H1 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H1 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	3943.29879	DFE	61
MSE	64.64424	Root MSE	8.04016
SBC	447.68073	AIC	443.394461
MAE	5.73461281	AICC	443.594461
MAPE	1.1459101	HQC	445.080271
Durbin-Watson	0.0721	Total R-Square	0.8351

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	546.3325	2.3467	232.81	<.0001
TIME	1	-0.9793	0.0557	-17.58	<.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	62.5920	1.000000	| |********************|
1	55.8972	0.893040	| |****************** |

Preliminary MSE	12.6736

Estimates of Autoregressive Parameters			
Lag	Coefficient	Standard Error	t Value
1	-0.893040	0.058092	-15.37

Expected Autocorrelations	
Lag	Autocorr
0	1.0000
1	0.8930

Coefficients for First NLAG Observations	
	1
1	0.449976606

Algorithm converged.

H1 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	271.026721	DFE	60
MSE	4.51711	Root MSE	2.12535
SBC	286.217635	AIC	279.788231
MAE	1.5556718	AICC	280.195011
MAPE	0.3087104	HQC	282.316947
Log Likelihood	-136.89412	Transformed Regression R-Square	0.1208
Durbin-Watson	0.7214	Total R-Square	0.9887
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	535.8203	11.2886	47.47	<.0001
TIME	1	-0.5681	0.2468	-2.30	0.0248
AR1	1	-0.9767	0.0282	-34.61	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9767

