H1 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H1 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	95387.3366	DFE	61
MSE	1564	Root MSE	39.54399
SBC	648.394207	AIC	644.107937
MAE	34.0238824	AICC	644.307937
MAPE	1.98367451	HQC	645.793748
Durbin-Watson	0.0452	Total R-Square	0.7390

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	1839	11.5418	159.34	<.0001
TIME	1	-3.6003	0.2740	-13.14	<.0001

Estimates of Autocorrelations

Lag	Covariance	Correlation	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
0	1514.1	1.000000	| |********************|
1	1422.9	0.939769	| |******************* |
2	1279.8	0.845274	| |***************** |

Preliminary MSE	158.3

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-1.244552	0.123152	-10.11
2	0.324317	0.123152	2.63

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9398
2	0.8453

Coefficients for First NLAG Observations

	1	2
1	0.3233356944	0
2	-0.888972755	0.9459484823

Algorithm converged.

H1 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	1584.78097	DFE	59
MSE	26.86069	Root MSE	5.18273
SBC	403.694218	AIC	395.121679
MAE	3.97300539	AICC	395.811334
MAPE	0.23328302	HQC	398.4933
Log Likelihood	-193.56084	Transformed Regression R-Square	0.2491
Durbin-Watson	2.1690	Total R-Square	0.9957
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	1825	33.7547	54.06	<.0001
TIME	1	-3.4227	0.7870	-4.35	<.0001
AR1	1	-1.7553	0.0763	-23.02	<.0001
AR2	1	0.7933	0.0765	10.36	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9788
2	0.9248

Coefficients for First NLAG Observations

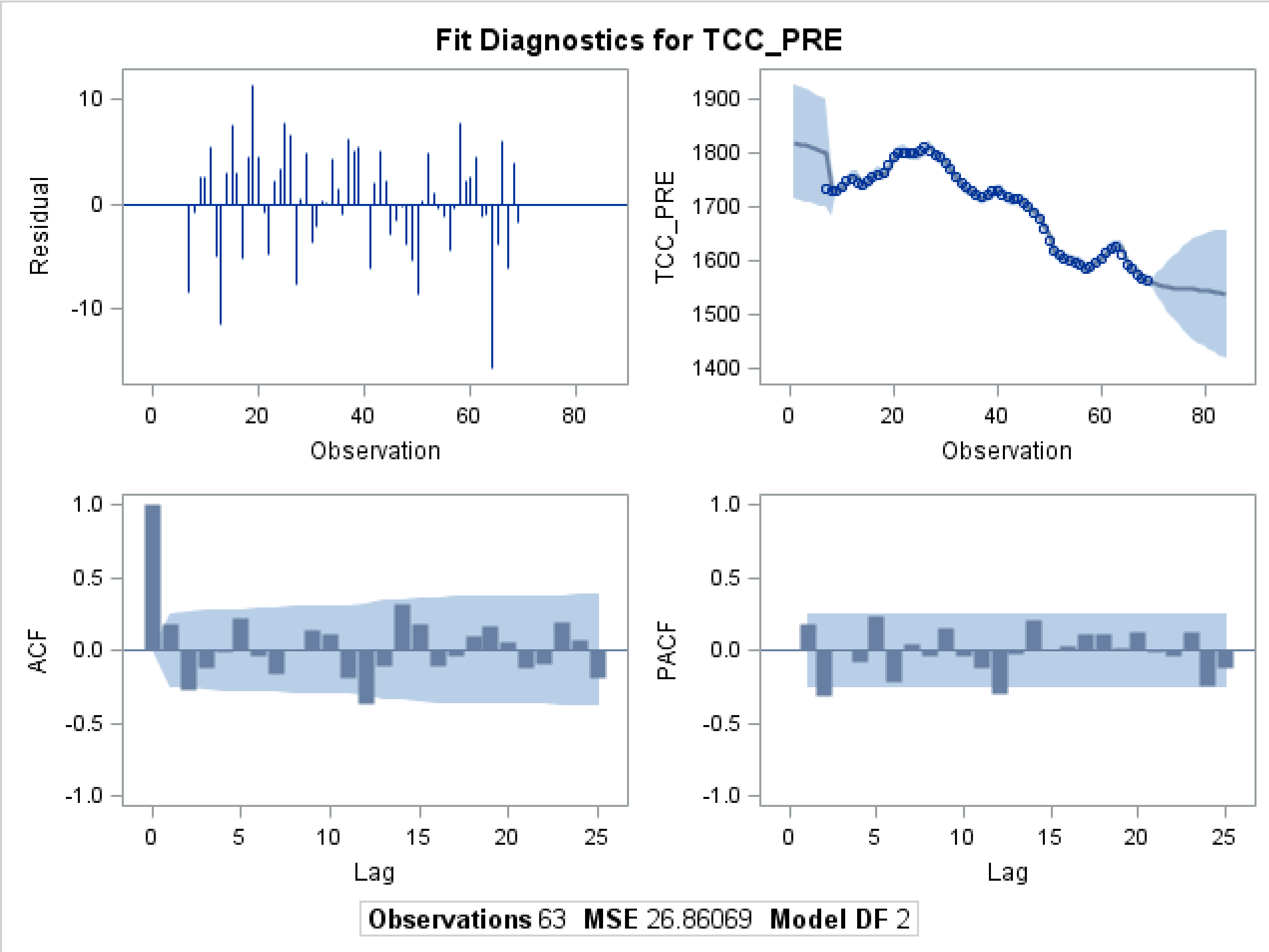
	1	2
1	0.1246962731	0
2	-0.595912085	0.6088188344

