

PENNSYLVANIA COMPENSATION RATING BUREAU

Paid and Incurred Loss Development and Trend

Page 1 of the attachment shows the calculation of expected losses. Standard Earned Premiums are developed to ultimate, adjusted to current rate level, adjusted to remove expense constants, adjusted for the Pennsylvania Construction Classification Premium Adjustment Program, adjusted to remove assessments included in manual loss costs, and then multiplied by the factor representing the cumulative loss cost change to 04/01/20 to yield expected losses at current levels.

Pages 2 through 16 present indemnity losses.

Page 2 shows reported incurred and paid loss development factors and ratios of incurred to paid losses. Data for the latest two sets of factors (2017-2018 and 2018-2019) are based on the current Table I. Ratios for earlier periods are also shown for comparison purposes.

Subsequent pages will reflect the impact of changes legislated by Act 44 of 1993, Act 57 of 1996, HB 1846 of 2014 and HB 1840 of 2017 as well as the Pennsylvania Supreme Court decision in Protz v. WCAB (*Derry Area School District*) (Protz).

Page 3 shows post-House Bill 1840 and House Bill 1846 adjustment factors for incurred and paid loss development factors and ratios of incurred to paid losses.

Page 4 shows incurred and paid loss development factors and ratios of incurred to paid losses, adjusted to a post-House Bill 1840 and House Bill 1846 benefit level.

Page 5 shows the selected loss development factors and arranges the factors according to the loss development approach shown. There are two methods shown: case incurred and paid to twentieth. With the exception of the tail factor, and the 19-20 incurred to paid loss development factor, an average of the latest two factors has been selected. A curve fitting approach was used to select the 19-20 incurred to paid loss development factor, shown on page 9. Tail factor calculations are presented in Exhibit 7.

Page 6 shows law adjustment factors applicable to reported incurred and paid losses as of 12/31/2019. Loss adjustment expense is not included in this analysis.

The top portion of Page 7 shows the reported loss base (paid or incurred losses depending on method) to which the loss development and law adjustment factors apply.

The middle portion of Page 7 shows projected ultimate losses calculated by multiplying the reported loss bases by the loss development and law adjustment factors.

The lower portion of Page 7 shows adjusted ultimate losses calculated by multiplying the projected ultimate losses by the benefit on-level factors. These adjusted ultimate losses are used to calculate the ultimate loss ratios on Page 8.

The top portion of Page 8 presents ultimate loss ratios (ratios of projected loss to expected loss) by policy year for each methodology. Expected losses include provisions for both indemnity and medical combined.

The middle portion of Page 8 presents information on claim frequencies, which are discussed further in Exhibit 8. The first column shows frequencies by policy year. The second column shows normalized values for claim frequency with Policy Year 2008 set equal to unity. Staff has selected an annual frequency trend factor of -6.3%.

The lower portion of Page 8 shows severity ratios which are defined as loss ratios adjusted to a common underlying claim frequency level. The severity ratios are calculated by dividing the loss ratios in the top section of Page 8 by the normalized claim frequencies in the middle portion of Page 8 for each policy year and loss development approach.

Page 9 shows the selected curve for the 19-20 indemnity incurred to paid loss development factor and the development periods used to select the curve. The average of the fitted factors from 19-20 to 50th-Ultimate was selected.

Page 10 shows fitted values for severity ratios fitted to a straight line for each loss development approach and using from 4 to 10 points. The top portion of Page 11 shows those same straight lines trended to the midpoint of the prospective rating period (4/1/22). The second section of Page 11 shows severity trend factors by policy year calculated by dividing the trended points on Page 11 by the fitted values on Page 10.

Pages 12 and 13 present the analogous exponential severity trend factor calculation. Page 14 shows the loss ratio trend factors by policy year, which are the product of the severity (Page 13) and frequency (Page 8) trend factors that were previously calculated.

Pages 15 and 16 show averages of the three latest policy years trended to the midpoint of the prospective rating period (4/1/22) on a linear and an exponential basis, respectively.

Pages 17 through 31 show experience for medical losses laid out the same way as Pages 2 through 16. Page 32 shows a summary of annualized severity trend factors and Page 33 shows annualized loss ratio trend factors.

PREMIUMS	PDF 14-15	PDF 15-16	PDF 16-17	PDF 17-18	PDF 18-19	4 Year Average	Selected PDF
19-20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
18-19	1.0001	0.9999	1.0000	1.0000	1.0000	1.0000	1.0000
17-18	1.0000	1.0000	1.0000	1.0001	1.0000	1.0000	1.0000
16-17	1.0000	0.9999	1.0000	1.0001	1.0001	1.0000	1.0000
15-16	1.0000	1.0000	1.0000	0.9999	1.0000	1.0000	1.0000
14-15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
13-14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12-13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
11-12	1.0001	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10-11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9-10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8-9	1.0000	1.0002	0.9988	1.0000	1.0000	0.9997	0.9997
7-8	1.0000	0.9999	0.9999	1.0000	0.9996	0.9999	0.9999
6-7	1.0000	1.0011	1.0003	1.0004	1.0001	1.0005	1.0005
5-6	0.9997	1.0002	1.0002	1.0001	1.0001	1.0002	1.0002
4-5	1.0001	0.9999	0.9995	1.0000	1.0003	0.9999	0.9999
3-4	1.0002	0.9996	1.0005	0.9981	0.9990	0.9993	0.9993
2-3	0.9994	1.0012	1.0005	0.9991	0.9990	1.0000	1.0000
1-2	1.0099	1.0084	1.0090	1.0088	1.0126	1.0097	1.0097

PREMIUMS	Policy Year	Reported SEP	Cum PDF	Ultimate SEP	Premium On-Level To 12/1/92	ECRF	PCCPAP Factor
19-20	2000	1,331,794,138	1.0000	1,331,794,138	1.0000	1.0000	0.9966
18-19	2001	1,426,050,363	1.0000	1,426,050,363	1.0000	1.0000	0.9974
17-18	2002	1,498,049,368	1.0000	1,498,049,368	1.0000	1.0000	0.9988
16-17	2003	1,546,429,878	1.0000	1,546,429,878	1.0000	1.0000	0.9992
15-16	2004	1,638,116,780	1.0000	1,638,116,780	1.0000	1.0000	1.0000
14-15	2005	1,796,786,072	1.0000	1,796,786,072	1.0000	1.0000	1.0016
13-14	2006	1,773,721,993	1.0000	1,773,721,993	1.0000	1.0000	1.0019
12-13	2007	1,836,132,240	1.0000	1,836,132,240	1.0000	1.0000	1.0013
11-12	2008	1,694,028,578	1.0000	1,694,028,578	1.0000	1.0000	0.9989
10-11	2009	1,497,808,730	1.0000	1,497,808,730	1.0000	1.0000	0.9987
9-10	2010	1,570,007,364	1.0000	1,570,007,364	1.0000	1.0000	1.0055
8-9	2011	1,616,603,935	0.9997	1,616,118,954	1.0000	1.0000	1.0057
7-8	2012	1,509,129,399	0.9996	1,508,525,747	1.0000	1.0000	1.0067
6-7	2013	1,476,003,174	1.0001	1,476,150,774	1.0000	1.0000	1.0067
5-6	2014	1,475,220,185	1.0003	1,475,662,751	1.0000	1.0000	1.0066
4-5	2015	1,510,546,720	1.0002	1,510,848,829	1.0000	1.0000	1.0076
3-4	2016	1,519,599,286	0.9995	1,518,839,486	1.0000	1.0000	1.0078
2-3	2017	1,594,074,056	0.9995	1,593,277,019	1.0000	1.0000	1.0068
1-2	2018	1,714,406,962	1.0092	1,730,179,506	1.0000	1.0000	1.0062