Coefficients for First NLAG Observations

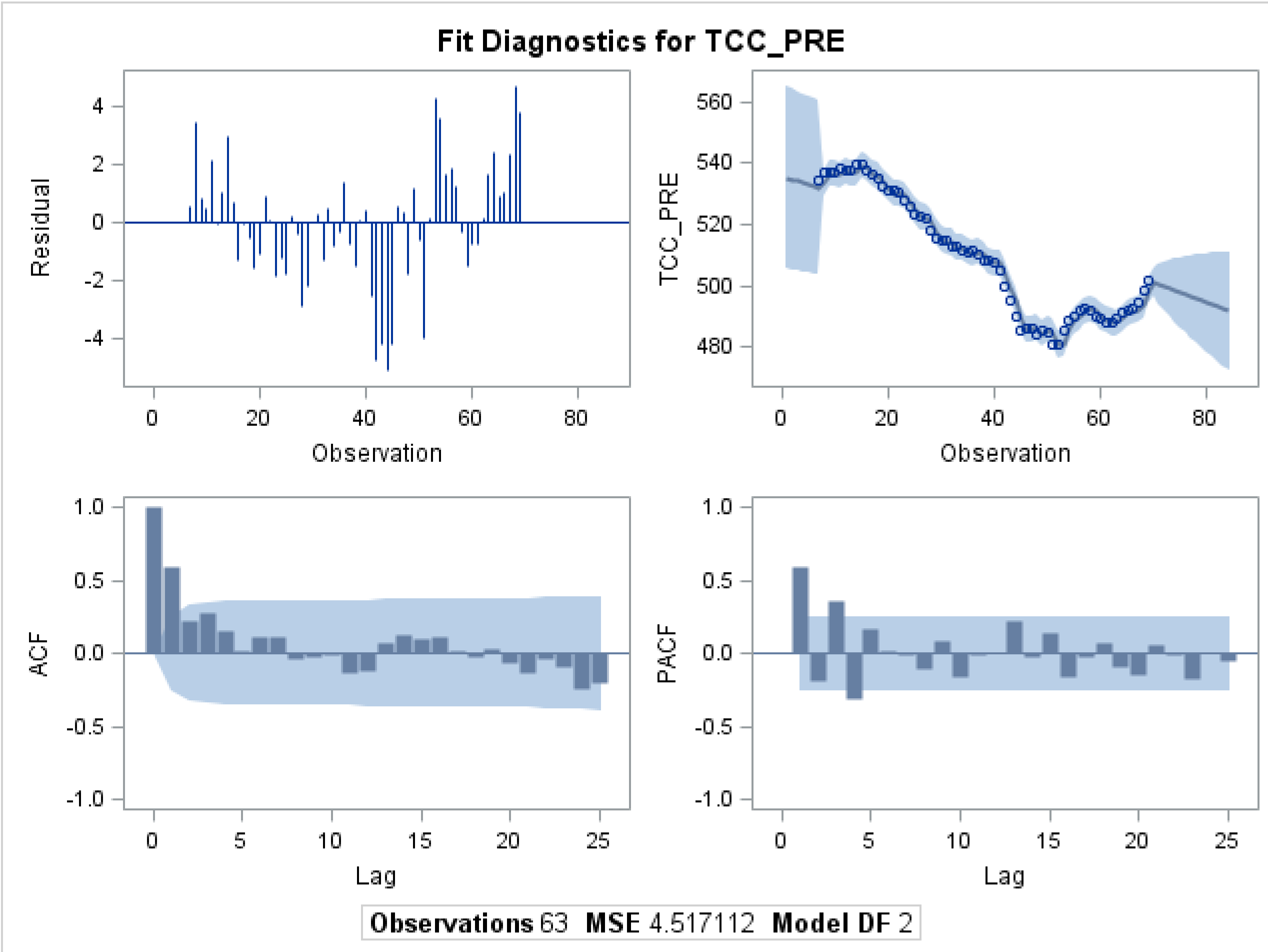
	1
1	0.2144061591

Autoregressive parameters assumed given

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	535.8203	10.6443	50.34	<.0001
TIME	1	-0.5681	0.1978	-2.87	0.0056

H1 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure



H2 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H2 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	673.86066	DFE	61
MSE	11.04690	Root MSE	3.32369
SBC	336.375508	AIC	332.089239
MAE	2.4650929	AICC	332.289239
MAPE	2.65746791	HQC	333.775049
Durbin-Watson	0.1264	Total R-Square	0.3669

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	97.7601	0.9701	100.77	<.0001
TIME	1	-0.1369	0.0230	-5.95	<.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	10.6962	1.000000	| |********************|
1	8.5451	0.798889	| |**************** |

Preliminary MSE	3.8696

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.798889	0.077651	-10.29

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.7989

Coefficients for First NLAG Observations

	1
1	0.6014782938

Algorithm converged.

H2 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	81.4325988	DFE	60
MSE	1.35721	Root MSE	1.16499
SBC	210.392664	AIC	203.96326
MAE	0.89017306	AICC	204.370039
MAPE	0.95642392	HQC	206.491976
Log Likelihood	-98.98163	Transformed Regression R-Square	0.0089
Durbin-Watson	0.5222	Total R-Square	0.9235
		Observations	63

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	92.9659	6.3921	14.54	<.0001
TIME	1	0.0779	0.1591	0.49	0.6260
AR1	1	-0.9750	0.0367	-26.55	<.0001