Autoregressive parameters assumed given

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	1825	33.4958	54.48	<.0001
TIME	1	-3.4227	0.7733	-4.43	<.0001

H1 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure



H2 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H2 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	3750.93874	DFE	61
MSE	61.49080	Root MSE	7.84161
SBC	444.530006	AIC	440.243737
MAE	6.31676535	AICC	440.443737
MAPE	3.01235044	HQC	441.929548
Durbin-Watson	0.0823	Total R-Square	0.1694

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	216.4837	2.2887	94.59	<.0001
TIME	1	-0.1916	0.0543	-3.53	0.0008

Estimates of Autocorrelations

Lag	Covariance	Correlation	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
0	59.5387	1.000000	| |******************** |
1	51.0077	0.856714	| |***************** |
2	41.7504	0.701231	| |************** |
3	32.7379	0.549860	| |*********** |

Preliminary MSE	15.5144

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.952996	0.130946	-7.28
2	0.051760	0.180995	0.29
3	0.074067	0.130946	0.57

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.8567
2	0.7012
3	0.5499

Coefficients for First NLAG Observations

	1	2	3
1	0.5104674125	0	0
2	-0.847871479	0.9896782423	0
3	0.1226827991	-0.959465222	0.997253274

Algorithm converged.

H2 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	103.775601	DFE	58
MSE	1.78923	Root MSE	1.33762
SBC	236.645133	AIC	225.929459
MAE	1.0042726	AICC	226.982091
MAPE	0.48234993	HQC	230.143986
Log Likelihood	-107.96473	Transformed Regression R-Square	0.0183
Durbin-Watson	1.9435	Total R-Square	0.9770
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	201.6124	13.0041	15.50	<.0001
TIME	1	0.2761	0.3305	0.84	0.4069
AR1	1	-1.9406	0.1322	-14.68	<.0001
AR2	1	1.1562	0.2535	4.56	<.0001
AR3	1	-0.1910	0.1420	-1.35	0.1838

