 1, M = 1 1/2, N = 23)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.34743	5.11108	5.00	48.00	.001
Hotellings	.53240	5.11108	5.00	48.00	.001
Wilks	.65257	5.11108	5.00	48.00	.001
Roys	.34743				

จากการทดสอบ โพรไฟล์ โดยมีสมมติฐานว่า

 H_0 : โพรไฟล์ทั้งสองขนานกัน H_1 : โพรไฟล์ทั้งสองไม่ขนานกัน

การวิเคราะห์พบว่า มีนัยสำคัญที่ระดับ .01 แสดงว่าโพรไฟล์ทั้งสองไม่ขนานกัน นั่นคือไม่สามารถรวมกลุ่มผู้ป่วยโรคติดเชื้อและกลุ่มผู้ป่วยวัณโรคปอดเป็นกลุ่มเดียวกันได้

2. การวิเคราะห์จำแนกประเภท (Discriminant Analysis)

ในการวิเคราะห์ผู้วิจัยเลือกใช้การวิเคราะห์จำแนกโดยวิธีแบบขั้นตอน และกำหนดให้ค่าของโอกาสความเป็นสมาชิกของแต่ละกลุ่มเท่ากัน การวิเคราะห์ที่ใช้โปรแกรมสำเร็จรูป SPSS7PC⁺ ดังต่อไปนี้ คือ

```
DISCRIMINANT / GROUPS ID (1,3)
                / VARIABLES AGE SEX SMOKE SYM1 TO SYM5 CL1 TO CL3
                / CEA TO BALALB
                / ANALYSIS age TO BALALB
                / METHOD WILKS
                / TOLERANCE .01 / STATISTICS all.
```

This Discriminant Analysis requires 11088 (10.8K) BYTES of workspace.

----- DISCRIMINANT ANALYSIS -----

On groups defined by ID (กลุ่มผู้ป่วย/หน่วยวิเคราะห์)

83 (unweighted) cases were processed.

0 of these were excluded from the analysis.

83 (unweighted) cases will be used in the analysis.

Number of Cases by Group

ID	Number of Cases		Label
	Unweighted	Weighted	
1 (ผู้ป่วยโรคติดเชื้อ)	15	15.0	
2 (ผู้ป่วยมะเร็งที่ขอบปอด)	29	29.0	
3 (ผู้ป่วยวัณโรคปอด)	39	39.0	
Total	83	83.0	

Wilks' Lambda (U-statistic) and univariate F-ratio
with 2 and 80 degrees of freedom

Variable	Wilks' Lambda	F	Significance
AGE	.88521	5.187	.0076
SEX	.99798	.8088E-01	.9224
SMOKE	.98054	.7940	.4556
SYM1	.95347	1.952	.1487
SYM2	.95711	1.792	.1732
SYM3	.95899	1.710	.1873
SYM4	.99282	.2892	.7496
SYM5	.89692	4.597	.0129
CL1	.96857	1.298	.2788
CL2	.77349	11.71	.0000
CL3	.84300	7.450	.0011
CEA	.53567	34.67	.0000
ABBALCEA	.79329	10.42	.0001
SERUMCEA	.86243	6.381	.0027
SERUMALB	.94192	2.466	.0913
BALALB	.96048	1.646	.1993

----- DISCRIMINANT ANALYSIS -----

On groups defined by ID

Analysis number 1 (กลุ่มผู้ป่วยโรคติดเชื้อ)

Stepwise variable selection

Selection rule: Minimize Wilks' Lambda

Maximum number of steps..... 32

Minimum Tolerance Level..... .01000

Minimum F to enter..... 1.0000

Maximum F to remove..... 1.0000

Canonical Discriminant Functions

Maximum number of functions..... 2
 Minimum cumulative percent of variance... 100.00
 Maximum significance of Wilks' Lambda.... 1.0000