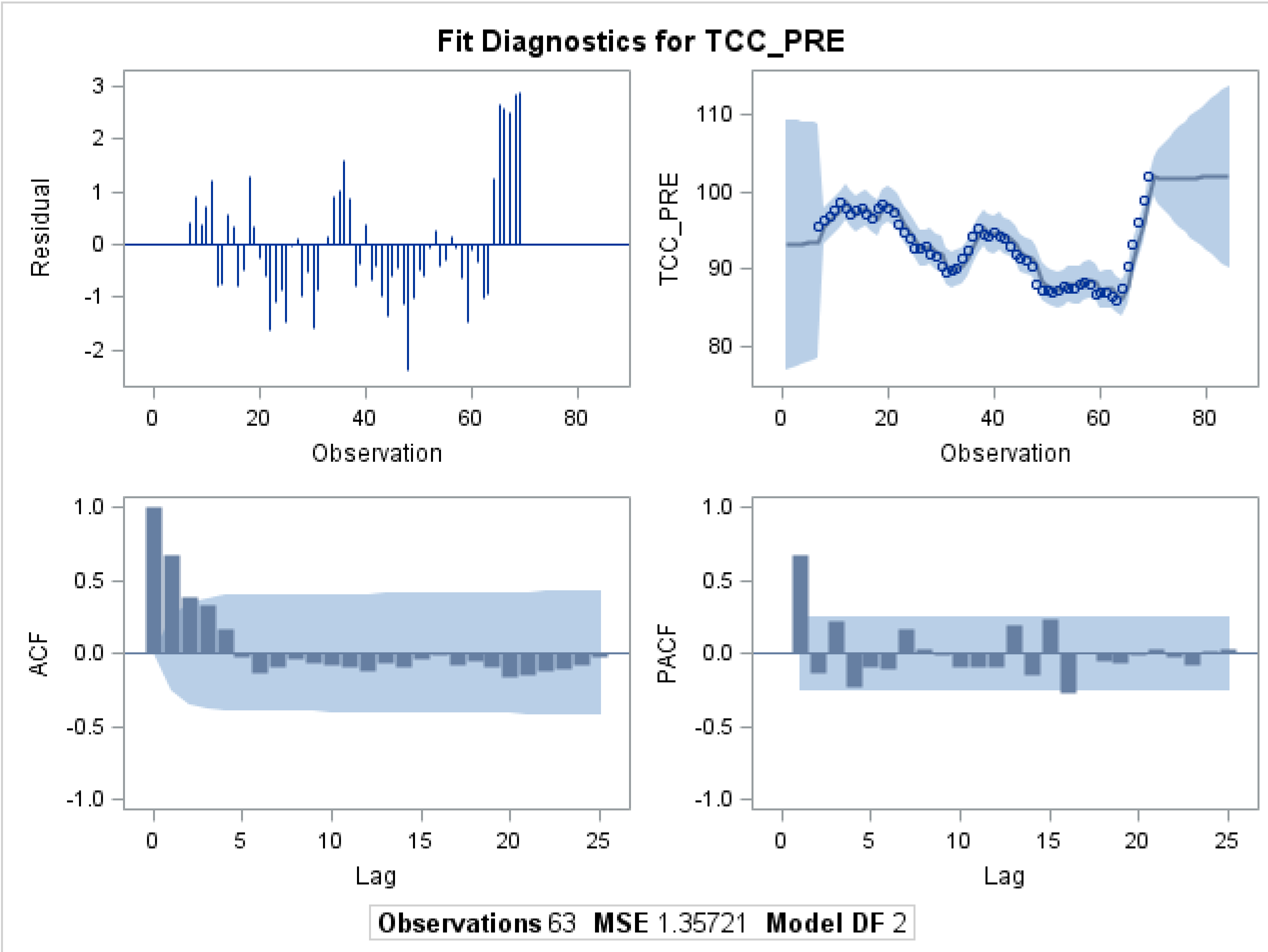
Expected Autocorrelations	
Lag	Autocorr
0	1.0000
1	0.9750

Coefficients for First NLAG Observations	
	1
1	0.2221699891

Autoregressive parameters assumed given					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	92.9659	5.6302	16.51	<.0001
TIME	1	0.0779	0.1062	0.73	0.4659

H2 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure



H3 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H3 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	111.28621	DFE	61
MSE	1.82436	Root MSE	1.35069
SBC	222.917674	AIC	218.631404
MAE	1.15095576	AICC	218.831404
MAPE	5.63055478	HQC	220.317215
Durbin-Watson	0.0885	Total R-Square	0.9309

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	12.1523	0.3942	30.83	<.0001
TIME	1	0.2682	0.009358	28.66	<.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	1.7664	1.000000	| |********************|
1	1.6235	0.919084	| |****************** |

Preliminary MSE	0.2743

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.919084	0.050873	-18.07

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9191

Coefficients for First NLAG Observations

	1
1	0.3940625754

Algorithm converged.

