The CONTENTS Procedure

Data Set Name	WORK.IMPORT	**Observations**	1979
Member Type	DATA	**Variables**	24
Engine	V9	**Indexes**	0
Created	11/29/2019 00:51:52	**Observation Length**	192
Last Modified	11/29/2019 00:51:52	**Deleted Observations**	0
Protection		**Compressed**	NO
Data Set Type		**Sorted**	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	65536
Number of Data Set Pages	6
First Data Page	1
Max Obs per Page	340
Obs in First Data Page	315
Number of Data Set Repairs	0
Filename	/tmp/SAS_work8F3900000A78_localhost.localdomain/SAS_work5E7E00000A78_localhost.localdomain/import.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	671623
Access Permission	rw-rw-r--
Owner Name	sasdemo
File Size	448KB
File Size (bytes)	458752

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat
8	BMI	Num	8	BEST12.	BEST32.
20	ID	Num	8	BEST12.	BEST32.
24	OPTIMAL	Num	8	BEST12.	BEST32.
6	age	Num	8	BEST12.	BEST32.
3	death	Num	8	BEST12.	BEST32.
14	event_season2	Num	8	BEST12.	BEST32.
15	event_season3	Num	8	BEST12.	BEST32.
16	event_season4	Num	8	BEST12.	BEST32.
10	fev1fvcratio	Num	8	BEST12.	BEST32.

The CONTENTS Procedure

Alphabetic List of Variables and Attributes					
#	**Variable**	**Type**	**Len**	**Format**	**Informat**
9	fev1pp	Num	8	BEST12.	BEST32.
1	gaptime	Num	8	BEST12.	BEST32.
21	male	Num	8	BEST12.	BEST32.
22	nowsmk	Num	8	BEST12.	BEST32.
17	num_re1	Num	8	BEST12.	BEST32.
18	num_re2	Num	8	BEST12.	BEST32.
19	num_re3	Num	8	BEST12.	BEST32.
23	oxygen	Num	8	BEST12.	BEST32.
7	packyears	Num	8	BEST12.	BEST32.
11	rand_season2	Num	8	BEST12.	BEST32.
12	rand_season3	Num	8	BEST12.	BEST32.
13	rand_season4	Num	8	BEST12.	BEST32.
2	recurrent_event	Num	8	BEST12.	BEST32.
4	trtSal	Num	8	BEST12.	BEST32.
5	trtSal_Flu	Num	8	BEST12.	BEST32.

The CONTENTS Procedure

Data Set Name	WORK.COPD	**Observations**	1979
Member Type	DATA	**Variables**	24
Engine	V9	**Indexes**	0
Created	11/29/2019 01:26:05	**Observation Length**	192
Last Modified	11/29/2019 01:26:05	**Deleted Observations**	0
Protection		**Compressed**	NO
Data Set Type		**Sorted**	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	65536
Number of Data Set Pages	6
First Data Page	1
Max Obs per Page	340
Obs in First Data Page	315
Number of Data Set Repairs	0
Filename	/tmp/SAS_work8F3900000A78_localhost.localdomain/SAS_work5E7E00000A78_localhost.localdomain/copd.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	671667
Access Permission	rw-rw-r--
Owner Name	sasdemo
File Size	448KB
File Size (bytes)	458752

Alphabetic List of Variables and Attributes					
#	**Variable**	**Type**	**Len**	**Format**	**Informat**
8	BMI	Num	8	BEST12.	BEST32.
20	ID	Num	8	BEST12.	BEST32.
24	OPTIMAL	Num	8	BEST12.	BEST32.
6	age	Num	8	BEST12.	BEST32.
3	death	Num	8	BEST12.	BEST32.
14	event_season2	Num	8	BEST12.	BEST32.
15	event_season3	Num	8	BEST12.	BEST32.
16	event_season4	Num	8	BEST12.	BEST32.
10	fev1fvcratio	Num	8	BEST12.	BEST32.