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9832
2	0.9396
3	0.8776

Coefficients for First NLAG Observations

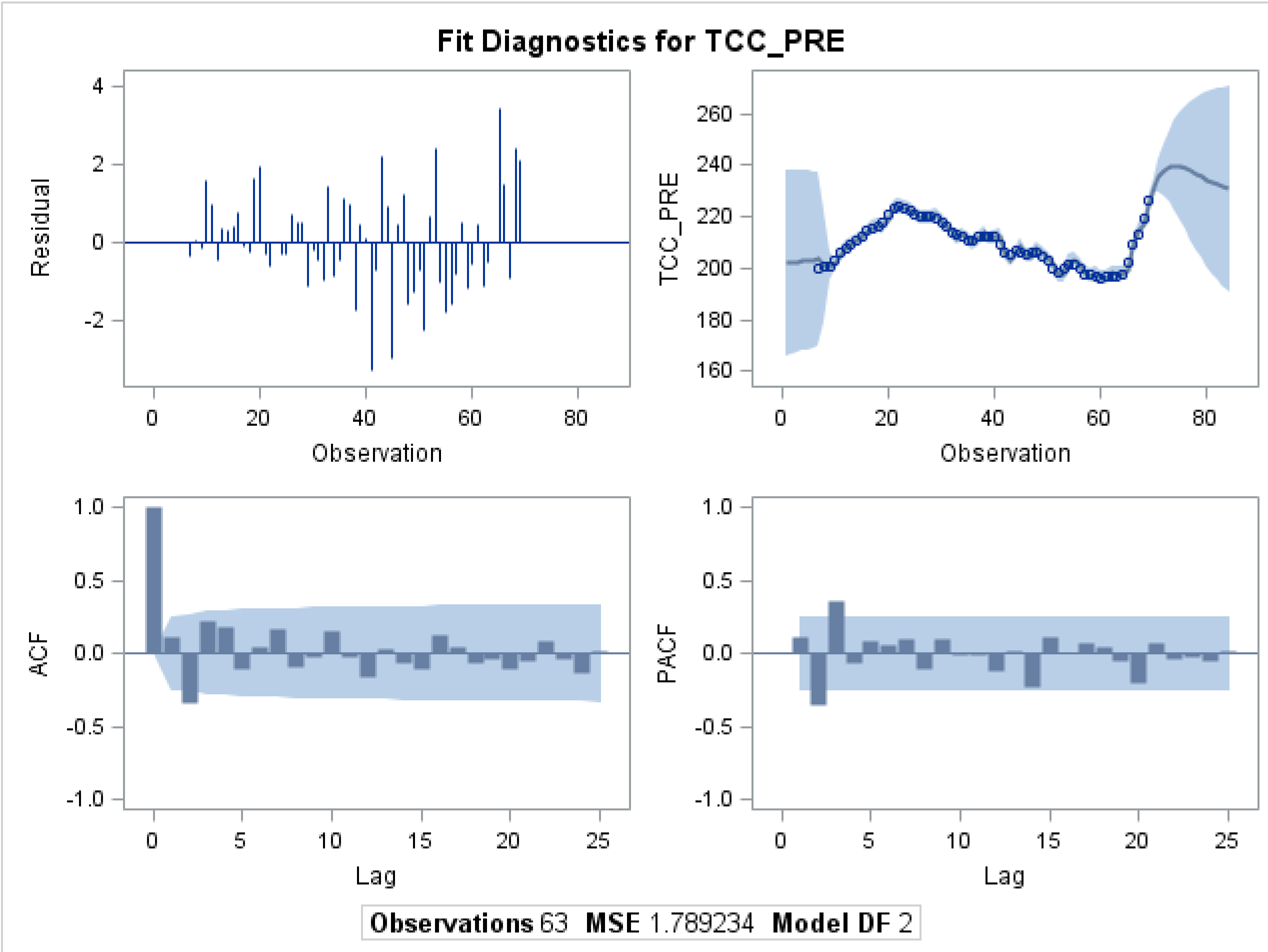
	1	2	3
1	0.1036682039	0	0
2	-0.558867979	0.568401719	0
3	0.8002681107	-1.751966508	0.9815852297