H3 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	9.75957561	DFE	60
MSE	0.16266	Root MSE	0.40331
SBC	76.3691089	AIC	69.9397048
MAE	0.32118051	AICC	70.3464844
MAPE	1.52815061	HQC	72.4684209
Log Likelihood	-31.969852	Transformed Regression R-Square	0.5638
Durbin-Watson	1.3442	Total R-Square	0.9939
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	10.6091	1.6708	6.35	<.0001
TIME	1	0.2859	0.0368	7.76	<.0001
AR1	1	-0.9637	0.0345	-27.95	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9637

Coefficients for First NLAG Observations

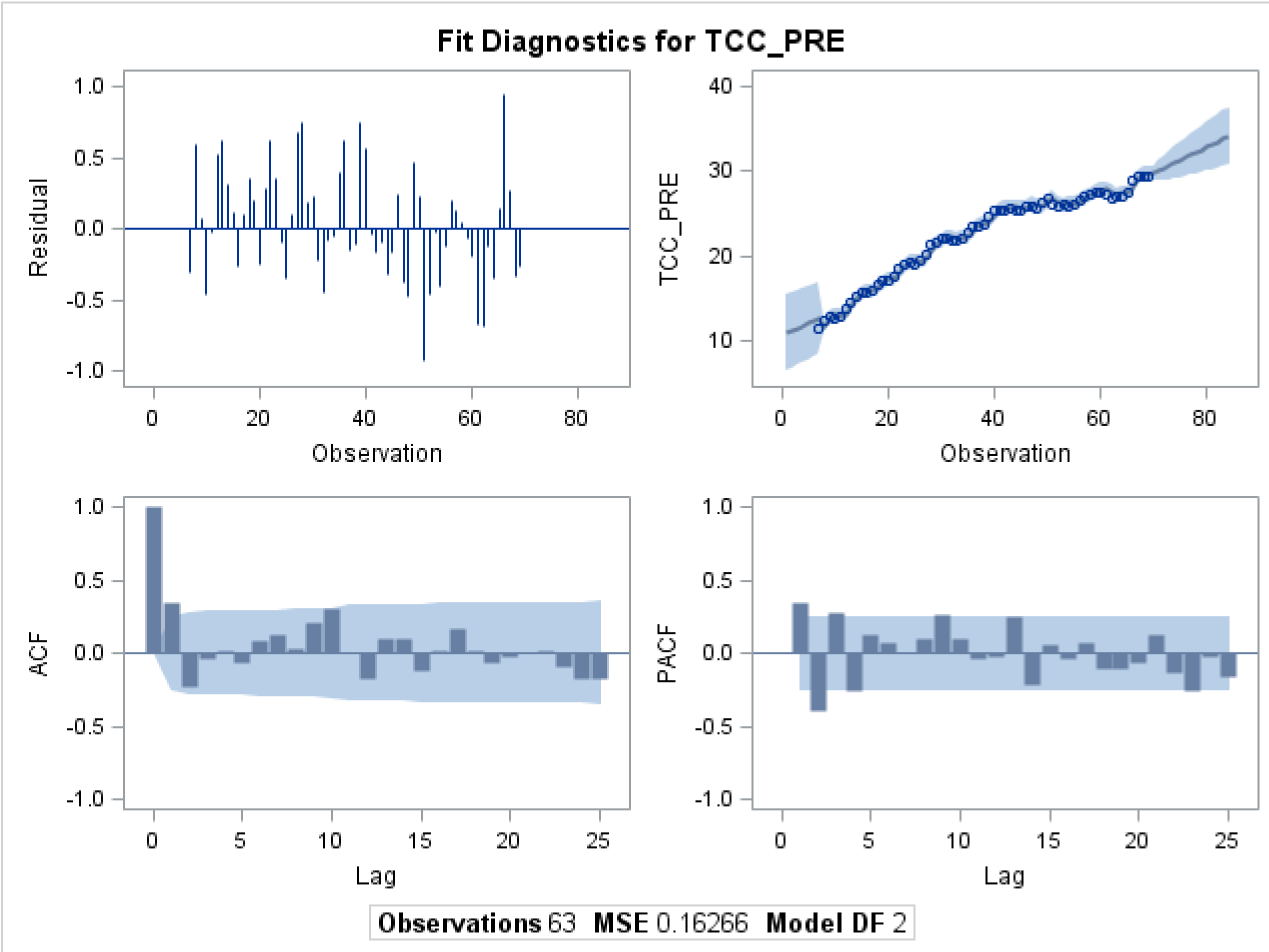
	1
1	0.2669676467

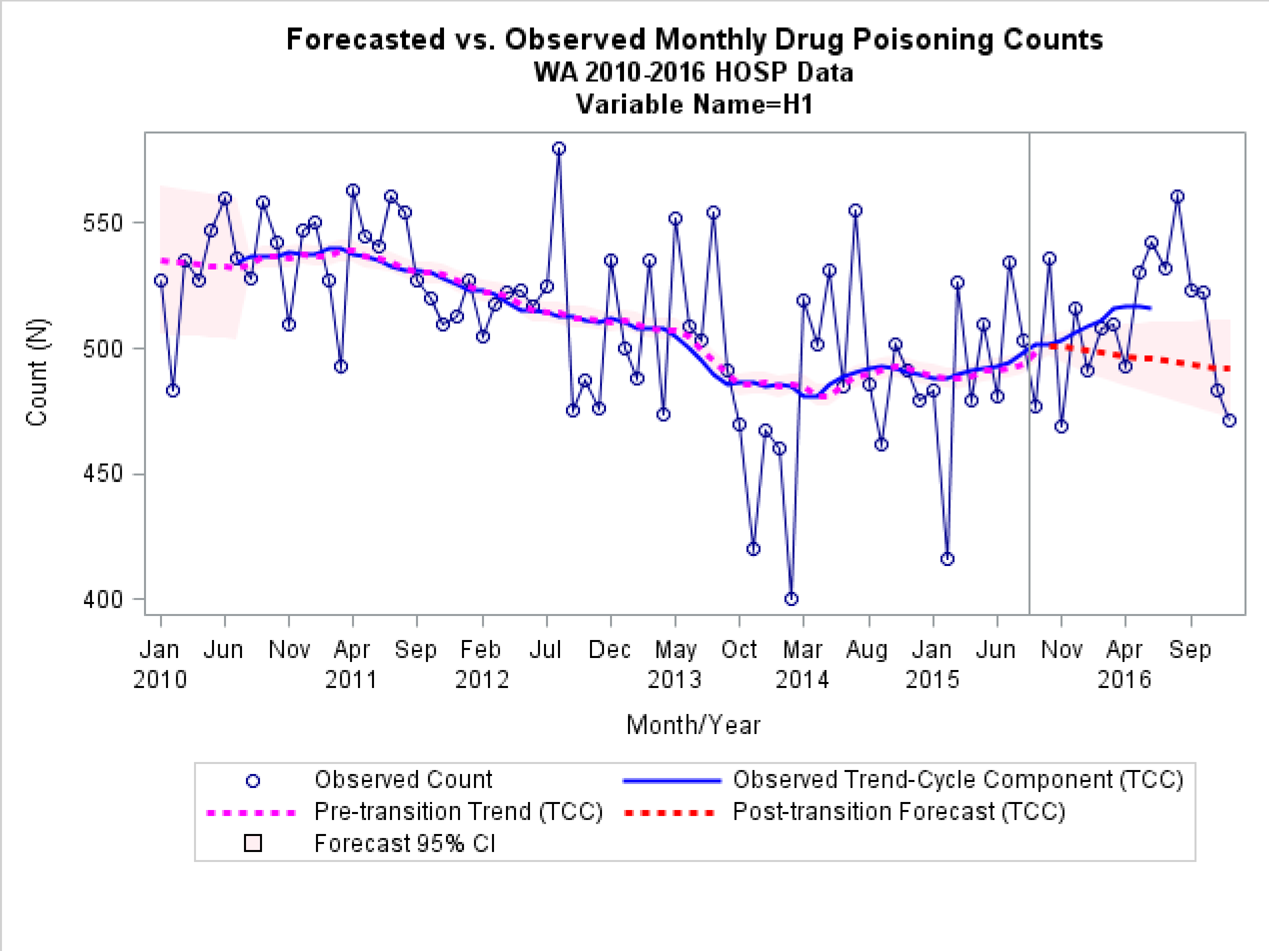
Autoregressive parameters assumed given

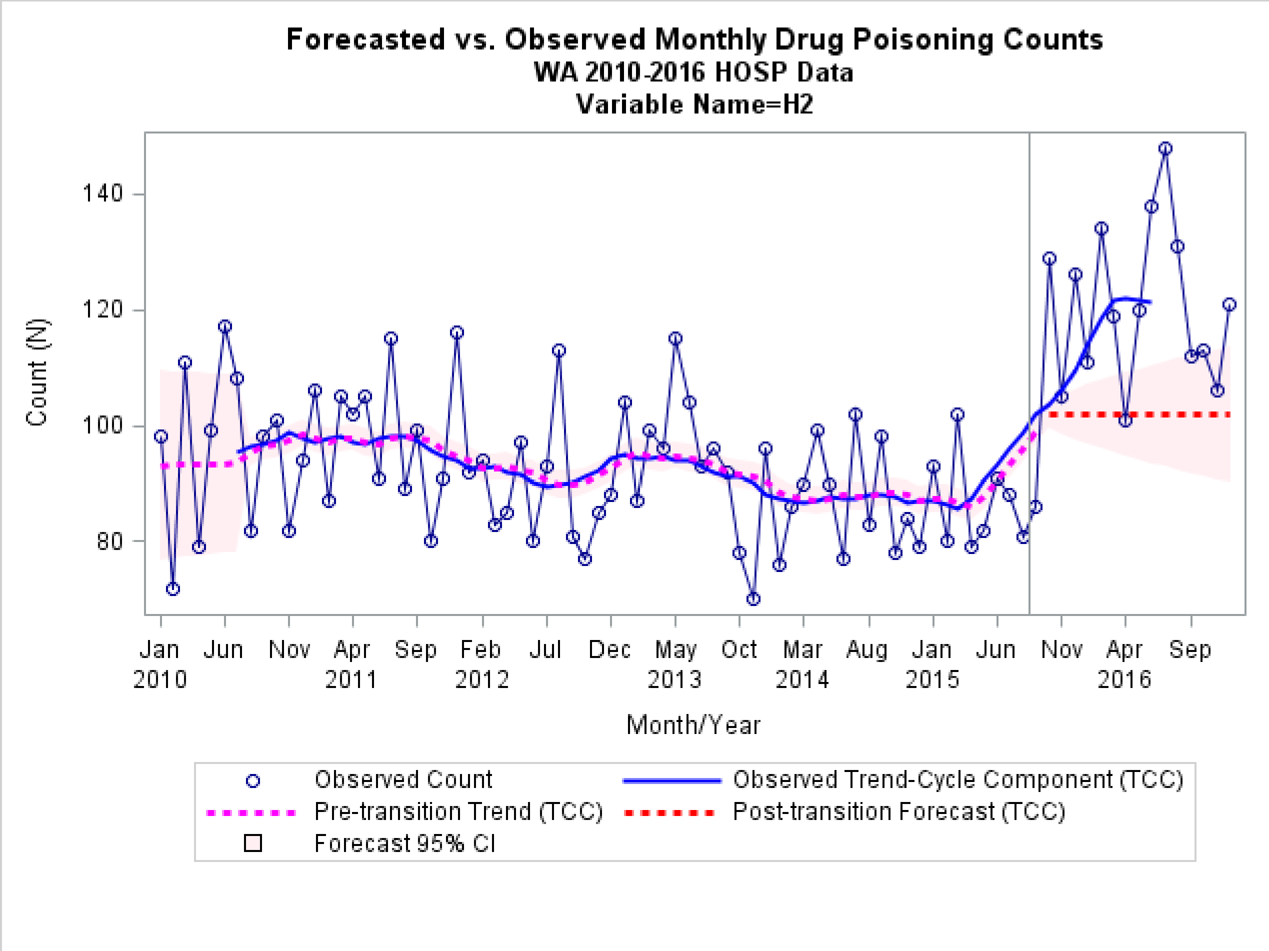
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	10.6091	1.6077	6.60	<.0001
TIME	1	0.2859	0.0325	8.81	<.0001