The CONTENTS Procedure

Alphabetic List of Variables and Attributes					
#	**Variable**	**Type**	**Len**	**Format**	**Informat**
9	fev1pp	Num	8	BEST12.	BEST32.
1	gaptime	Num	8	BEST12.	BEST32.
21	male	Num	8	BEST12.	BEST32.
22	nowsmk	Num	8	BEST12.	BEST32.
17	num_re1	Num	8	BEST12.	BEST32.
18	num_re2	Num	8	BEST12.	BEST32.
19	num_re3	Num	8	BEST12.	BEST32.
23	oxygen	Num	8	BEST12.	BEST32.
7	packyears	Num	8	BEST12.	BEST32.
11	rand_season2	Num	8	BEST12.	BEST32.
12	rand_season3	Num	8	BEST12.	BEST32.
13	rand_season4	Num	8	BEST12.	BEST32.
2	recurrent_event	Num	8	BEST12.	BEST32.
4	trtSal	Num	8	BEST12.	BEST32.
5	trtSal_Flu	Num	8	BEST12.	BEST32.

The NLMIXED Procedure

Specifications	
Data Set	WORK.COPD
Dependent Variable	gaptime
Distribution for Dependent Variable	General
Random Effects	z
Distribution for Random Effects	Normal
Subject Variable	ID
Optimization Technique	Dual Quasi-Newton
Integration Method	Adaptive Gaussian Quadrature

Dimensions	
Observations Used	1979
Observations Not Used	0
Total Observations	1979
Subjects	1521
Max Obs per Subject	9
Parameters	16
Quadrature Points	10

Initial Parameters									
ln_gamma_d	**b_d_0**	**b_d_trtSal**	**b_d_trtSal_Flu**	**b_d_age**	**b_d_packyears**	**b_d_BMI**	**b_d_fev1pp**	**b_d_fev1fvcratio**	**b_d_num_re1**
0.1548	-2.7168	-0.11	-0.2866	0.4341	0.8038	-0.3106	-3.72	-0.2173	1.18

Initial Parameters						
b_d_num_re2	**b_d_num_re3**	**b_d_male**	**b_d_nowsmk**	**b_d_oxygen**	**theta**	**Negative Log Likelihood**
1.6245	1.864	0.56	0.6185	0.5416	1	234.100403

Iteration History					
Iteration	**Calls**	**Negative Log Likelihood**	**Difference**	**Maximum Gradient**	**Slope**
1	5	233.8151	0.285352	24.5831	-118.041
2	9	232.5949	1.2202	3.18087	-1.61500
3	13	231.5813	1.013516	5.41738	-0.27332
4	15	231.2451	0.336229	8.02875	-1.20934
5	17	230.9908	0.254278	1.78703	-0.37275
6	19	230.7328	0.258027	9.72888	-0.27310
7	21	230.4970	0.235763	2.36500	-0.24116

The NLMIXED Procedure

Iteration History					
Iteration	Calls	Negative Log Likelihood	Difference	Maximum Gradient	Slope
8	24	230.4397	0.057359	0.61554	-0.09482
9	27	230.4149	0.024806	1.19408	-0.01401
10	31	230.3281	0.086774	0.82069	-0.03211
11	34	230.3073	0.020756	1.57608	-0.01248
12	38	230.2655	0.041864	0.68374	-0.02035
13	41	230.2535	0.011995	0.33019	-0.01235
14	45	230.1547	0.098785	0.71923	-0.01164
15	48	230.1431	0.01163	0.30942	-0.01795
16	52	230.1156	0.027505	0.53033	-0.00459
17	55	230.1058	0.009772	0.31728	-0.01131
18	59	230.0736	0.032143	0.35099	-0.00519
19	62	230.0649	0.008761	0.32816	-0.01204
20	64	230.0526	0.012325	0.34454	-0.00257
21	66	230.0455	0.007036	0.64767	-0.00983
22	68	230.0390	0.006485	0.24341	-0.00958
23	70	230.0312	0.007797	0.39186	-0.00473
24	72	230.0236	0.007637	0.17711	-0.00640
25	75	230.0229	0.000714	0.094465	-0.00105

NOTE: GCONV convergence criterion satisfied.