Autoregressive parameters assumed given

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	201.6124	11.8135	17.07	<.0001
TIME	1	0.2761	0.2663	1.04	0.3040

H2 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure



H3 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H3 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	557.338703	DFE	61
MSE	9.13670	Root MSE	3.02270
SBC	324.414945	AIC	320.128675
MAE	2.49451675	AICC	320.328675
MAPE	5.28123625	HQC	321.814486
Durbin-Watson	0.1054	Total R-Square	0.9751

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	15.2108	0.8822	17.24	<.0001
TIME	1	1.0246	0.0209	48.93	<.0001

Estimates of Autocorrelations

Lag	Covariance	Correlation	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
0	8.8466	1.000000	| |********************|
1	7.2050	0.814429	| |**************** |
2	5.6835	0.642447	| |************* |

Preliminary MSE	2.9673

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.864854	0.129939	-6.66
2	0.061915	0.129939	0.48

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.8144
2	0.6424

Coefficients for First NLAG Observations

	1	2
1	0.5791500858	0
2	-0.812866346	0.998081419

Algorithm converged.

H3 FORECAST MODEL
NY 2010-2016 HOSP Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	21.6668629	DFE	59
MSE	0.36723	Root MSE	0.60600
SBC	134.597976	AIC	126.025437
MAE	0.45017767	AICC	126.715092
MAPE	0.93327066	HQC	129.397059
Log Likelihood	-59.012719	Transformed Regression R-Square	0.5439
Durbin-Watson	2.5211	Total R-Square	0.9990
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	15.2286	6.2013	2.46	0.0170
TIME	1	1.1115	0.1905	5.84	<.0001
AR1	1	-1.8494	0.0799	-23.14	<.0001
AR2	1	0.8762	0.0812	10.79	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9857
2	0.9468