PREMIUMS	Policy Year	On-Level SEP	Expected Loss Ratio	Expected Losses	Loss Cost On-Level To 4/1/20	Expected Losses	Current Level
	2000	1,327,266,038	0.9925	1,317,311,543	0.4438	584,622,863	
	2001	1,422,342,632	0.9923	1,411,390,594	0.4431	625,387,172	
	2002	1,496,251,709	0.9929	1,485,628,322	0.4387	651,745,145	
	2003	1,545,192,734	0.9910	1,531,285,999	0.4434	678,972,212	
	2004	1,638,116,780	0.9906	1,622,718,482	0.4368	708,803,433	
	2005	1,799,660,930	0.9912	1,783,823,914	0.4412	787,023,111	
	2006	1,777,092,065	0.9897	1,758,788,017	0.4729	831,730,853	
	2007	1,838,519,212	0.9873	1,815,170,018	0.4773	866,380,650	
	2008	1,692,165,147	0.9862	1,668,813,268	0.5081	847,924,021	
	2009	1,495,861,579	0.9859	1,474,769,931	0.5382	793,721,177	
	2010	1,578,642,405	0.9859	1,556,383,547	0.5407	841,536,584	
	2011	1,625,330,832	0.9862	1,602,901,267	0.5364	859,796,240	
	2012	1,518,632,870	0.9858	1,497,068,283	0.5567	833,417,913	
	2013	1,486,040,984	0.9853	1,464,196,182	0.5832	853,919,213	
	2014	1,485,402,125	0.9857	1,464,160,875	0.6124	896,652,120	
	2015	1,522,331,280	0.9853	1,499,953,010	0.6495	974,219,480	
	2016	1,530,686,434	0.9853	1,508,185,343	0.6666	1,005,356,350	
	2017	1,604,111,303	0.9863	1,582,134,978	0.6981	1,104,488,428	
	2018	1,740,906,619	0.9864	1,717,230,289	0.6749	1,158,958,722	

INDEMNITY	Selected Paid LDF	Selected Pd-Incur LDF	Selected Incurred LDF
Beyond			1.0052
19-20	1.0015	1.0080	1.0001
18-19	1.0017		1.0007
17-18	1.0020		1.0000
16-17	1.0036		1.0004
15-16	1.0037		0.9994
14-15	1.0057		0.9995
13-14	1.0051		0.9997
12-13	1.0055		1.0013
11-12	1.0065		1.0011
10-11	1.0059		1.0004
9-10	1.0066		1.0006
8-9	1.0075		1.0016
7-8	1.0101		1.0023
6-7	1.0151		1.0018
5-6	1.0192		0.9999
4-5	1.0354		1.0006
3-4	1.0758		1.0187
2-3	1.2143		1.0813
1-2	1.8082		1.3370

INDEMNITY	Policy Year	Incurred LDF	Paid to 20th LDF
Beyond		1.0052	1.0052
19-20	2000	1.0001	1.0080
18-19	2001	1.0007	1.0017
17-18	2002	1.0000	1.0020
16-17	2003	1.0004	1.0036
15-16	2004	0.9994	1.0037
14-15	2005	0.9995	1.0057
13-14	2006	0.9997	1.0051
12-13	2007	1.0013	1.0055
11-12	2008	1.0011	1.0065
10-11	2009	1.0004	1.0059
9-10	2010	1.0006	1.0066
8-9	2011	1.0016	1.0075
7-8	2012	1.0023	1.0101
6-7	2013	1.0018	1.0151
5-6	2014	0.9999	1.0192
4-5	2015	1.0006	1.0354
3-4	2016	1.0187	1.0758
2-3	2017	1.0813	1.2143
1-2	2018	1.3370	1.8082

INDEMNITY	Policy Year	Incurred Cum LDF	Paid to 20th Cum LDF
Beyond		1.0052	1.0052
19-20	2000	1.0053	1.0132
18-19	2001	1.0060	1.0149
17-18	2002	1.0060	1.0169
16-17	2003	1.0063	1.0205
15-16	2004	1.0057	1.0243
14-15	2005	1.0051	1.0301
13-14	2006	1.0048	1.0353
12-13	2007	1.0062	1.0410
11-12	2008	1.0073	1.0477
10-11	2009	1.0076	1.0539
9-10	2010	1.0082	1.0609
8-9	2011	1.0098	1.0688
7-8	2012	1.0121	1.0796
6-7	2013	1.0139	1.0959
5-6	2014	1.0137	1.1169
4-5	2015	1.0143	1.1564
3-4	2016	1.0333	1.2441
2-3	2017	1.1173	1.5107
1-2	2018	1.4937	2.7317

INDEMNITY	Policy Year	Benefit Level Factor	LAE	Incurred Losses Law Adjustment	Paid Losses Law Adjustment
Beyond 19-20	2000	1.0000	1.0000	1.0158	1.0159
18-19	2001	1.0000	1.0000	1.0158	1.0159
17-18	2002	1.0000	1.0000	1.0157	1.0158
16-17	2003	1.0000	1.0000	1.0157	1.0158
15-16	2004	1.0000	1.0000	1.0156	1.0158
14-15	2005	1.0000	1.0000	1.0157	1.0158
13-14	2006	1.0000	1.0000	1.0157	1.0158
12-13	2007	1.0000	1.0000	1.0157	1.0158
11-12	2008	1.0000	1.0000	1.0157	1.0158
10-11	2009	1.0000	1.0000	1.0157	1.0158
9-10	2010	1.0000	1.0000	1.0156	1.0157
8-9	2011	1.0000	1.0000	1.0155	1.0157
7-8	2012	1.0000	1.0000	1.0153	1.0156
6-7	2013	1.0000	1.0000	1.0154	1.0156
5-6	2014	1.0000	1.0000	1.0149	1.0151
4-5	2015	1.0000	1.0000	1.0140	1.0144
3-4	2016	1.0000	1.0000	1.0116	1.0119
2-3	2017	1.0000	1.0000	1.0078	1.0073
1-2	2018	1.0000	1.0000	1.0054	1.0023

INDEMNITY	Policy Year	Incurred Base	Paid to 20th Base
Beyond			
19-20	2000	622,751,640	616,484,541
18-19	2001	632,912,138	626,266,587
17-18	2002	665,389,289	654,197,374
16-17	2003	641,598,291	631,297,090
15-16	2004	672,658,472	655,522,128
14-15	2005	672,717,531	660,161,292
13-14	2006	697,076,774	681,105,637
12-13	2007	727,650,568	710,905,222
11-12	2008	680,011,266	668,123,042
10-11	2009	619,702,498	607,449,501
9-10	2010	636,876,628	622,865,173
8-9	2011	613,398,723	596,723,737
7-8	2012	563,380,175	536,243,768
6-7	2013	562,326,997	542,824,207
5-6	2014	563,434,088	536,063,218
4-5	2015	552,087,229	511,887,757
3-4	2016	523,101,163	457,728,654
2-3	2017	525,978,410	412,969,296
1-2	2018	419,967,356	239,806,810
INDEMNITY	Policy Year	Proj Ult Incurred (Avg Pd & Inc)	Proj Ult Incurred (Incur)
Beyond			
19-20	2000	635,244,759	635,951,255
18-19	2001	646,224,964	646,768,529
17-18	2002	677,834,886	679,896,472
16-17	2003	655,120,806	655,800,204
15-16	2004	684,550,149	687,057,001
14-15	2005	688,773,429	686,761,377
13-14	2006	713,843,074	711,392,645
12-13	2007	747,689,272	743,629,118
11-12	2008	703,391,590	695,726,928
10-11	2009	642,256,882	634,204,228
9-10	2010	661,662,897	652,122,642
8-9	2011	638,407,661	629,027,720
7-8	2012	583,447,075	578,930,029
6-7	2013	591,544,532	578,922,804
5-6	2014	593,713,420	579,639,604
4-5	2015	584,145,352	567,834,979
3-4	2016	561,535,516	546,812,508
2-3	2017	610,351,637	592,261,686
1-2	2018	643,620,747	630,684,813
INDEMNITY	Policy Year	Adjusted Incurred (Avg Pd & Inc)	Adjusted Incurred (Incur)
Beyond			
19-20	2000	635,244,759	635,951,255
18-19	2001	646,224,964	646,768,529
17-18	2002	677,834,886	679,896,472
16-17	2003	655,120,806	655,800,204
15-16	2004	684,550,149	687,057,001
14-15	2005	688,773,429	686,761,377
13-14	2006	713,843,074	711,392,645
12-13	2007	747,689,272	743,629,118
11-12	2008	703,391,590	695,726,928
10-11	2009	642,256,882	634,204,228
9-10	2010	661,662,897	652,122,642
8-9	2011	638,407,661	629,027,720
7-8	2012	583,447,075	578,930,029
6-7	2013	591,544,532	578,922,804
5-6	2014	593,713,420	579,639,604
4-5	2015	584,145,352	567,834,979
3-4	2016	561,535,516	546,812,508
2-3	2017	610,351,637	592,261,686
1-2	2018	643,620,747	630,684,813