Fit Statistics	
-2 Log Likelihood	460.0
AIC (smaller is better)	492.0
AICC (smaller is better)	492.3
BIC (smaller is better)	577.3

Parameter Estimates								
Parameter	Estimate	Standard Error	DF	t Value	Pr > |t|	95% Confidence Limits		Gradient
ln_gamma_d	0.3499	0.1751	1520	2.00	0.0458	0.006540	0.6933	-0.02792
b_d_0	-2.4117	1.0404	1520	-2.32	0.0206	-4.4526	-0.3708	-0.09446
b_d_trtSal	-0.1952	0.2055	1520	-0.95	0.3423	-0.5984	0.2079	-0.00010
b_d_trtSal_Flu	-0.5073	0.4955	1520	-1.02	0.3061	-1.4792	0.4646	0.041348
b_d_age	0.8772	1.3200	1520	0.66	0.5064	-1.7119	3.4664	0.056509

The NLMIXED Procedure

Parameter Estimates

Parameter	Estimate	Standard Error	DF	t Value	Pr > |t|	95% Confidence Limits		Gradient
b_d_packyears	0.5736	0.6330	1520	0.91	0.3650	-0.6680	1.8153	0.039486
b_d_BMI	-1.4168	1.8799	1520	-0.75	0.4512	-5.1043	2.2707	0.028355
b_d_fev1pp	-3.1526	1.1302	1520	-2.79	0.0053	-5.3694	-0.9357	0.039539
b_d_fev1fvcratio	0.1952	1.0823	1520	0.18	0.8569	-1.9278	2.3183	-0.03237
b_d_num_re1	1.3459	0.2551	1520	5.28	<.0001	0.8455	1.8463	0.024722
b_d_num_re2	1.8258	0.4865	1520	3.75	0.0002	0.8715	2.7801	0.090707
b_d_num_re3	2.6101	0.9474	1520	2.76	0.0059	0.7519	4.4684	0.048356
b_d_male	0.4607	0.2287	1520	2.01	0.0442	0.01205	0.9094	0.027554
b_d_nowsmk	0.5747	0.2788	1520	2.06	0.0394	0.02780	1.1216	0.031028
b_d_oxygen	0.3794	0.2290	1520	1.66	0.0977	-0.06973	0.8285	0.032898
theta	1.1635	2.4087	1520	0.48	0.6291	-3.5612	5.8881	0.029720

The NLMIXED Procedure

Covariance Matrix of Parameter Estimates									
	ln_gamma_d	b_d_0	b_d_trtSal	b_d_trtSal_Flu	b_d_age	b_d_packyears	b_d_BMI	b_d_fev1pp	b_d_fev1fvcratio
ln_gamma_d	0.03064	0.03628	-0.00382	-0.01531	-0.05010	-0.00354	0.09972	0.006667	-0.01369
b_d_0	0.03628	1.0825	-0.01330	0.002285	-1.0993	0.009058	-0.7612	0.1581	-0.1759
b_d_trtSal	-0.00382	-0.01330	0.04225	0.02610	-0.00117	0.003439	-0.01371	0.007846	0.01094
b_d_trtSal_Flu	-0.01531	0.002285	0.02610	0.2455	0.005384	-0.03242	-0.1190	0.03074	0.04299
b_d_age	-0.05010	-1.0993	-0.00117	0.005384	1.7423	-0.2088	0.1616	-0.2818	0.09399
b_d_packyears	-0.00354	0.009058	0.003439	-0.03242	-0.2088	0.4007	0.07901	-0.04522	-0.00624
b_d_BMI	0.09972	-0.7612	-0.01371	-0.1190	0.1616	0.07901	3.5340	-0.3217	-0.4144
b_d_fev1pp	0.006667	0.1581	0.007846	0.03074	-0.2818	-0.04522	-0.3217	1.2773	-0.6495
b_d_fev1fvcratio	-0.01369	-0.1759	0.01094	0.04299	0.09399	-0.00624	-0.4144	-0.6495	1.1715
b_d_num_re1	0.006029	-0.02508	-0.00926	-0.02739	-0.01962	0.007371	0.06642	-0.03770	-0.01945
b_d_num_re2	0.03031	-0.01867	-0.01968	-0.04858	-0.05522	0.01324	0.1798	-0.1060	-0.01612
b_d_num_re3	0.09995	-0.00566	-0.04845	-0.1351	-0.1740	0.04063	0.5347	-0.2331	-0.08479
b_d_male	0.002071	-0.03034	-0.00350	-0.01300	-0.04070	0.02575	0.01224	-0.00870	0.004164
b_d_nowsmk	0.01212	-0.08471	-0.00677	-0.02243	0.04894	0.02714	0.1350	-0.06651	-0.02771
b_d_oxygen	-0.00008	-0.03284	-0.00203	0.008003	-0.02834	0.009049	-0.03080	0.05305	-0.01989
theta	0.3112	0.1254	-0.1036	-0.3637	-0.6206	0.06635	1.4894	-0.5128	-0.2180