Coefficients for First NLAG Observations

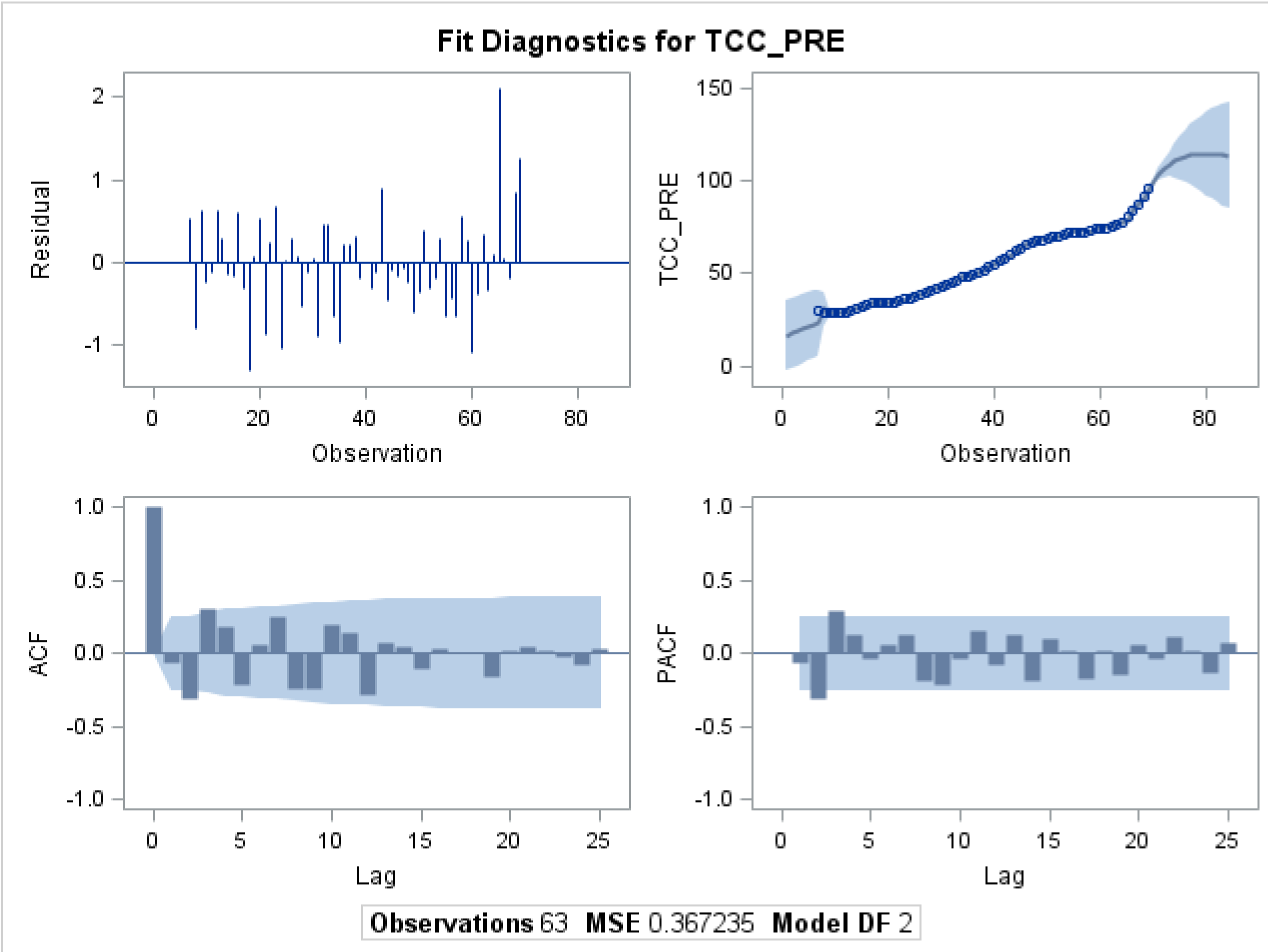
	1	2
1	0.0811671793	0
2	-0.475076476	0.4819603399