INDEMNITY	Policy Year	Loss Ratio (Avg Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-20)				
	2000	1.0866	1.0878	1.0854				
	2001	1.0333	1.0342	1.0325				
	2002	1.0400	1.0432	1.0369				
	2003	0.9649	0.9659	0.9639				
	2004	0.9658	0.9693	0.9622				
	2005	0.8752	0.8726	0.8777				
	2006	0.8583	0.8553	0.8612				
	2007	0.8630	0.8583	0.8677				
	2008	0.8295	0.8205	0.8386				
	2009	0.8092	0.7990	0.8193				
	2010	0.7863	0.7749	0.7976				
	2011	0.7425	0.7316	0.7534				
	2012	0.7001	0.6946	0.7055				
	2013	0.6927	0.6780	0.7075				
	2014	0.6621	0.6464	0.6778				
	2015	0.5996	0.5829	0.6163				
	2016	0.5585	0.5439	0.5732				
	2017	0.5526	0.5362	0.5690				
	2018	0.5553	0.5442	0.5665				
INDEMNITY FREQUENCY	Policy Year	Claim Frequency	Normalized Frequency	Trend Factor to 1/1/19	Selected Ann Trend Factor	Trend Period # Years	Trend 1/1/19-4/1/22	Combined Trend Factor
					-6.3%	1		
					-6.3%	1		
					-6.3%	1.25		
	2008	27.87	1.0000					
	2009	27.18	0.9752					
	2010	26.66	0.9566					
	2011	24.97	0.8959					
	2012	23.40	0.8396					
	2013	22.92	0.8224					
	2014	20.94	0.7513					
	2015	19.33	0.6936					
	2016	18.09	0.6491	0.8788			0.8107	0.7124
	2017	17.11	0.6139	0.9375			0.8107	0.7600
	2018	16.34	0.5863	1.0000			0.8107	0.8107
INDEMNITY SEVERITY RATIOS	Policy Year	Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)				
	2008	0.8295	0.8205	0.8386				
	2009	0.8297	0.8193	0.8401				
	2010	0.8220	0.8101	0.8338				
	2011	0.8287	0.8166	0.8409				
	2012	0.8338	0.8273	0.8403				
	2013	0.8423	0.8244	0.8603				
	2014	0.8812	0.8603	0.9021				
	2015	0.8645	0.8404	0.8886				
	2016	0.8604	0.8379	0.8831				
	2017	0.9001	0.8734	0.9268				
	2018	0.9471	0.9282	0.9662				

INDEMNITY PAID TO INCURRED LOSS DEVELOPMENT

<u>EQUATION</u>	Model	$Y = a + b * \log(x) + c * \exp(-x)$
<u>COEFFICIENTS</u>	a	0.075874749
	b	(0.019365939)
	c	2.325946779

R^2 0.9945

<u>Development</u>	<u>2 Year Average</u>	<u>Points Used</u>	<u>Fitted Value</u>	<u>Selected</u>
1-2	2.3131	2.3131	1.9315	
2-3	1.3796	1.3796	1.3772	
3-4	1.1633	1.1633	1.1704	
4-5	1.0889	1.0889	1.0916	
5-6	1.0688	1.0688	1.0604	
6-7	1.0589	1.0589	1.0469	
7-8	1.0397	1.0397	1.0403	
8-9	1.0307	1.0307	1.0364	
9-10	1.0289	1.0289	1.0336	
10-11	1.0294	1.0294	1.0314	
11-12	1.0323	1.0323	1.0295	
12-13	1.0297	1.0297	1.0278	
13-14	1.0316	1.0316	1.0262	
14-15	1.0299	1.0299	1.0248	
15-16	1.0232	1.0232	1.0234	
16-17	1.0186	1.0186	1.0222	
17-18	1.0130	1.0130	1.0210	
18-19	1.0122	1.0122	1.0199	
19-20	1.0105	1.0105	1.0189	1.0189
20-21	1.0120	1.0120	1.0179	1.0179
21-22	1.0181		1.0169	1.0169
22-23	1.0225		1.0160	1.0160
23-24	1.0276		1.0152	1.0152
24-25	1.0275		1.0143	1.0143
25-26	1.0271		1.0135	1.0135
26-27	1.0273		1.0128	1.0128
27-28	1.0207	1.0207	1.0120	1.0120
28-29	1.0174	1.0174	1.0113	1.0113
29-30	1.0148	1.0148	1.0107	1.0107
30-31			1.0100	1.0100
31-32			1.0094	1.0094
32-33			1.0088	1.0088
33-34			1.0082	1.0082
34-35			1.0076	1.0076
35-36			1.0070	1.0070
36-37			1.0065	1.0065
37-38			1.0059	1.0059
38-39			1.0054	1.0054
39-40			1.0049	1.0049
40-41			1.0044	1.0044
41-42			1.0040	1.0040
42-43			1.0035	1.0035
43-44			1.0030	1.0030
44-45			1.0026	1.0026
45-46			1.0022	1.0022
46-47			1.0017	1.0017
47-48			1.0013	1.0013
48-49			1.0009	1.0009
49-50			1.0005	1.0005
50-Ult *	1.0000	1.0000	1.0001	1.0001

Bridge Factor (Average of Selected Factors)

1.0080

* Selected

INDEMNITY Linear FITTED	Policy Year	Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2015	0.8499	0.8251	0.8747
	2016	0.8787	0.8550	0.9024
	2017	0.9074	0.8849	0.9300
	2018	0.9362	0.9148	0.9577
5 Point	2014	0.8572	0.8343	0.8801
	2015	0.8739	0.8512	0.8967
	2016	0.8907	0.8680	0.9134
	2017	0.9074	0.8849	0.9300
	2018	0.9241	0.9018	0.9466
6 Point	2013	0.8414	0.8211	0.8618
	2014	0.8579	0.8369	0.8789
	2015	0.8744	0.8528	0.8960
	2016	0.8908	0.8687	0.9131
	2017	0.9073	0.8846	0.9301
	2018	0.9238	0.9005	0.9472
7 Point	2012	0.8291	0.8155	0.8427
	2013	0.8446	0.8290	0.8602
	2014	0.8601	0.8425	0.8778
	2015	0.8756	0.8560	0.8953
	2016	0.8912	0.8695	0.9129
	2017	0.9067	0.8830	0.9305
	2018	0.9222	0.8965	0.9480
8 Point	2011	0.8199	0.8081	0.8317
	2012	0.8341	0.8203	0.8479
	2013	0.8484	0.8326	0.8642
	2014	0.8626	0.8449	0.8804
	2015	0.8769	0.8572	0.8967
	2016	0.8912	0.8695	0.9129
	2017	0.9054	0.8818	0.9291
	2018	0.9197	0.8941	0.9454
9 Point	2010	0.8118	0.8012	0.8224
	2011	0.8250	0.8125	0.8374
	2012	0.8381	0.8238	0.8524
	2013	0.8513	0.8352	0.8674
	2014	0.8645	0.8465	0.8825
	2015	0.8776	0.8578	0.8975
	2016	0.8908	0.8692	0.9125
	2017	0.9040	0.8805	0.9275
	2018	0.9171	0.8918	0.9425
10 Point	2009	0.8094	0.8000	0.8187
	2010	0.8208	0.8097	0.8319
	2011	0.8323	0.8195	0.8451
	2012	0.8438	0.8292	0.8584
	2013	0.8552	0.8389	0.8716
	2014	0.8667	0.8487	0.8848
	2015	0.8782	0.8584	0.8981
	2016	0.8897	0.8681	0.9113
	2017	0.9011	0.8778	0.9245
	2018	0.9126	0.8876	0.9378