Prior probability for each group is .33333

----- Variables not in the analysis after step 0 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	1.000000	1.000000	5.1870	.88521
SEX	1.000000	1.000000	.80884E-01	.99798
SMOKE	1.000000	1.000000	.79396	.98054
SYM1	1.000000	1.000000	1.9520	.95347
SYM2	1.000000	1.000000	1.7924	.95711
SYM3	1.000000	1.000000	1.7104	.95899
SYM4	1.000000	1.000000	.28922	.99282
SYM5	1.000000	1.000000	4.5969	.89692
CL1	1.000000	1.000000	1.2980	.96857
CL2	1.000000	1.000000	11.713	.77349
CL3	1.000000	1.000000	7.4495	.84300
CEA	1.000000	1.000000	34.673	.53567
ABBALCEA	1.000000	1.000000	10.423	.79329
SERUMCEA	1.000000	1.000000	6.3807	.86243
SERUMALB	1.000000	1.000000	2.4663	.94192
BALALB	1.000000	1.000000	1.6458	.96048

At step 1, CEA was included in the analysis.

		Degrees of Freedom	Signif.	Between Groups
Wilks' Lambda	.53567	1 2	80.0	
Equivalent F	34.6731	2	80.0	.0000

----- Variables in the analysis after step 1 -----

Variable	Tolerance	F to remove	Wilks' Lambda
CEA	1.0000000	34.673	

----- Variables not in the analysis after step 1 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	.9996468	.9996468	3.0491	.49728
SEX	.9989981	.9989981	.18708E-01	.53541
SMOKE	.9921271	.9921271	.58195	.52789
SYM1	.9903498	.9903498	1.0537	.52175
SYM2	.9915906	.9915906	2.1199	.50838
SYM3	.9698716	.9698716	2.9674	.49824
SYM4	.9808751	.9808751	.11356	.53413
SYM5	.9998007	.9998007	4.2457	.48368
CL1	.9975471	.9975471	.60917	.52753
CL2	.9981815	.9981815	7.7143	.44815
CL3	.9997457	.9997457	6.8195	.45680
ABBALCEA	.4632030	.4632030	1.9797	.51010
SERUMCEA	.6221566	.6221566	1.4769	.51636
SERUMALB	.6649083	.6649083	3.0605	.49715
BALALB	.9269819	.9269819	1.9141	.51091

F statistics and significances between pairs of groups after step 1

Each F statistic has 1 and 80.0 degrees of freedom.

Group	Group 1	Group 2
2	22.077	.0000
3	3.0103	67.967
	.0866	.0000

At step 2, CL2 was included in the analysis.

		Degrees of Freedom	Signif. Between Groups
Wilks' Lambda	.44815	2 2	80.0
Equivalent F	19.5048	4	158.0 .0000

----- Variables in the analysis after step 2 -----

Variable	Tolerance	F to remove	Wilks' Lambda
CL2	.9981815	7.7143	.53567
CEA	.9981815	28.676	.77349

----- Variables not in the analysis after step 2 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	.9938216	.9923649	2.3419	.42276
SEX	.9863095	.9855033	.63864E-01	.44741
SMOKE	.9759894	.9759894	.99612	.43698
SYM1	.9791586	.9791586	1.4473	.43211
SYM2	.9797193	.9797193	2.3713	.42246
SYM3	.9645420	.9645420	2.7809	.41832
SYM4	.9627350	.9627350	.21452	.44569
SYM5	.9500613	.9485227	3.4228	.41199
CL1	.7992669	.7992669	2.7608	.41852
CL3	.8631996	.8618491	2.7608	.41852
ABBALCEA	.4573054	.4573054	1.9606	.42670
SERUMCEA	.6056991	.6056991	.58898	.44148
SERUMALB	.6324419	.6324419	1.6399	.43006
BALALB	.9202719	.9202719	1.7437	.42897

F statistics and significances between pairs of groups after step 2
 Each F statistic has 2 and 79.0 degrees of freedom.

Group	Group 1	Group 2
2	11.100	
	.0001	
3	8.3128	40.628
	.0005	.0000

At step 3, SYM5 was included in the analysis.