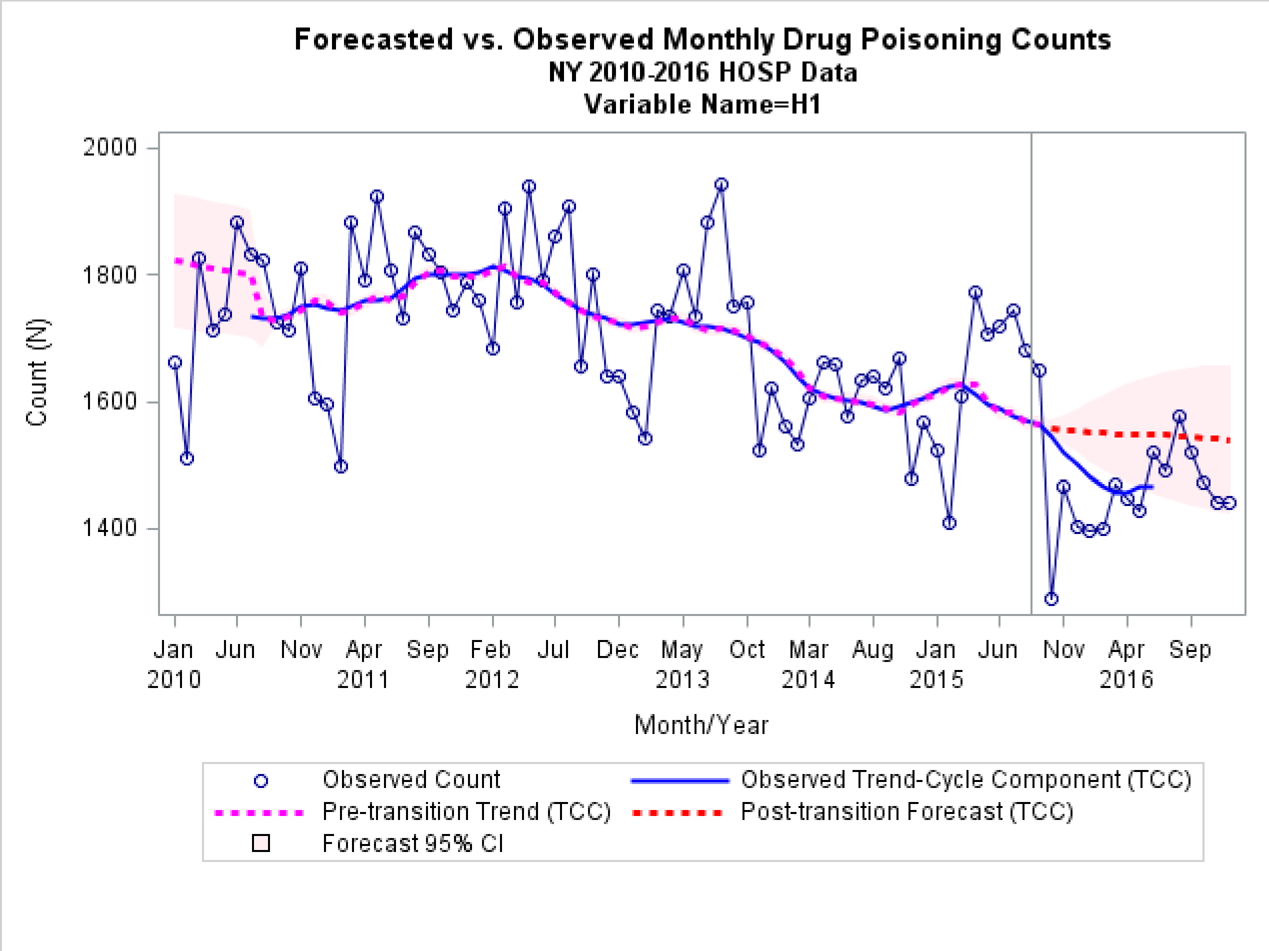
Autoregressive parameters assumed given

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	15.2286	5.7124	2.67	0.0099
TIME	1	1.1115	0.1325	8.39	<.0001