INDEMNITY Linear TRENDED		Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	Fitted	1.0296	1.0120	1.0475
5 Point	Fitted	0.9785	0.9567	1.0007
6 Point	Fitted	0.9773	0.9521	1.0028
7 Point	Fitted	0.9727	0.9404	1.0051
8 Point	Fitted	0.9660	0.9340	0.9982
9 Point	Fitted	0.9599	0.9287	0.9914
10 Point	Fitted	0.9499	0.9192	0.9808
INDEMNITY Linear Severity Trend Factor		Sev Trend Factor (Avg Pd & Inc)	Sev Trend Factor (Incur)	Sev Trend Factor (Pd-20)
4 Point	2016	1.1718	1.1835	1.1609
	2017	1.1347	1.1436	1.1264
	2018	1.0998	1.1062	1.0938
5 Point	2016	1.0987	1.1021	1.0956
	2017	1.0784	1.0811	1.0760
	2018	1.0589	1.0608	1.0571
6 Point	2016	1.0971	1.0960	1.0983
	2017	1.0772	1.0763	1.0781
	2018	1.0580	1.0573	1.0586
7 Point	2016	1.0915	1.0816	1.1010
	2017	1.0728	1.0650	1.0802
	2018	1.0547	1.0490	1.0602
8 Point	2016	1.0840	1.0742	1.0934
	2017	1.0669	1.0592	1.0743
	2018	1.0504	1.0447	1.0558
9 Point	2016	1.0776	1.0685	1.0864
	2017	1.0619	1.0547	1.0688
	2018	1.0467	1.0413	1.0518
10 Point	2016	1.0677	1.0588	1.0762
	2017	1.0541	1.0471	1.0608
	2018	1.0409	1.0356	1.0459

INDEMNITY Expon'l FITTED	Policy Year	Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2015	0.8507	0.8261	0.8754
	2016	0.8782	0.8546	0.9020
	2017	0.9067	0.8841	0.9294
	2018	0.9361	0.9147	0.9576
5 Point	2014	0.8579	0.8350	0.8807
	2015	0.8738	0.8511	0.8966
	2016	0.8901	0.8674	0.9129
	2017	0.9067	0.8841	0.9294
	2018	0.9236	0.9011	0.9462
6 Point	2013	0.8422	0.8219	0.8626
	2014	0.8579	0.8370	0.8789
	2015	0.8739	0.8523	0.8955
	2016	0.8901	0.8680	0.9124
	2017	0.9067	0.8838	0.9296
	2018	0.9236	0.9000	0.9472
7 Point	2012	0.8301	0.8165	0.8436
	2013	0.8448	0.8292	0.8603
	2014	0.8597	0.8422	0.8772
	2015	0.8749	0.8553	0.8945
	2016	0.8904	0.8687	0.9121
	2017	0.9061	0.8823	0.9301
	2018	0.9222	0.8961	0.9485
8 Point	2011	0.8211	0.8092	0.8330
	2012	0.8345	0.8207	0.8482
	2013	0.8481	0.8325	0.8638
	2014	0.8620	0.8444	0.8796
	2015	0.8761	0.8565	0.8957
	2016	0.8904	0.8687	0.9121
	2017	0.9049	0.8811	0.9289
	2018	0.9197	0.8937	0.9459
9 Point	2010	0.8132	0.8024	0.8239
	2011	0.8255	0.8130	0.8379
	2012	0.8380	0.8238	0.8522
	2013	0.8507	0.8348	0.8667
	2014	0.8636	0.8458	0.8815
	2015	0.8767	0.8570	0.8965
	2016	0.8901	0.8684	0.9118
	2017	0.9036	0.8799	0.9273
	2018	0.9173	0.8916	0.9431
10 Point	2009	0.8108	0.8013	0.8204
	2010	0.8215	0.8104	0.8327
	2011	0.8324	0.8196	0.8452
	2012	0.8434	0.8289	0.8579
	2013	0.8546	0.8384	0.8707
	2014	0.8659	0.8479	0.8838
	2015	0.8773	0.8576	0.8971
	2016	0.8889	0.8673	0.9106
	2017	0.9007	0.8772	0.9242
	2018	0.9126	0.8872	0.9381

INDEMNITY Expon'l TRENDED		Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	Fitted	1.0383	1.0214	1.0555
5 Point	Fitted	0.9807	0.9586	1.0030
6 Point	Fitted	0.9806	0.9547	1.0066
7 Point	Fitted	0.9763	0.9424	1.0106
8 Point	Fitted	0.9695	0.9360	1.0034
9 Point	Fitted	0.9633	0.9306	0.9963
10 Point	Fitted	0.9524	0.9205	0.9846
INDEMNITY Expon'l Severity Trend Factor		Sev Trend Factor (Avg Pd & Inc)	Sev Trend Factor (Incur)	Sev Trend Factor (Pd-20)
4 Point	2016	1.1822	1.1952	1.1703
	2017	1.1451	1.1553	1.1357
	2018	1.1092	1.1167	1.1022
5 Point	2016	1.1018	1.1052	1.0988
	2017	1.0816	1.0843	1.0792
	2018	1.0618	1.0639	1.0600
6 Point	2016	1.1016	1.1000	1.1033
	2017	1.0815	1.0802	1.0828
	2018	1.0617	1.0608	1.0627
7 Point	2016	1.0965	1.0848	1.1079
	2017	1.0774	1.0681	1.0865
	2018	1.0587	1.0517	1.0655
8 Point	2016	1.0889	1.0774	1.1000
	2017	1.0713	1.0622	1.0802
	2018	1.0541	1.0472	1.0608
9 Point	2016	1.0823	1.0716	1.0927
	2017	1.0661	1.0576	1.0744
	2018	1.0502	1.0438	1.0564
10 Point	2016	1.0714	1.0612	1.0814
	2017	1.0574	1.0493	1.0654
	2018	1.0436	1.0375	1.0496

INDEMNITY Linear LR Trend Factor		LR Trend Factor (Avg Pd & Inc)	LR Trend Factor (Incur)	LR Trend Factor (Pd-20)
4 Point	2016	0.8348	0.8431	0.8270
	2017	0.8624	0.8691	0.8561
	2018	0.8916	0.8968	0.8867
5 Point	2016	0.7827	0.7851	0.7805
	2017	0.8196	0.8216	0.8178
	2018	0.8585	0.8600	0.8570
6 Point	2016	0.7816	0.7808	0.7824
	2017	0.8187	0.8180	0.8194
	2018	0.8577	0.8572	0.8582
7 Point	2016	0.7776	0.7705	0.7844
	2017	0.8153	0.8094	0.8210
	2018	0.8550	0.8504	0.8595
8 Point	2016	0.7722	0.7653	0.7789
	2017	0.8108	0.8050	0.8165
	2018	0.8516	0.8469	0.8559
9 Point	2016	0.7677	0.7612	0.7740
	2017	0.8070	0.8016	0.8123
	2018	0.8486	0.8442	0.8527
10 Point	2016	0.7606	0.7543	0.7667
	2017	0.8011	0.7958	0.8062
	2018	0.8439	0.8396	0.8479
INDEMNITY Expon'l LR Trend Factor		LR Trend Factor (Avg Pd & Inc)	LR Trend Factor (Incur)	LR Trend Factor (Pd-20)
4 Point	2016	0.8422	0.8515	0.8337
	2017	0.8703	0.8780	0.8631
	2018	0.8992	0.9053	0.8936
5 Point	2016	0.7849	0.7873	0.7828
	2017	0.8220	0.8241	0.8202
	2018	0.8608	0.8625	0.8593
6 Point	2016	0.7848	0.7836	0.7860
	2017	0.8219	0.8210	0.8229
	2018	0.8607	0.8600	0.8615
7 Point	2016	0.7811	0.7728	0.7893
	2017	0.8188	0.8118	0.8257
	2018	0.8583	0.8526	0.8638
8 Point	2016	0.7757	0.7675	0.7836
	2017	0.8142	0.8073	0.8210
	2018	0.8546	0.8490	0.8600
9 Point	2016	0.7710	0.7634	0.7784
	2017	0.8102	0.8038	0.8165
	2018	0.8514	0.8462	0.8564
10 Point	2016	0.7633	0.7560	0.7704
	2017	0.8036	0.7975	0.8097
	2018	0.8460	0.8411	0.8509