		Degrees of Freedom	Signif. Between Groups
Wilks' Lambda	.41199	3 2	80.0
Equivalent F	14.5071	6	156.0 .0000

----- Variables in the analysis after step 3 -----

Variable	Tolerance	F to remove	Wilks' Lambda
SYM5	.9500613	3.4228	.44815
CL2	.9485227	6.7866	.48368
CEA	.9981593	26.697	.69401

----- Variables not in the analysis after step 3 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	.9918654	.9445566	2.3923	.38788
SEX	.9765872	.9319459	.11665	.41074
SMOKE	.9747452	.9319391	.88197	.40276
SYM1	.8915664	.8650721	2.5223	.38666
SYM2	.9493252	.9205873	3.2483	.37993
SYM3	.9523943	.9380959	3.2183	.38021
SYM4	.8299430	.8190174	.36185	.40815
CL1	.7992109	.7664401	2.5908	.38601

CL3	.8631391	.8256047	2.5908	.38601
ABBALCEA	.4531387	.4531387	1.3782	.39775
SERUMCEA	.6054886	.6054886	.59422	.40573
SERUMALB	.6324390	.6324390	1.5562	.39598
BALALB	.8822179	.8822179	2.7234	.38477

F statistics and significances between pairs of groups after step 3
Each F statistic has 3 and 78.0 degrees of freedom.

Group	Group 1	Group 2
2	10.217 .0000	
3	6.3096 .0007	27.906 .0000

At step 4, SYM2 was included in the analysis.

		Degrees of Freedom	Signif.	Between Groups
Wilks' Lambda	.37993	4 2	80.0	
Equivalent F	11.9804	8	154.0	.0000

----- Variables in the analysis after step 4 -----

Variable	Tolerance	F to remove	Wilks' Lambda
SYM2	.9493252	3.2483	.41199
SYM5	.9205873	4.3095	.42246
CL2	.9440153	6.8217	.44725
CEA	.9883462	26.997	.64634

----- Variables not in the analysis after step 4 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	.9667369	.9203551	2.0629	.36037
SEX	.9620873	.9151148	.80509E-01	.37913
SMOKE	.9737246	.9190507	.77011	.37239
SYM1	.7885702	.7885702	4.7367	.33782
SYM3	.9317755	.9137983	2.3547	.35776
SYM4	.6828793	.6828793	1.8956	.36188
CL1	.7845995	.7551124	3.1067	.35122
CL3	.8473589	.8253950	3.1067	.35122
ABBALCEA	.4441314	.4421211	1.8742	.36207
SERUMCEA	.5922793	.5922793	.75277	.37255
SERUMALB	.6229488	.6229488	1.8262	.36251
BALALB	.8806471	.8806471	2.2783	.35844

F statistics and significances between pairs of groups after step 4
Each F statistic has 4 and 77.0 degrees of freedom.

Group	Group 1	Group 2
2	9.6980	
	.0000	
3	5.6741	21.089
	.0005	.0000

At step 5, SYM1 was included in the analysis.

		Degrees of Freedom	Signif. Between Groups
Wilks' Lambda	.33782	5 2	80.0
Equivalent F	10.9517	10	152.0 .0000

----- Variables in the analysis after step 5 -----

Variable	Tolerance	F to remove	Wilks' Lambda
SYM1	.7885702	4.7367	.37993
SYM2	.8396565	5.4930	.38666
SYM5	.7981163	6.7989	.39827
CL2	.9398459	6.9109	.39926
CEA	.9659037	26.690	.57510

----- Variables not in the analysis after step 5 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	.9602625	.7832890	2.1276	.31968
SEX	.9620766	.7885613	.79137E-01	.33711
SMOKE	.9717412	.7869640	.56213	.33283
SYM3	.9266383	.7842225	2.0775	.32009
SYM4	.6295967	.5835883	3.7339	.30723
CL1	.7502772	.7502772	1.6020	.32398
CL3	.8102912	.7540742	1.6020	.32398
ABBALCEA	.4440502	.4366430	1.7873	.32245
SERUMCEA	.5682904	.5682904	.88227	.33006
SERUMALB	.6229470	.6224969	1.7951	.32239
BALALB	.8327924	.7415327	3.5571	.30855

F statistics and significances between pairs of groups after step 5

Each F statistic has 5 and 76.0 degrees of freedom.