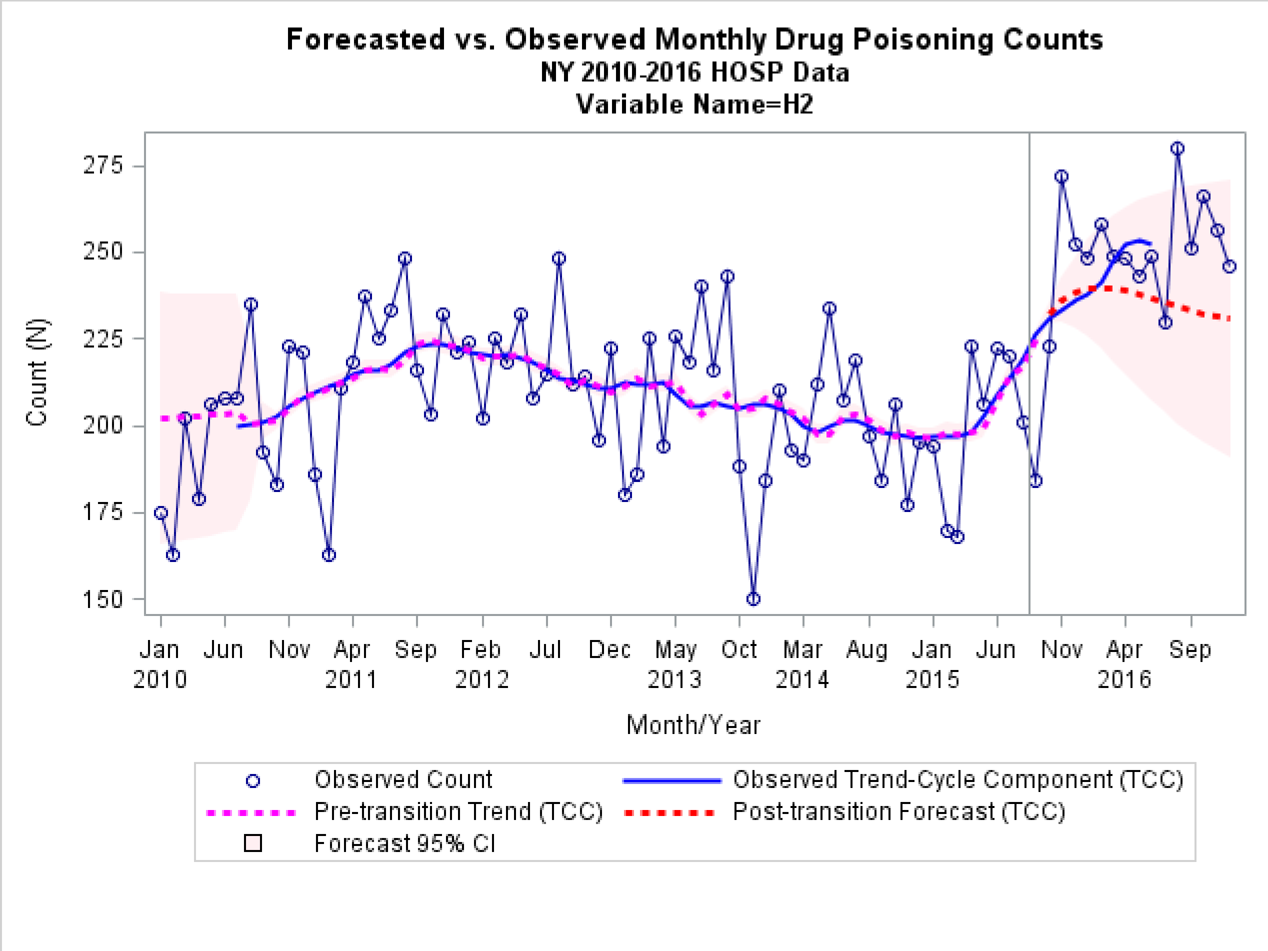
H3 FORECAST MODEL
NY 2010-2016 HOSP Data