INDEMNITY Linear TRENDED LR	Base Policy Year	Trended LR (Avg Pd & Inc)	Trended LR (Incur)	Trended LR (Pd-20)
4 Point	2016	0.4662	0.4586	0.4740
	2017	0.4766	0.4660	0.4871
	2018	0.4951	0.4880	0.5023
	3 Yr Ave	0.4793	0.4709	0.4878
5 Point	2016	0.4371	0.4270	0.4474
	2017	0.4529	0.4405	0.4653
	2018	0.4767	0.4680	0.4855
	3 Yr Ave	0.4556	0.4452	0.4661
6 Point	2016	0.4365	0.4247	0.4485
	2017	0.4524	0.4386	0.4662
	2018	0.4763	0.4665	0.4862
	3 Yr Ave	0.4551	0.4433	0.4670
7 Point	2016	0.4343	0.4191	0.4496
	2017	0.4505	0.4340	0.4671
	2018	0.4748	0.4628	0.4869
	3 Yr Ave	0.4532	0.4386	0.4679
8 Point	2016	0.4313	0.4162	0.4465
	2017	0.4480	0.4316	0.4646
	2018	0.4729	0.4609	0.4849
	3 Yr Ave	0.4507	0.4362	0.4653
9 Point	2016	0.4288	0.4140	0.4437
	2017	0.4459	0.4298	0.4622
	2018	0.4712	0.4594	0.4831
	3 Yr Ave	0.4486	0.4344	0.4630
10 Point	2016	0.4248	0.4103	0.4395
	2017	0.4427	0.4267	0.4587
	2018	0.4686	0.4569	0.4803
	3 Yr Ave	0.4454	0.4313	0.4595

INDEMNITY Expon'l TRENDED LR	Base Policy Year	Trended LR (Avg Pd & Inc)	Trended LR (Incur)	Trended LR (Pd-20)
4 Point	2016	0.4704	0.4631	0.4779
	2017	0.4809	0.4708	0.4911
	2018	0.4993	0.4927	0.5062
	3 Yr Ave	0.4835	0.4755	0.4917
5 Point	2016	0.4384	0.4282	0.4487
	2017	0.4542	0.4419	0.4667
	2018	0.4780	0.4694	0.4868
	3 Yr Ave	0.4569	0.4465	0.4674
6 Point	2016	0.4383	0.4262	0.4505
	2017	0.4542	0.4402	0.4682
	2018	0.4779	0.4680	0.4880
	3 Yr Ave	0.4568	0.4448	0.4689
7 Point	2016	0.4362	0.4203	0.4524
	2017	0.4525	0.4353	0.4698
	2018	0.4766	0.4640	0.4893
	3 Yr Ave	0.4551	0.4399	0.4705
8 Point	2016	0.4332	0.4174	0.4492
	2017	0.4499	0.4329	0.4671
	2018	0.4746	0.4620	0.4872
	3 Yr Ave	0.4526	0.4374	0.4678
9 Point	2016	0.4306	0.4152	0.4462
	2017	0.4477	0.4310	0.4646
	2018	0.4728	0.4605	0.4852
	3 Yr Ave	0.4504	0.4356	0.4653
10 Point	2016	0.4263	0.4112	0.4416
	2017	0.4441	0.4276	0.4607
	2018	0.4698	0.4577	0.4820
	3 Yr Ave	0.4467	0.4322	0.4614

MEDICAL	Selected Paid LDF	Selected Pd-Incur LDF	Selected Incurred LDF
Beyond			1.0588
19-20	1.0086	1.0270	1.0034
18-19	1.0086		1.0019
17-18	1.0079		1.0046
16-17	1.0098		0.9995
15-16	1.0104		1.0097
14-15	1.0087		1.0036
13-14	1.0084		1.0084
12-13	1.0104		1.0027
11-12	1.0106		1.0041
10-11	1.0081		1.0023
9-10	1.0067		1.0015
8-9	1.0080		1.0004
7-8	1.0096		1.0065
6-7	1.0099		1.0077
5-6	1.0104		0.9971
4-5	1.0103		0.9904
3-4	1.0192		1.0018
2-3	1.0603		1.0068
1-2	1.2400		1.0460

MEDICAL	Policy Year	Incurred LDF	Paid to 20th LDF
Beyond		1.0588	1.0588
19-20	2000	1.0034	1.0270
18-19	2001	1.0019	1.0086
17-18	2002	1.0046	1.0079
16-17	2003	0.9995	1.0098
15-16	2004	1.0097	1.0104
14-15	2005	1.0036	1.0087
13-14	2006	1.0084	1.0084
12-13	2007	1.0027	1.0104
11-12	2008	1.0041	1.0106
10-11	2009	1.0023	1.0081
9-10	2010	1.0015	1.0067
8-9	2011	1.0004	1.0080
7-8	2012	1.0065	1.0096
6-7	2013	1.0077	1.0099
5-6	2014	0.9971	1.0104
4-5	2015	0.9904	1.0103
3-4	2016	1.0018	1.0192
2-3	2017	1.0068	1.0603
1-2	2018	1.0460	1.2400

MEDICAL	Policy Year	Incurred Cum LDF	Paid to 20th Cum LDF
Beyond		1.0588	1.0588
19-20	2000	1.0623	1.0874
18-19	2001	1.0644	1.0967
17-18	2002	1.0692	1.1053
16-17	2003	1.0687	1.1162
15-16	2004	1.0790	1.1277
14-15	2005	1.0828	1.1375
13-14	2006	1.0919	1.1470
12-13	2007	1.0948	1.1590
11-12	2008	1.0993	1.1713
10-11	2009	1.1018	1.1807
9-10	2010	1.1035	1.1887
8-9	2011	1.1039	1.1981
7-8	2012	1.1110	1.2096
6-7	2013	1.1196	1.2215
5-6	2014	1.1163	1.2342
4-5	2015	1.1056	1.2469
3-4	2016	1.1076	1.2708
2-3	2017	1.1150	1.3474
1-2	2018	1.1663	1.6707

MEDICAL	Policy Year	Benefit Level Factor	LAE	Incurred Losses Law Adjustment	Paid Losses Law Adjustment
Beyond					
19-20	2000	1.0000	1.0000	0.9712	0.9698
18-19	2001	1.0000	1.0000	0.9831	0.9825
17-18	2002	1.0000	1.0000	0.9953	0.9950
16-17	2003	1.0000	1.0000	1.0060	1.0062
15-16	2004	1.0000	1.0000	1.0158	1.0166
14-15	2005	1.0000	1.0000	1.0242	1.0256
13-14	2006	1.0000	1.0000	1.0312	1.0327
12-13	2007	1.0000	1.0000	1.0360	1.0372
11-12	2008	1.0000	1.0000	1.0325	1.0337
10-11	2009	1.0000	1.0000	1.0046	1.0048
9-10	2010	1.0000	1.0000	0.9920	0.9914
8-9	2011	1.0000	1.0000	0.9920	0.9915
7-8	2012	1.0000	1.0000	0.9927	0.9920
6-7	2013	1.0000	1.0000	0.9940	0.9935
5-6	2014	1.0000	1.0000	0.9982	0.9981
4-5	2015	1.0000	1.0000	1.0000	1.0000
3-4	2016	1.0000	1.0000	1.0000	1.0000
2-3	2017	1.0000	1.0000	1.0000	1.0000
1-2	2018	1.0000	1.0000	1.0000	1.0000