Group	Group 1	Group 2
2	9.4450	.0000
3	6.6551	16.661
	.0000	.0000

At step 6, SYM4 was included in the analysis.

		Degrees of Freedom		Signif. Between Groups
Wilks' Lambda	.30723	6	2	80.0
Equivalent F	10.0516	12		150.0

----- Variables in the analysis after step 6 -----

Variable	Tolerance	F to remove	Wilks' Lambda
SYM1	.7270409	6.6704	.36188
SYM2	.6427933	9.0456	.38134
SYM4	.6295967	3.7339	.33782
SYM5	.5835883	10.612	.39418
CL2	.9275117	7.3053	.36708
CEA	.9610820	24.890	.51115

----- Variables not in the analysis after step 6 -----

Variable	Tolerance	Minimum		Wilks' Lambda
		Tolerance	F to enter	
AGE	.9403034	.5790436	2.2917	.28931
SEX	.9620536	.5816318	.78949E-01	.30658
SMOKE	.9649763	.5788730	.37116	.30418
SYM3	.6430157	.4368917	2.3745	.28870
CL1	.7297566	.5721167	.89541	.29997
CL3	.7881292	.5721167	.89541	.29997
ABBALCEA	.4425920	.4366311	1.8912	.29229
SERUMCEA	.5525866	.5525866	.84766	.30035
SERUMALB	.6149524	.5802916	1.9906	.29155
BALALB	.7931383	.5173003	4.9405	.27104

F statistics and significances between pairs of groups after step 6
 Each F statistic has 6 and 75.0 degrees of freedom.

Group	Group	1	2
2		9.3062	
		.0000	
3		6.9310	13.714
		.0000	.0000

At step 7, BALALB was included in the analysis.

	Degrees of Freedom	Signif. Between Groups
Wilks' Lambda	.27104	7 2 80.0
Equivalent F	9.73422	14 148.0 .0000

----- Variables in the analysis after step 7 -----

Variable	Tolerance	F to remove	Wilks' Lambda
SYM1	.6676277	9.0557	.33738
SYM2	.6296110	9.8790	.34341
SYM4	.5996179	5.1211	.30855
SYM5	.5173003	14.490	.37719
CL2	.9186559	6.7527	.32051
CEA	.8761282	27.685	.47384
BALALB	.7931383	4.9405	.30723

----- Variables not in the analysis after step 7 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
AGE	.9403034	.5137253	2.2587	.25524
SEX	.9620423	.5156967	.77760E-01	.27046
SMOKE	.9636544	.5124277	.33102	.26860
SYM3	.6351430	.4300832	2.4914	.25372
CL1	.7168342	.5132111	1.2516	.26205
CL3	.7741732	.5132111	1.2516	.26205
ABBALCEA	.3980106	.3580270	4.1547	.24334

SERUMCEA	.5432422	.5121173	1.1132	.26302
SERUMALB	.6077044	.5113151	2.3509	.25464

F statistics and significances between pairs of groups after step 7
Each F statistic has 7 and 74.0 degrees of freedom.

Group	Group 1	Group 2
2	10.295 .0000	
3	6.9446 .0000	12.131 .0000

At step 8, ABBALCEA was included in the analysis.

		Degrees of Freedom	Signif.	Between Groups
Wilks' Lambda	.24334	8 2	80.0	
Equivalent F	9.37302	16	146.0	.0000

----- Variables in the analysis after step 8 -----

Variable	Tolerance	F to remove	Wilks' Lambda
SYM1	.6573542	9.6429	.30763
SYM2	.6045388	11.469	.31980
SYM4	.5893334	5.7459	.28165
SYM5	.5130612	14.296	.33865
CL2	.9046109	6.6487	.28767
CEA	.3580270	22.070	.39048
ABBALCEA	.3980106	4.1547	.27104
BALALB	.7132471	7.3423	.29229

----- Variables not in the analysis after step 8 -----

Variable	Tolerance	Minimum		Wilks' Lambda
		Tolerance	F to enter	
AGE	.9199030	.3531766	2.5395	.22731
SEX	.9592644	.3579700	.95156E-01	.24270
SMOKE	.9609720	.3544029	.32581	.24116
SYM3	.6336298	.3523758	2.3244	.22858
CL1	.7163202	.3578800	1.2550	.23514
CL3	.7736180	.3578800	1.2550	.23514
SERUMCEA	.5105167	.3223715	.60750	.23930
SERUMALB	.6058150	.3018429	1.8914	.23119

F statistics and significances between pairs of groups after step 8
Each F statistic has 8 and 73.0 degrees of freedom.