Covariance Matrix of Parameter Estimates						
b_d_num_re1	b_d_num_re2	b_d_num_re3	b_d_male	b_d_nowsmk	b_d_oxygen	theta
0.006029	0.03031	0.09995	0.002071	0.01212	-0.00008	0.3112
-0.02508	-0.01867	-0.00566	-0.03034	-0.08471	-0.03284	0.1254
-0.00926	-0.01968	-0.04845	-0.00350	-0.00677	-0.00203	-0.1036
-0.02739	-0.04858	-0.1351	-0.01300	-0.02243	0.008003	-0.3637
-0.01962	-0.05522	-0.1740	-0.04070	0.04894	-0.02834	-0.6206
0.007371	0.01324	0.04063	0.02575	0.02714	0.009049	0.06635
0.06642	0.1798	0.5347	0.01224	0.1350	-0.03080	1.4894
-0.03770	-0.1060	-0.2331	-0.00870	-0.06651	0.05305	-0.5128
-0.01945	-0.01612	-0.08479	0.004164	-0.02771	-0.01989	-0.2180
0.06507	0.05588	0.1175	0.01124	0.01731	0.004280	0.2733
0.05588	0.2367	0.2810	0.01893	0.04860	0.008893	0.7100
0.1175	0.2810	0.8975	0.05222	0.1263	0.02847	2.0265
0.01124	0.01893	0.05222	0.05232	0.01043	0.005007	0.1250
0.01731	0.04860	0.1263	0.01043	0.07773	0.01578	0.3328
0.004280	0.008893	0.02847	0.005007	0.01578	0.05242	0.08130
0.2733	0.7100	2.0265	0.1250	0.3328	0.08130	5.8017

The NLMIXED Procedure

Correlation Matrix of Parameter Estimates									
	ln_gamma_d	b_d_0	b_d_trtSal	b_d_trtSal_Flu	b_d_age	b_d_packyears	b_d_BMI	b_d_fev1pp	b_d_fev1fvcratio
ln_gamma_d	1.0000	0.1992	-0.1062	-0.1765	-0.2168	-0.0319	0.3030	0.0337	-0.0723
b_d_0	0.1992	1.0000	-0.0622	0.0044	-0.8005	0.0138	-0.3892	0.1344	-0.1562
b_d_trtSal	-0.1062	-0.0622	1.0000	0.2563	-0.0043	0.0264	-0.0355	0.0338	0.0492
b_d_trtSal_Flu	-0.1765	0.0044	0.2563	1.0000	0.0082	-0.1034	-0.1277	0.0549	0.0802
b_d_age	-0.2168	-0.8005	-0.0043	0.0082	1.0000	-0.2499	0.0651	-0.1889	0.0658
b_d_packyears	-0.0319	0.0138	0.0264	-0.1034	-0.2499	1.0000	0.0664	-0.0632	-0.0091
b_d_BMI	0.3030	-0.3892	-0.0355	-0.1277	0.0651	0.0664	1.0000	-0.1514	-0.2036
b_d_fev1pp	0.0337	0.1344	0.0338	0.0549	-0.1889	-0.0632	-0.1514	1.0000	-0.5310
b_d_fev1fvcratio	-0.0723	-0.1562	0.0492	0.0802	0.0658	-0.0091	-0.2036	-0.5310	1.0000
b_d_num_re1	0.1350	-0.0945	-0.1767	-0.2167	-0.0583	0.0456	0.1385	-0.1308	-0.0704
b_d_num_re2	0.3559	-0.0369	-0.1968	-0.2015	-0.0860	0.0430	0.1966	-0.1929	-0.0306
b_d_num_re3	0.6027	-0.0057	-0.2488	-0.2878	-0.1392	0.0677	0.3002	-0.2177	-0.0827
b_d_male	0.0517	-0.1275	-0.0745	-0.1147	-0.1348	0.1778	0.0285	-0.0336	0.0168
b_d_nowsmk	0.2483	-0.2920	-0.1181	-0.1623	0.1330	0.1538	0.2577	-0.2111	-0.0918
b_d_oxygen	-0.0020	-0.1379	-0.0431	0.0705	-0.0938	0.0624	-0.0716	0.2050	-0.0803
theta	0.7380	0.0500	-0.2093	-0.3047	-0.1952	0.0435	0.3289	-0.1884	-0.0836