MEDICAL	Policy Year		Incurred Base	Paid to 20th Base
Beyond				
19-20	2000		501,764,121	478,368,645
18-19	2001		484,285,214	469,642,833
17-18	2002		548,954,390	522,266,118
16-17	2003		548,509,596	527,449,327
15-16	2004		594,263,990	567,210,681
14-15	2005		613,544,001	580,257,071
13-14	2006		619,861,679	590,867,935
12-13	2007		656,136,838	634,939,309
11-12	2008		595,215,744	573,431,088
10-11	2009		539,125,699	514,374,326
9-10	2010		601,140,612	561,368,936
8-9	2011		589,966,324	555,999,886
7-8	2012		555,712,085	505,805,263
6-7	2013		561,847,995	520,011,886
5-6	2014		566,014,725	529,879,285
4-5	2015		538,919,903	490,811,380
3-4	2016		524,445,573	476,799,520
2-3	2017		575,170,843	493,041,337
1-2	2018		628,654,339	438,312,112
MEDICAL	Policy Year	Proj Ult Incurred (Avg Pd & Inc)	Proj Ult Incurred (Incur)	Proj Ult Incurred (Pd-20)
Beyond				
19-20	2000	511,091,557	517,695,627	504,487,487
18-19	2001	506,400,386	506,740,824	506,059,947
17-18	2002	579,271,223	584,158,855	574,383,591
16-17	2003	591,048,356	589,697,099	592,399,613
15-16	2004	650,785,954	651,341,024	650,230,883
14-15	2005	678,710,250	680,454,862	676,965,638
13-14	2006	698,922,719	697,940,715	699,904,722
12-13	2007	753,724,670	744,188,709	763,260,630
11-12	2008	684,961,524	675,595,239	694,327,809
10-11	2009	603,494,187	596,739,861	610,248,512
9-10	2010	659,809,299	658,044,167	661,574,430
8-9	2011	653,276,446	646,058,713	660,494,179
7-8	2012	609,923,664	612,909,783	606,937,545
6-7	2013	628,152,740	625,250,659	631,054,820
5-6	2014	641,700,046	630,693,330	652,706,762
4-5	2015	603,911,278	595,829,845	611,992,710
3-4	2016	593,396,374	580,875,917	605,916,830
2-3	2017	652,819,694	641,315,490	664,323,897
1-2	2018	732,743,801	733,199,556	732,288,046
MEDICAL	Policy Year	Adjusted Incurred (Avg Pd & Inc)	Adjusted Incurred (Incur)	Adjusted Incurred (Pd-20)
Beyond				
19-20	2000	511,091,557	517,695,627	504,487,487
18-19	2001	506,400,386	506,740,824	506,059,947
17-18	2002	579,271,223	584,158,855	574,383,591
16-17	2003	591,048,356	589,697,099	592,399,613
15-16	2004	650,785,954	651,341,024	650,230,883
14-15	2005	678,710,250	680,454,862	676,965,638
13-14	2006	698,922,719	697,940,715	699,904,722
12-13	2007	753,724,670	744,188,709	763,260,630
11-12	2008	684,961,524	675,595,239	694,327,809
10-11	2009	603,494,187	596,739,861	610,248,512
9-10	2010	659,809,299	658,044,167	661,574,430
8-9	2011	653,276,446	646,058,713	660,494,179
7-8	2012	609,923,664	612,909,783	606,937,545
6-7	2013	628,152,740	625,250,659	631,054,820
5-6	2014	641,700,046	630,693,330	652,706,762
4-5	2015	603,911,278	595,829,845	611,992,710
3-4	2016	593,396,374	580,875,917	605,916,830
2-3	2017	652,819,694	641,315,490	664,323,897
1-2	2018	732,743,801	733,199,556	732,288,046

MEDICAL	Policy Year	Loss Ratio (Avg Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-20)				
	2000	0.8742	0.8855	0.8629				
	2001	0.8097	0.8103	0.8092				
	2002	0.8888	0.8963	0.8813				
	2003	0.8705	0.8685	0.8725				
	2004	0.9181	0.9189	0.9174				
	2005	0.8624	0.8646	0.8602				
	2006	0.8403	0.8391	0.8415				
	2007	0.8700	0.8590	0.8810				
	2008	0.8078	0.7968	0.8189				
	2009	0.7603	0.7518	0.7688				
	2010	0.7841	0.7820	0.7862				
	2011	0.7598	0.7514	0.7682				
	2012	0.7318	0.7354	0.7283				
	2013	0.7356	0.7322	0.7390				
	2014	0.7157	0.7034	0.7279				
	2015	0.6199	0.6116	0.6282				
	2016	0.5902	0.5778	0.6027				
	2017	0.5911	0.5806	0.6015				
	2018	0.6322	0.6326	0.6318				
MEDICAL FREQUENCY	Policy Year	Claim Frequency	Normalized Frequency	Trend Factor to 1/1/19	Selected Ann Trend Factor	Trend Period # Years	Trend 1/1/19-4/1/22	Combined Trend Factor
					-6.3%	1		
					-6.3%	1		
					-6.3%	1.25		
	2008	27.87	1.0000					
	2009	27.18	0.9752					
	2010	26.66	0.9566					
	2011	24.97	0.8959					
	2012	23.40	0.8396					
	2013	22.92	0.8224					
	2014	20.94	0.7513					
	2015	19.33	0.6936					
	2016	18.09	0.6491	0.8788			0.8107	0.7124
	2017	17.11	0.6139	0.9375			0.8107	0.7600
	2018	16.34	0.5863	1.0000			0.8107	0.8107
MEDICAL SEVERITY RATIOS	Policy Year	Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)				
	2008	0.8078	0.7968	0.8189				
	2009	0.7796	0.7709	0.7883				
	2010	0.8197	0.8175	0.8219				
	2011	0.8480	0.8387	0.8574				
	2012	0.8716	0.8759	0.8674				
	2013	0.8945	0.8903	0.8986				
	2014	0.9526	0.9362	0.9688				
	2015	0.8938	0.8818	0.9057				
	2016	0.9093	0.8902	0.9285				
	2017	0.9628	0.9457	0.9798				
	2018	1.0783	1.0790	1.0776				

MEDICAL PAID TO INCURRED LOSS DEVELOPMENT

<u>EQUATION</u>	Model	$Y = a + b/x^{.5} + c * \log(x)/x^2$
<u>COEFFICIENTS</u>	a	(0.053947914)
	b	0.478876426
	c	(0.828471059)

R² 0.9489

<u>Development</u>	<u>2 Year Average</u>	<u>Points Used</u>	<u>Fitted Value</u>	<u>Selected</u>
1-2	1.4367	1.4367	1.4249	
2-3	1.1759	1.1759	1.1411	
3-4	1.1135	1.1135	1.1214	
4-5	1.0939	1.0939	1.1137	
5-6	1.1000	1.1000	1.1069	
6-7	1.0932	1.0932	1.1003	
7-8	1.0809	1.0809	1.0941	
8-9	1.0708	1.0708	1.0884	
9-10	1.0522	1.0522	1.0832	
10-11	1.0465	1.0465	1.0784	
11-12	1.0551	1.0551	1.0740	
12-13	1.0631	1.0631	1.0700	
13-14	1.0645	1.0645	1.0663	
14-15	1.0566	1.0566	1.0629	
15-16	1.0641	1.0641	1.0597	
16-17	1.0547	1.0547	1.0568	
17-18	1.0520	1.0520	1.0541	
18-19	1.0624	1.0624	1.0515	
19-20	1.0739	1.0739	1.0492	1.0492
20-21	1.0787		1.0469	1.0469
21-22	1.0721		1.0448	1.0448
22-23	1.0670		1.0429	1.0429
23-24	1.0681		1.0410	1.0410
24-25	1.0610		1.0392	1.0392
25-26	1.0506	1.0506	1.0376	1.0376
26-27	1.0569	1.0569	1.0360	1.0360
27-28	1.0510	1.0510	1.0345	1.0345
28-29	1.0573	1.0573	1.0330	1.0330
29-30	1.0568	1.0568	1.0317	1.0317
30-31			1.0304	1.0304
31-32			1.0291	1.0291
32-33			1.0279	1.0279
33-34			1.0268	1.0268
34-35			1.0257	1.0257
35-36			1.0246	1.0246
36-37			1.0236	1.0236
37-38			1.0226	1.0226
38-39			1.0216	1.0216
39-40			1.0207	1.0207
40-41			1.0199	1.0199
41-42			1.0190	1.0190
42-43			1.0182	1.0182
43-44			1.0174	1.0174
44-45			1.0166	1.0166
45-46			1.0159	1.0159
46-47			1.0152	1.0152
47-48			1.0145	1.0145
48-49			1.0138	1.0138
49-50			1.0131	1.0131
50-Ult *	1.0000	1.0000	1.0125	1.0125

Bridge Factor (Average of Selected Factors)