Group	Group 1	Group 2
2	10.933	.0000
3	6.6294	11.225
	.0000	.0000

At step 9, AGE was included in the analysis.

Wilks' Lambda	Degrees of Freedom	Signif. Between Groups
.22731	9 2 80.0	
Equivalent F	8.77970 18 144.0	.0000

----- Variables in the analysis after step 9 -----

Variable	Tolerance	F to remove	Wilks' Lambda
AGE	.9199030	2.5395	.24334
SYM1	.6511947	9.5696	.28773

SYM2	.5822745	10.757	.29523
SYM4	.5805481	5.6473	.26296
SYM5	.5105228	13.847	.31474
CL2	.9022788	5.7482	.26360
CEA	.3531766	22.560	.36975
ABBALCEA	.3893755	4.4248	.25524
BALALB	.7116595	7.3235	.27355

----- Variables not in the analysis after step 9 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
SEX	.8958236	.3530620	.10788E-01	.22724
SMOKE	.8497470	.3455143	1.2590	.21952
SYM3	.6310159	.3482820	1.8727	.21592
CL1	.6416579	.3530565	2.1546	.21430
CL3	.6929836	.3530565	2.1546	.21430
SERUMCEA	.4784357	.3220176	.14282	.22640
SERUMALB	.5911812	.3011889	1.3427	.21902

F statistics and significances between pairs of groups after step 9
Each F statistic has 9 and 72.0 degrees of freedom.

Group	1	2
-------	---	---

Group

2	9.7428	
	.0000	

3	6.0269	11.027
	.0000	.0000

At step 10, CL1 was included in the analysis.

Degrees of Freedom Signif. Between Groups

Wilks' Lambda	.21430	10	2	80.0
Equivalent F	8.23724	20	142.0	.0000

----- Variables in the analysis after step 10 -----

Variable	Tolerance	F to remove	Wilks' Lambda
AGE	.8240213	3.4528	.23514
SYM1	.6305671	7.0895	.25710
SYM2	.5801260	10.734	.27910
SYM4	.5752547	4.7098	.24273
SYM5	.5082292	12.421	.28928
CL1	.6416579	2.1546	.22731
CL2	.7345339	7.8818	.26188
CEA	.3530565	22.256	.34865
ABBALCEA	.3891829	4.2904	.24020
BALALB	.7003098	7.6153	.26027

----- Variables not in the analysis after step 10 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
SEX	.8957492	.3529399	.12533E-01	.21422
SMOKE	.8341133	.3455133	.91359	.20885
SYM3	.6221441	.3482753	1.5024	.20548
CL3	.0000000	.0000000		
SERUMCEA	.4500296	.3192694	.47638	.21142
SERUMALB	.5796502	.2996651	1.4147	.20597

F statistics and significances between pairs of groups after step 10

Each F statistic has 10 and 71.0 degrees of freedom.

Group	Group 1	Group 2
2	8.8117	.0000
3	6.0531	10.050
	.0000	.0000

At step 11, SYM3 was included in the analysis.

		Degrees of Freedom	Signif. Between Groups
Wilks' Lambda	.20548	11 2	80.0
Equivalent F	7.67487	22	140.0 .0000

----- Variables in the analysis after step 11 -----

Variable	Tolerance	F to remove	Wilks' Lambda
AGE	.8158787	2.7654	.22171
SYM1	.5943864	6.7629	.24518
SYM2	.4813210	8.8553	.25747
SYM3	.6221441	1.5024	.21430
SYM4	.4113418	3.7897	.22773
SYM5	.4794363	11.040	.27030
CL1	.6326365	1.7777	.21592
CL2	.7345339	7.5177	.24961
CEA	.3482753	22.696	.33873
ABBALCEA	.3877416	3.9892	.22890
BALALB	.6930653	7.6409	.25034

----- Variables not in the analysis after step 11 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
SEX	.8939060	.3482184	.35418E-02	.20546
SMOKE	.8339829	.3410737	.83630	.20062
CL3	.0000000	.0000000		
SERUMCEA	.4475827	.3167687	.35796	.20337
SERUMALB	.5778287	.2974507	1.2259	.19843

F statistics and significances between pairs of groups after step 11
Each F statistic has 11 and 70.0 degrees of freedom.