Correlation Matrix of Parameter Estimates						
b_d_num_re1	b_d_num_re2	b_d_num_re3	b_d_male	b_d_nowsmk	b_d_oxygen	theta
0.1350	0.3559	0.6027	0.0517	0.2483	-0.0020	0.7380
-0.0945	-0.0369	-0.0057	-0.1275	-0.2920	-0.1379	0.0500
-0.1767	-0.1968	-0.2488	-0.0745	-0.1181	-0.0431	-0.2093
-0.2167	-0.2015	-0.2878	-0.1147	-0.1623	0.0705	-0.3047
-0.0583	-0.0860	-0.1392	-0.1348	0.1330	-0.0938	-0.1952
0.0456	0.0430	0.0677	0.1778	0.1538	0.0624	0.0435
0.1385	0.1966	0.3002	0.0285	0.2577	-0.0716	0.3289
-0.1308	-0.1929	-0.2177	-0.0336	-0.2111	0.2050	-0.1884
-0.0704	-0.0306	-0.0827	0.0168	-0.0918	-0.0803	-0.0836
1.0000	0.4503	0.4861	0.1926	0.2434	0.0733	0.4449
0.4503	1.0000	0.6097	0.1701	0.3583	0.0798	0.6059
0.4861	0.6097	1.0000	0.2410	0.4782	0.1313	0.8881
0.1926	0.1701	0.2410	1.0000	0.1636	0.0956	0.2268
0.2434	0.3583	0.4782	0.1636	1.0000	0.2472	0.4956
0.0733	0.0798	0.1313	0.0956	0.2472	1.0000	0.1474
0.4449	0.6059	0.8881	0.2268	0.4956	0.1474	1.0000

Death Gamma Frailty, Gap time, Weibull

The NLMIXED Procedure

Additional Estimates								
Label	Estimate	Standard Error	DF	t Value	Pr > |t|	Alpha	Lower	Upper
theta_inv	0.8595	1.7794	1520	0.48	0.6291	0.05	-2.6308	4.3498
gamma_d	1.4189	0.2484	1520	5.71	<.0001	0.05	0.9317	1.9062
d_trtSal	-0.2770	0.3007	1520	-0.92	0.3570	0.05	-0.8669	0.3128
d_trtSal_Flu	-0.7199	0.7358	1520	-0.98	0.3281	0.05	-2.1632	0.7235
d_age	1.2448	1.8381	1520	0.68	0.4984	0.05	-2.3606	4.8502
d_packyears	0.8139	0.9049	1520	0.90	0.3685	0.05	-0.9611	2.5889
d_BMI	-2.0103	2.5827	1520	-0.78	0.4365	0.05	-7.0764	3.0557
d_fev1pp	-4.4733	1.7607	1520	-2.54	0.0112	0.05	-7.9270	-1.0196
d_fev1fvcratio	0.2770	1.5330	1520	0.18	0.8566	0.05	-2.7300	3.2841
d_num_re1	1.9097	0.5248	1520	3.64	0.0003	0.05	0.8802	2.9392
d_num_re2	2.5907	0.9514	1520	2.72	0.0065	0.05	0.7246	4.4569
d_num_re3	3.7036	1.8105	1520	2.05	0.0410	0.05	0.1523	7.2550
d_male	0.6537	0.3497	1520	1.87	0.0617	0.05	-0.03218	1.3396
d_nowsmk	0.8154	0.4527	1520	1.80	0.0718	0.05	-0.07251	1.7034
d_oxygen	0.5383	0.3381	1520	1.59	0.1115	0.05	-0.1248	1.2015