1.0270

* Selected

MEDICAL Linear FITTED	Policy Year	Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2015	0.8700	0.8521	0.8879
	2016	0.9307	0.9168	0.9446
	2017	0.9914	0.9815	1.0013
	2018	1.0521	1.0462	1.0580
5 Point	2014	0.8953	0.8767	0.9137
	2015	0.9273	0.9116	0.9429
	2016	0.9594	0.9466	0.9721
	2017	0.9914	0.9815	1.0013
	2018	1.0234	1.0165	1.0304
6 Point	2013	0.8796	0.8672	0.8919
	2014	0.9072	0.8952	0.9191
	2015	0.9348	0.9232	0.9463
	2016	0.9623	0.9512	0.9734
	2017	0.9899	0.9792	1.0006
	2018	1.0175	1.0072	1.0277
7 Point	2012	0.8611	0.8562	0.8660
	2013	0.8866	0.8803	0.8929
	2014	0.9121	0.9044	0.9197
	2015	0.9376	0.9284	0.9466
	2016	0.9630	0.9525	0.9735
	2017	0.9885	0.9766	1.0004
	2018	1.0140	1.0007	1.0273
8 Point	2011	0.8408	0.8349	0.8467
	2012	0.8652	0.8584	0.8721
	2013	0.8897	0.8819	0.8974
	2014	0.9141	0.9055	0.9228
	2015	0.9386	0.9290	0.9482
	2016	0.9630	0.9525	0.9735
	2017	0.9875	0.9760	0.9989
	2018	1.0119	0.9996	1.0242
9 Point	2010	0.8176	0.8137	0.8216
	2011	0.8418	0.8368	0.8469
	2012	0.8661	0.8599	0.8722
	2013	0.8903	0.8830	0.8975
	2014	0.9145	0.9061	0.9229
	2015	0.9387	0.9293	0.9482
	2016	0.9630	0.9524	0.9735
	2017	0.9872	0.9755	0.9988
	2018	1.0114	0.9986	1.0241
10 Point	2009	0.7886	0.7838	0.7935
	2010	0.8136	0.8080	0.8193
	2011	0.8386	0.8321	0.8450
	2012	0.8636	0.8563	0.8708
	2013	0.8885	0.8805	0.8965
	2014	0.9135	0.9047	0.9223
	2015	0.9385	0.9289	0.9480
	2016	0.9635	0.9531	0.9738
	2017	0.9884	0.9773	0.9995
	2018	1.0134	1.0015	1.0253

MEDICAL Linear TRENDED		Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	Fitted	1.2494	1.2565	1.2422
5 Point	Fitted	1.1276	1.1301	1.1252
6 Point	Fitted	1.1071	1.0983	1.1160
7 Point	Fitted	1.0968	1.0789	1.1146
8 Point	Fitted	1.0914	1.0760	1.1066
9 Point	Fitted	1.0901	1.0738	1.1064
10 Point	Fitted	1.0946	1.0801	1.1090
MEDICAL Linear Severity Trend Factor		Sev Trend Factor (Avg Pd & Inc)	Sev Trend Factor (Incur)	Sev Trend Factor (Pd-20)
4 Point	2016	1.3424	1.3705	1.3152
	2017	1.2602	1.2802	1.2407
	2018	1.1875	1.2010	1.1742
5 Point	2016	1.1753	1.1938	1.1575
	2017	1.1374	1.1513	1.1238
	2018	1.1017	1.1117	1.0920
6 Point	2016	1.1504	1.1546	1.1465
	2017	1.1184	1.1216	1.1154
	2018	1.0881	1.0904	1.0859
7 Point	2016	1.1389	1.1327	1.1450
	2017	1.1095	1.1048	1.1142
	2018	1.0817	1.0782	1.0850
8 Point	2016	1.1333	1.1297	1.1367
	2017	1.1052	1.1025	1.1079
	2018	1.0785	1.0765	1.0805
9 Point	2016	1.1321	1.1274	1.1366
	2017	1.1043	1.1007	1.1077
	2018	1.0778	1.0752	1.0804
10 Point	2016	1.1361	1.1332	1.1389
	2017	1.1074	1.1052	1.1095
	2018	1.0801	1.0785	1.0816

MEDICAL Expon'l FITTED	Policy Year	Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2015	0.8733	0.8561	0.8905
	2016	0.9292	0.9151	0.9432
	2017	0.9886	0.9781	0.9990
	2018	1.0519	1.0454	1.0582
5 Point	2014	0.8975	0.8796	0.9154
	2015	0.9269	0.9112	0.9425
	2016	0.9573	0.9441	0.9703
	2017	0.9886	0.9781	0.9990
	2018	1.0210	1.0133	1.0286
6 Point	2013	0.8823	0.8704	0.8941
	2014	0.9074	0.8956	0.9191
	2015	0.9333	0.9216	0.9448
	2016	0.9599	0.9483	0.9713
	2017	0.9872	0.9759	0.9985
	2018	1.0154	1.0042	1.0265
7 Point	2012	0.8642	0.8597	0.8686
	2013	0.8873	0.8813	0.8932
	2014	0.9110	0.9035	0.9185
	2015	0.9354	0.9262	0.9445
	2016	0.9604	0.9495	0.9712
	2017	0.9861	0.9734	0.9987
	2018	1.0125	0.9979	1.0270
8 Point	2011	0.8443	0.8386	0.8500
	2012	0.8664	0.8597	0.8730
	2013	0.8890	0.8813	0.8965
	2014	0.9122	0.9035	0.9208
	2015	0.9360	0.9262	0.9457
	2016	0.9604	0.9495	0.9712
	2017	0.9855	0.9734	0.9975
	2018	1.0112	0.9979	1.0244
9 Point	2010	0.8216	0.8178	0.8254
	2011	0.8433	0.8384	0.8481
	2012	0.8655	0.8596	0.8715
	2013	0.8884	0.8812	0.8954
	2014	0.9118	0.9034	0.9201
	2015	0.9358	0.9262	0.9454
	2016	0.9605	0.9495	0.9714
	2017	0.9858	0.9735	0.9981
	2018	1.0118	0.9980	1.0255
10 Point	2009	0.7932	0.7884	0.7981
	2010	0.8153	0.8097	0.8209
	2011	0.8380	0.8317	0.8444
	2012	0.8614	0.8542	0.8685
	2013	0.8854	0.8774	0.8933
	2014	0.9100	0.9012	0.9188
	2015	0.9354	0.9256	0.9450
	2016	0.9614	0.9507	0.9720
	2017	0.9882	0.9765	0.9998
	2018	1.0157	1.0030	1.0284

MEDICAL Expon'l TRENDED		Severity Ratio (Avg Pd & Inc)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	Fitted	1.2867	1.2980	1.2757
5 Point	Fitted	1.1337	1.1368	1.1308
6 Point	Fitted	1.1125	1.1020	1.1229
7 Point	Fitted	1.1032	1.0819	1.1245
8 Point	Fitted	1.0996	1.0818	1.1172
9 Point	Fitted	1.1012	1.0821	1.1201
10 Point	Fitted	1.1106	1.0941	1.1269
MEDICAL Expon'l Severity Trend Factor		Sev Trend Factor (Avg Pd & Inc)	Sev Trend Factor (Incur)	Sev Trend Factor (Pd-20)
4 Point	2016	1.3848	1.4185	1.3525
	2017	1.3016	1.3271	1.2769
	2018	1.2233	1.2416	1.2055
5 Point	2016	1.1843	1.2042	1.1654
	2017	1.1468	1.1623	1.1319
	2018	1.1104	1.1219	1.0994
6 Point	2016	1.1590	1.1620	1.1561
	2017	1.1269	1.1292	1.1246
	2018	1.0956	1.0974	1.0939
7 Point	2016	1.1486	1.1394	1.1578
	2017	1.1187	1.1114	1.1259
	2018	1.0896	1.0841	1.0950
8 Point	2016	1.1449	1.1393	1.1503
	2017	1.1158	1.1114	1.1200
	2018	1.0874	1.0841	1.0905
9 Point	2016	1.1464	1.1396	1.1531
	2017	1.1170	1.1116	1.1222
	2018	1.0883	1.0842	1.0922
10 Point	2016	1.1551	1.1508	1.1593
	2017	1.1238	1.1204	1.1271
	2018	1.0934	1.0908	1.0958