Group	Group 1	Group 2
2	7.9844 .0000	
3	5.5371 .0000	9.6410 .0000

At step 12, SERUMALB was included in the analysis.

		Degrees of Freedom	Signif.	Between Groups
Wilks' Lambda	.19843	12 2	80.0	
Equivalent F	7.15819	24	138.0	.0000

----- Variables in the analysis after step 12 -----

Variable	Tolerance	F to remove	Wilks' Lambda
AGE	.8079741	2.3875	.21216
SYM1	.5876208	6.8376	.23776
SYM2	.4648965	8.9219	.24974
SYM3	.6201891	1.3120	.20597
SYM4	.4002079	3.7944	.22025
SYM5	.4708275	11.317	.26352
CL1	.6192683	1.7801	.20867
CL2	.7205492	6.8578	.23787
CEA	.2974507	23.946	.33616
ABBALCEA	.3856707	3.4902	.21850
SERUMALB	.5778287	1.2259	.20548
BALALB	.6909034	7.6620	.24250

----- Variables not in the analysis after step 12 -----

Variable	Tolerance	Minimum Tolerance	F to enter	Wilks' Lambda
SEX	.8602387	.2951845	.60109E-01	.19808
SMOKE	.7892452	.2826302	1.3005	.19112
CL3	.0000000	.0000000		
SERUMCEA	.1924180	.1924180	1.3504	.19085

F statistics and significances between pairs of groups after step 12
Each F statistic has 12 and 69.0 degrees of freedom.

Group	Group 1	Group 2
2	7.5220 .0000	
3	5.0048 .0000	9.1593 .0000

OAt step 13, SERUMCEA was included in the analysis.

	Wilks' Lambda	Degrees of Freedom	Signif.	Between Groups
	.19085	13 2	80.0	
Equivalent F	6.74273	26	136.0	.0000

----- Variables in the analysis after step 13 -----

Variable	Tolerance	F to remove	Wilks' Lambda
AGE	.7934409	2.3170	.20385
SYM1	.5617127	7.6778	.23395
SYM2	.4637928	8.0059	.23579
SYM3	.6187612	1.3171	.19824

SYM4	.3896687	2.8830	.20703
SYM5	.4696458	10.036	.24718
CL1	.5898584	2.0775	.20251
CL2	.7067074	7.0480	.23041
CEA	.2974444	22.587	.31763
ABBALCEA	.3400437	4.5986	.21666
SERUMCEA	.1924180	1.3504	.19843
SERUMALB	.2484114	2.2306	.20337
BALALB	.6878991	7.7154	.23416

----- Variables not in the analysis after step 13 -----

Variable	Tolerance	Tolerance Minimum	F to enter	Wilks' Lambda
SEX	.8599968	.1923639	.63890E-01	.19049
SMOKE	.7821151	.1906797	1.2274	.18410
CL3	.0000000	.0000000		

F statistics and significances between pairs of groups after step 13
 Each F statistic has 13 and 68.0 degrees of freedom.

Group	1	2
Group 2	7.3101 .0000	
Group 3	4.7655 .0000	8.4316 .0000

At step 14, SMOKE was included in the analysis.