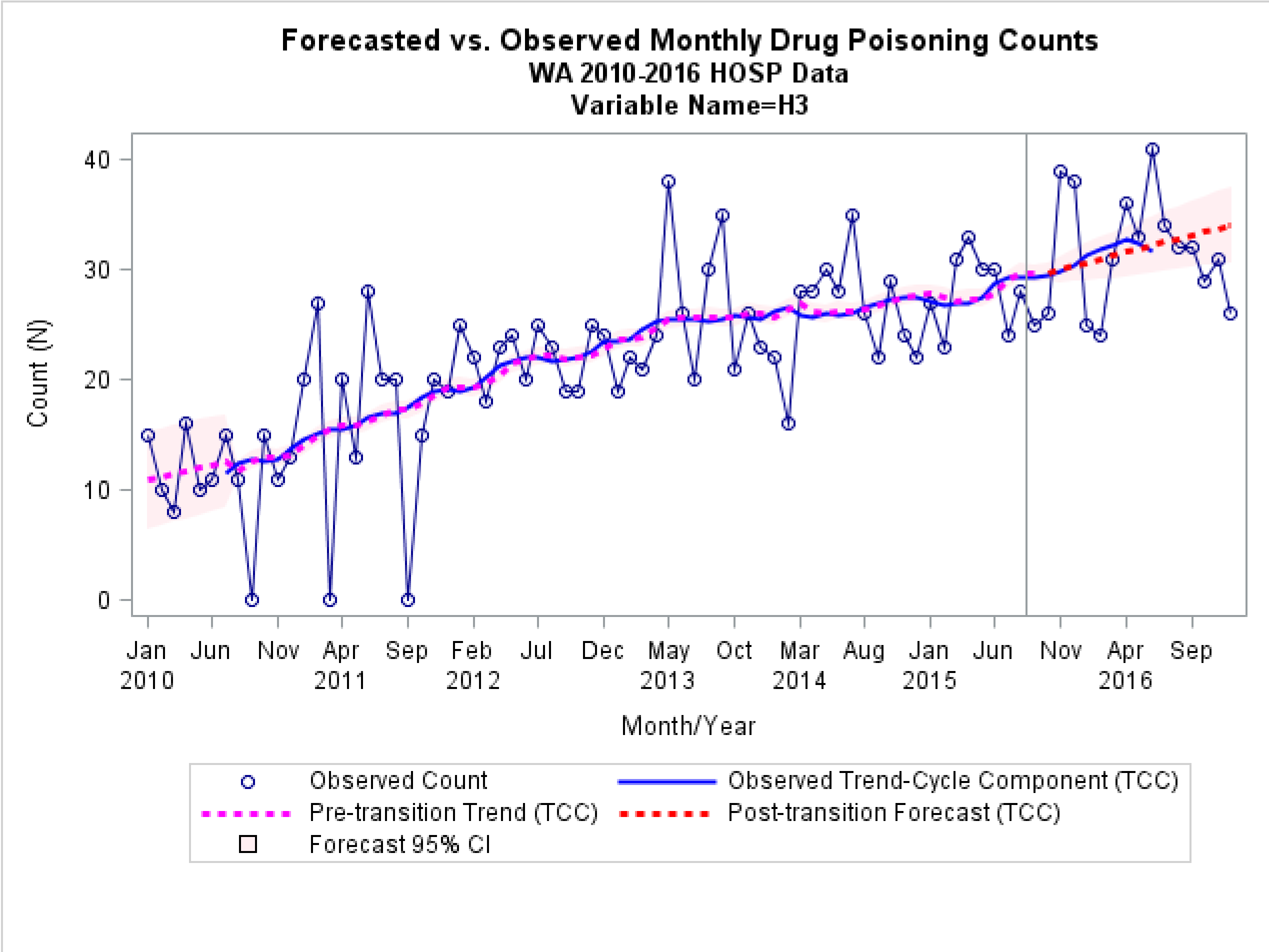
H3 FORECAST MODEL
WA 2010-2016 HOSP Data

The AUTOREG Procedure




Forecasted vs. Observed Monthly Drug Poisoning Counts
WA 2010-2016 HOSP Data
Variable Name=H1
Count (N)
550
500
450
400
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
WA 2010-2016 HOSP Data
Variable Name=H2
Count (N)
140
120
100
80
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
WA 2010-2016 HOSP Data
Variable Name=H3
Count (N)
0
10
20
30
40
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