MEDICAL Linear LR Trend Factor	LR Trend Factor (Avg Pd & Inc)	LR Trend Factor (Incur)	LR Trend Factor (Pd-20)
4 Point	2016	0.9563	0.9763
	2017	0.9578	0.9730
	2018	0.9627	0.9737
5 Point	2016	0.8373	0.8505
	2017	0.8644	0.8750
	2018	0.8931	0.9013
6 Point	2016	0.8195	0.8225
	2017	0.8500	0.8524
	2018	0.8821	0.8840
7 Point	2016	0.8114	0.8069
	2017	0.8432	0.8396
	2018	0.8769	0.8741
8 Point	2016	0.8074	0.8048
	2017	0.8400	0.8379
	2018	0.8743	0.8727
9 Point	2016	0.8065	0.8032
	2017	0.8393	0.8365
	2018	0.8738	0.8717
10 Point	2016	0.8094	0.8073
	2017	0.8416	0.8400
	2018	0.8756	0.8743
MEDICAL Expon'l LR Trend Factor	LR Trend Factor (Avg Pd & Inc)	LR Trend Factor (Incur)	LR Trend Factor (Pd-20)
4 Point	2016	0.9865	1.0105
	2017	0.9892	1.0086
	2018	0.9917	1.0066
5 Point	2016	0.8437	0.8579
	2017	0.8716	0.8833
	2018	0.9002	0.9095
6 Point	2016	0.8257	0.8278
	2017	0.8564	0.8582
	2018	0.8882	0.8897
7 Point	2016	0.8183	0.8117
	2017	0.8502	0.8447
	2018	0.8833	0.8789
8 Point	2016	0.8156	0.8116
	2017	0.8480	0.8447
	2018	0.8816	0.8789
9 Point	2016	0.8167	0.8119
	2017	0.8489	0.8448
	2018	0.8823	0.8790
10 Point	2016	0.8229	0.8198
	2017	0.8541	0.8515
	2018	0.8864	0.8843

MEDICAL Linear TRENDED LR	Base Policy Year	Trended LR (Avg Pd & Inc)	Trended LR (Incur)	Trended LR (Pd-20)
4 Point	2016	0.5644	0.5641	0.5647
	2017	0.5662	0.5649	0.5672
	2018	0.6086	0.6160	0.6014
	3 Yr Ave	0.5797	0.5817	0.5778
5 Point	2016	0.4942	0.4914	0.4970
	2017	0.5109	0.5080	0.5137
	2018	0.5646	0.5702	0.5593
	3 Yr Ave	0.5232	0.5232	0.5233
6 Point	2016	0.4837	0.4752	0.4923
	2017	0.5024	0.4949	0.5099
	2018	0.5577	0.5592	0.5562
	3 Yr Ave	0.5146	0.5098	0.5195
7 Point	2016	0.4789	0.4662	0.4916
	2017	0.4984	0.4875	0.5094
	2018	0.5544	0.5530	0.5557
	3 Yr Ave	0.5106	0.5022	0.5189
8 Point	2016	0.4765	0.4650	0.4881
	2017	0.4965	0.4865	0.5065
	2018	0.5527	0.5521	0.5535
	3 Yr Ave	0.5086	0.5012	0.5160
9 Point	2016	0.4760	0.4641	0.4880
	2017	0.4961	0.4857	0.5064
	2018	0.5524	0.5514	0.5534
	3 Yr Ave	0.5082	0.5004	0.5159
10 Point	2016	0.4777	0.4665	0.4890
	2017	0.4975	0.4877	0.5072
	2018	0.5536	0.5531	0.5540
	3 Yr Ave	0.5096	0.5024	0.5167

MEDICAL Expon'l TRENDED LR	Base Policy Year	Trended LR (Avg Pd & Inc)	Trended LR (Incur)	Trended LR (Pd-20)
4 Point	2016	0.5822	0.5839	0.5807
	2017	0.5847	0.5856	0.5837
	2018	0.6270	0.6368	0.6175
	3 Yr Ave	0.5980	0.6021	0.5940
5 Point	2016	0.4980	0.4957	0.5004
	2017	0.5152	0.5128	0.5174
	2018	0.5691	0.5753	0.5631
	3 Yr Ave	0.5274	0.5279	0.5270
6 Point	2016	0.4873	0.4783	0.4964
	2017	0.5062	0.4983	0.5141
	2018	0.5615	0.5628	0.5603
	3 Yr Ave	0.5183	0.5131	0.5236
7 Point	2016	0.4830	0.4690	0.4971
	2017	0.5026	0.4904	0.5147
	2018	0.5584	0.5560	0.5608
	3 Yr Ave	0.5147	0.5051	0.5242
8 Point	2016	0.4814	0.4689	0.4939
	2017	0.5013	0.4904	0.5120
	2018	0.5573	0.5560	0.5586
	3 Yr Ave	0.5133	0.5051	0.5215
9 Point	2016	0.4820	0.4691	0.4951
	2017	0.5018	0.4905	0.5130
	2018	0.5578	0.5561	0.5594
	3 Yr Ave	0.5139	0.5052	0.5225
10 Point	2016	0.4857	0.4737	0.4978
	2017	0.5049	0.4944	0.5152
	2018	0.5604	0.5594	0.5613
	3 Yr Ave	0.5170	0.5092	0.5248

INDEMNITY		(Avg Pd & Inc)	(Incur)	(Pd-20)
Severity				
Annual Trend				
4 Point	Linear	3.0%	3.2%	2.9%
5 Point	Linear	1.8%	1.9%	1.7%
6 Point	Linear	1.8%	1.8%	1.8%
7 Point	Linear	1.7%	1.5%	1.8%
8 Point	Linear	1.5%	1.4%	1.7%
9 Point	Linear	1.4%	1.3%	1.6%
10 Point	Linear	1.2%	1.1%	1.4%
4 Point	Expon'l	3.2%	3.5%	3.0%
5 Point	Expon'l	1.9%	1.9%	1.8%
6 Point	Expon'l	1.9%	1.8%	1.9%
7 Point	Expon'l	1.8%	1.6%	2.0%
8 Point	Expon'l	1.6%	1.4%	1.8%
9 Point	Expon'l	1.5%	1.3%	1.7%
10 Point	Expon'l	1.3%	1.1%	1.5%
MEDICAL				
Severity				
Annual Trend				
4 Point	Linear	5.6%	6.0%	5.2%
5 Point	Linear	3.1%	3.4%	2.8%
6 Point	Linear	2.7%	2.8%	2.6%
7 Point	Linear	2.5%	2.4%	2.6%
8 Point	Linear	2.4%	2.3%	2.4%
9 Point	Linear	2.4%	2.3%	2.4%
10 Point	Linear	2.4%	2.4%	2.5%
4 Point	Expon'l	6.4%	6.9%	5.9%
5 Point	Expon'l	3.3%	3.6%	3.0%
6 Point	Expon'l	2.8%	2.9%	2.8%
7 Point	Expon'l	2.7%	2.5%	2.8%
8 Point	Expon'l	2.6%	2.5%	2.7%
9 Point	Expon'l	2.6%	2.5%	2.8%
10 Point	Expon'l	2.8%	2.7%	2.9%

INDEMNITY		(Avg Pd & Inc)	(Incur)	(Pd-20)
Loss Ratio				
Annual Trend				
4 Point	Linear	-3.41%	-3.23%	-3.58%
5 Point	Linear	-4.56%	-4.50%	-4.61%
6 Point	Linear	-4.58%	-4.60%	-4.56%
7 Point	Linear	-4.67%	-4.84%	-4.52%
8 Point	Linear	-4.80%	-4.96%	-4.65%
9 Point	Linear	-4.90%	-5.05%	-4.76%
10 Point	Linear	-5.06%	-5.21%	-4.93%
4 Point	Expon'l	-3.21%	-3.01%	-3.40%
5 Point	Expon'l	-4.49%	-4.43%	-4.55%
6 Point	Expon'l	-4.50%	-4.52%	-4.47%
7 Point	Expon'l	-4.58%	-4.77%	-4.40%
8 Point	Expon'l	-4.70%	-4.90%	-4.53%
9 Point	Expon'l	-4.81%	-4.99%	-4.65%
10 Point	Expon'l	-5.00%	-5.16%	-4.83%
 MEDICAL				
Loss Ratio				
Annual Trend				
4 Point	Linear	-0.98%	-0.61%	-1.34%
5 Point	Linear	-3.34%	-3.06%	-3.62%
6 Point	Linear	-3.72%	-3.65%	-3.78%
7 Point	Linear	-3.89%	-3.99%	-3.81%
8 Point	Linear	-3.98%	-4.03%	-3.94%
9 Point	Linear	-4.00%	-4.07%	-3.94%
10 Point	Linear	-3.94%	-3.98%	-3.90%
4 Point	Expon'l	-0.25%	0.20%	-0.70%
5 Point	Expon'l	-3.16%	-2.85%	-3.46%
6 Point	Expon'l	-3.56%	-3.50%	-3.60%
7 Point	Expon'l	-3.71%	-3.86%	-3.58%
8 Point	Expon'l	-3.77%	-3.86%	-3.70%
9 Point	Expon'l	-3.75%	-3.85%	-3.65%
10 Point	Expon'l	-3.61%	-3.67%	-3.55%