	Degrees of Freedom	Signif.	Between Groups
Wilks' Lambda	.18410	14 2	80.0
Equivalent F	6.36791	28	134.0 .0000

----- Variables in the analysis after step 14 -----

Variable	Tolerance	F to remove	Wilks' Lambda
AGE	.7393165	3.0357	.20079
SMOKE	.7821151	1.2274	.19085
SYM1	.5610985	7.5086	.22537
SYM2	.4601794	7.6689	.22625
SYM3	.6181727	1.1712	.19054
SYM4	.3858992	2.6551	.19869
SYM5	.4636737	9.7943	.23793
CL1	.5861687	1.8517	.19428
CL2	.7065459	6.8611	.22181
CEA	.2824419	23.502	.31326
ABBALCEA	.3390336	4.6090	.20943
SERUMCEA	.1906797	1.2765	.19112
SERUMALB	.2466410	2.3228	.19687
BALALB	.6814278	7.7217	.22654

----- Variables not in the analysis after step 14 -----

Variable	Minimum		
	Tolerance	Tolerance	F to enter
SEX	.6027297	.1894049	.20689
CL3	.0000000	.0000000	

F statistics and significances between pairs of groups after step 14
 Each F statistic has 14 and 67.0 degrees of freedom.

Group	Group	
	1	2
2	6.7418	
	.0000	
3	4.4428	8.1456
	.0000	.0000

F level or tolerance or VIN insufficient for further computation.

Summary Table

Step	Action	Vars	Wilks'		
Entered	Removed	In	Lambda	Sig.	Label
1	CEA	1	.53567	.0000	
2	CL2	2	.44815	.0000	
3	SYM5	3	.41199	.0000	
4	SYM2	4	.37993	.0000	
5	SYM1	5	.33782	.0000	
6	SYM4	6	.30723	.0000	
7	BALALB	7	.27104	.0000	
8	ABBALCEA	8	.24334	.0000	
9	AGE	9	.22731	.0000	
10	CL1	10	.21430	.0000	
11	SYM3	11	.20548	.0000	
12	SERUMALB	12	.19843	.0000	
13	SERUMCEA	13	.19085	.0000	
14	SMOKE	14	.18410	.0000	

Classification Function Coefficients

(Fisher's Linear Discriminant Functions)

ID	=	1	2	3
		โรคติดเชื้อ	มะเร็งที่ขอบปอด	วัณโรคปอด
AGE		.3562663	.3813343	.3051482
SMOKE		4.193398	4.907484	3.346184
SYM1		9.181159	4.496142	4.942795
SYM2		22.63562	13.89091	14.54528
SYM3		5.941554	6.827546	5.059241
SYM4		11.32780	8.421762	8.148510
SYM5		15.02699	5.611258	8.151981

CL1	5.948568	4.396871	3.595010
CL2	8.456377	6.487546	3.864060
CEA	.1743034E-02	.4811125E-01	.7496143E-02
ABBALCEA	.2494870E-01	-.1833935E-01	.3252865E-02
SERUMCEA	-.5871429E-01	-.2930517E-01	-.3787946E-01
SERUMALB	.9536053E-01	.4079937E-01	.7483490E-01
BALALB	-.4518076E-02	.1255975E-01	.5167176E-02
(constant)	-26.70130	-24.93187	-15.57390

Canonical Discriminant Functions

Fcn	Eigenvalue	Variance	Pct	Cum Pct	Corr	Chisquare	DF	Sig
1*	1.8172	66.19	66.19	.8031	:	124.381	28	.0000
2*	.9281	33.81	100.00	.6938	:	48.255	13	.0000

* marks the 2 canonical discriminant functions remaining in the analysis.

Standardized Canonical Discriminant Function Coefficients

	FUNC 1	FUNC 2
AGE	.32855	.29804
SMOKE	.22593	.15962
SYM1	-.28415	.75480
SYM2	-.29963	.84891
SYM3	.25452	.16345
SYM4	-.11881	.61354
SYM5	-.51322	.81280
CL1	.02038	.43021
CL2	.17800	.67629
CEA	1.49622	-.18101
ABBALCEA	-.61138	.49011
SERUMCEA	.33549	-.49908
SERUMALB	-.58218	.30329
BALALB	.49756	-.48922

Structure Matrix:

Pooled-within-groups correlations between discriminating variables
and canonical discriminant functions
(Variables ordered by size of correlation within function)..