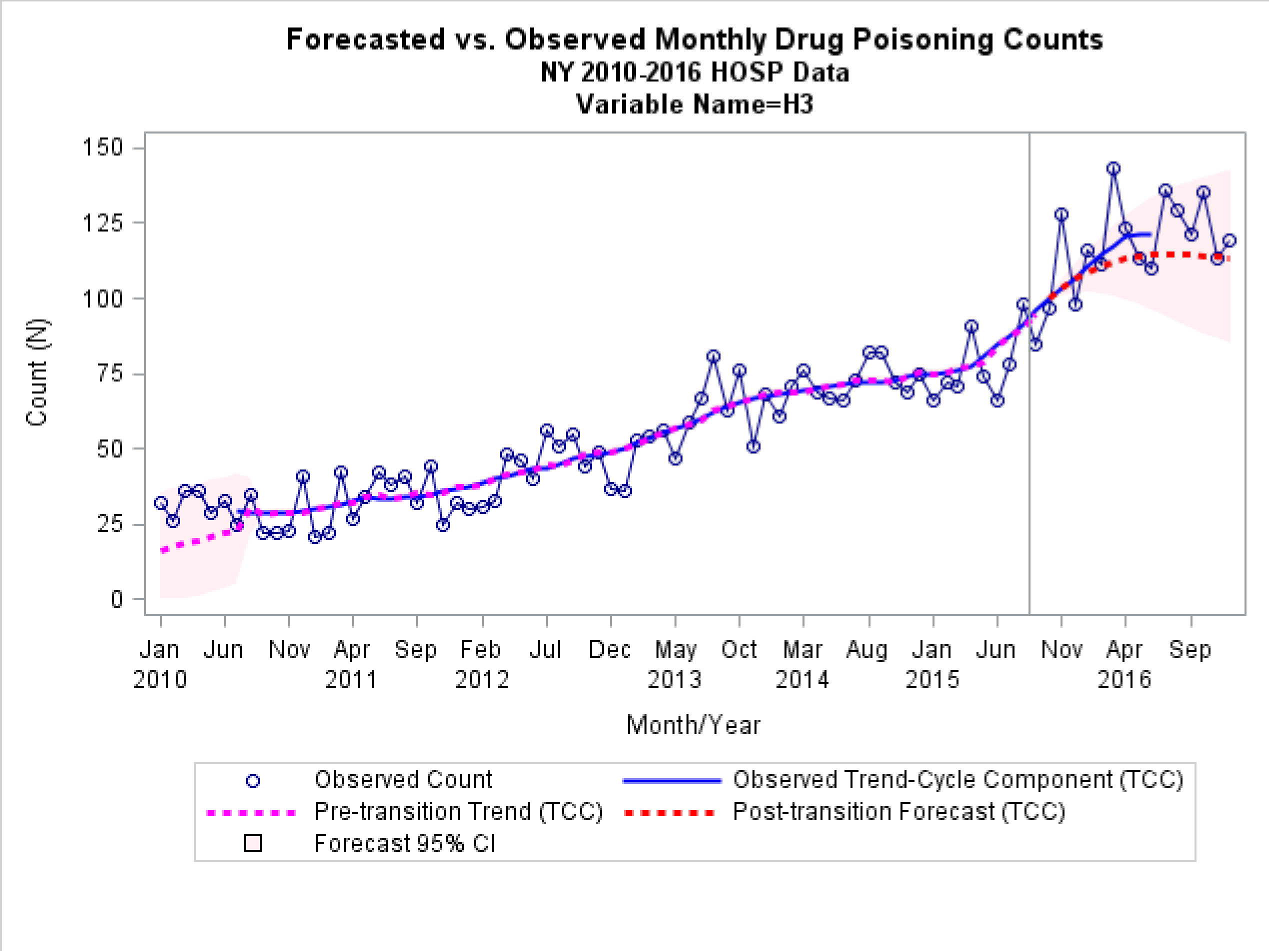
The AUTOREG Procedure





Forecasted vs. Observed Monthly Drug Poisoning Counts
NY 2010-2016 HOSP Data
Variable Name=H1
Count (N)
2000
1800
1600
1400
Jan 2010
Jun
Nov
Apr 2011
Sep
Feb 2012
Jul
Dec
May 2013
Oct
Mar 2014
Aug
Jan 2015
Jun
Nov
Apr 2016
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
Pre-transition Trend (TCC)
Post-transition Forecast (TCC)
Forecast 95% CI


Forecasted vs. Observed Monthly Drug Poisoning Counts
NY 2010-2016 HOSP Data
Variable Name=H2
Count (N)
275
250
225
200
175
150
Jan 2010
Jun
Nov
Apr 2011
Sep
Feb 2012
Jul
Dec
May 2013
Oct
Mar 2014
Aug
Jan 2015
Jun
Nov
Apr 2016
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
Pre-transition Trend (TCC)
Post-transition Forecast (TCC)
Forecast 95% CI


Forecasted vs. Observed Monthly Drug Poisoning Counts
NY 2010-2016 HOSP Data
Variable Name=H3
Count (N)
150
125
100
75
50
25
0
Jan 2010
Jun
Nov
Apr 2011
Sep
Feb 2012
Jul
Dec
May 2013
Oct
Mar 2014
Aug
Jan 2015
Jun
Nov
Apr 2016
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
Pre-transition Trend (TCC)
Post-transition Forecast (TCC)
Forecast 95% CI