	FUNC 1	FUNC 2
CEA	.67302*	.21708
ABBALCEA	.35134*	.19768
SERUMCEA	.29612*	.01403
AGE	.25143*	.12629
SERUMALB	.18415*	-.00635
SYM3	.14650*	-.06366
CL1	-.12591*	.06265
CL2	.24453	.44548*
CL3	-.07285	-.43621*
SYM5	-.15497	.27714*
BALALB	-.03957	-.20314*
SYM1	.08772	.19369*
SYM2	-.10170	.16742*
SMOKE	-.07266	.10512*
SEX	.01960	.07621*
SYM4	-.04922	-.05520*

Unstandardized Canonical Discriminant Function Coefficients

	FUNC 1	FUNC 2
AGE	.2209568E-01	.2004402E-01
SMOKE	.4737709	.3347112
SYM1	-.6042502	1.605106
SYM2	-1.082015	3.065549
SYM3	.5446648	.3497736
SYM4	-.2341468	1.209134
SYM5	-1.634365	2.588373

CL1	.4264012E-01	.9001320
CL2	.4646179	1.765252
CEA	.1523177E-01	-.1842707E-02
ABBALCEA	-.1004726E-01	.8054254E-02
SERUMCEA	.5268006E-02	-.7836761E-02
SERUMALB	-.1440705E-01	.7505535E-02
BALALB	.3676021E-02	-.3614372E-02
(constant)	-2.043667	-3.705629

Canonical Discriminant Functions evaluated at Group Means (Group Centroids)

Group	FUNC 1	FUNC 2
1	-1.01380	1.87892
2	1.80568	.02150
3	-.95276	-.73865

Test of equality of group covariance matrices using Box's M

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Group Label	Rank	Log Determinant
1	12	(singular)
2	14	28.414042
3	14	15.155265
Pooled Within-Groups Covariance Matrix	14	28.761115

NOTE 10474

SINGULAR COVARIANCE MATRICES FOR DSC--The non-singular groups are tested against their own pooled within-groups covariance matrix. The log of the determinant is listed below:

Log of determinant: 28.905175

Box's M Approximate F Degrees of freedom Significance
 536.25 3.9082 105, 11383.8 .0000

Classification Results -

Actual Group	No. of Cases	Predicted Group Membership		
		1	2	3
Group 1	15	15 100.0%	0 .0%	0 .0%
Group 2	29	2 6.9%	23 79.3%	4 13.8%
Group 3	39	5 12.8%	1 2.6%	33 84.6%

Percent of "grouped" cases correctly classified: 85.54%

Classification Processing Summary

83 Cases were processed.

0 Cases were excluded for missing or out-of-range group codes.

0 Cases had at least one missing discriminating variable.

83 Cases were used for printed output.

This procedure was completed at 22:43:43

ประวัติผู้เขียน

ชื่อ	นายพรเทพ มานิตย์ศิริกุล
วัน เดือน ปี เกิด	20 มิถุนายน 2498
ประวัติการศึกษา	สำเร็จการศึกษาชั้นมัธยมศึกษาปีที่ 3 ที่โรงเรียนอัสสัมชัญนครราชสีมา จังหวัดนครราชสีมา เมื่อปีการศึกษา 2514 สำเร็จการศึกษาชั้นมัธยมศึกษาปีที่ 5 ที่โรงเรียนราชสีมาวิทยาลัย จังหวัดนครราชสีมา เมื่อปีการศึกษา 2516 สำเร็จการศึกษาปริญญาตรี วิชาเอกคณิตศาสตร์ จากคณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่ เมื่อปีการศึกษา 2524
ประสบการณ์ในการทำงาน	ปี 2526-2528 อาจารย์คณิตศาสตร์ โรงเรียนเทคโนโลยีนครราชสีมา จังหวัดนครราชสีมา ปี 2529-2533 อาจารย์คณิตศาสตร์ โรงเรียนอัสสัมชัญนครราชสีมา จังหวัดนครราชสีมา ปี 2537-ปัจจุบัน อาจารย์คณิตศาสตร์ โรงเรียนมงฟอร์ตวิทยาลัย จังหวัดเชียงใหม่