

Basics of Medical Professional Liability Reserving

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Covered Risks

- Services that are performed at the covered entity
 - Hospitals
 - Clinics
 - Physician Groups
 - Managed entities (Captive)
- Employees involved in performing services
 - Physicians
 - Physician extenders
 - 3rd Party Physicians (Captive)
- Excess insurance/Reinsurance is written on a claims-made basis most of the time

Financing Vehicles and Considerations For Self-Insureds

- Nothing (Balance Sheet Item)
- Self Insured trust – May have restrictions on the use and withdrawal of funds
- Captive
 - Considerations in domicile selection
 - Most common jurisdiction is Cayman Islands
 - Stable regulation
 - Captive managers with expertise specific to medical malpractice
 - Cost of financial reporting requirements and company setup
 - Advantages
 - Allows for alignment of premium structure with desired incentives
 - Allows parent to write coverage for non employed professionals with admitting privileges
 - Great platform to bring different perspectives together to advance patient safety
 - Access to reinsurance markets
 - Unusual coverage options
 - Disadvantages
 - Premium outlay upfront rather than paper expense, hurts days cash on hand
 - Increased overhead cost

General Analysis Format

- Compile data
 - Can often come from multiple sources due to switching claim administration over time
 - Verify whether data is retained or total limits depending on intended use
 - Verify methodology for setting case reserves (with total limit or retained limit in mind)
 - Verify information about who is setting reserves and any changes in methodology
- Select Development Patterns
 - Smaller insureds often have limited credibility requiring supplemental benchmark information
 - If building occurrence triangles, be aware of losses from new exposures distorting existing accident periods
 - Building patterns at different limits sometimes appropriate due to volatility
- Determine costs per exposure
 - Consider occurrence or claims-made measurement
 - Consider credibility and external benchmarks
 - Involves selection of trend rate
 - Usually done at a basic limit to remove volatility
- Model policy framework (Initial expected losses)
 - Incorporate claims-made adjustments
 - Additions of exposures with prior retroactive dates
 - Adjust for limit profile

General Analysis Format (Continued)

- Apply methods and select ultimate losses
 - Additional discussion later
 - Helpful to build actual versus expected calculations to help inform speed of responsiveness to updated data
- Tail liability
 - Does it reside in the same place as the claims-made liability?
 - Is it funded or unfunded?
- Discount
 - Sometimes friction between client selected rates of return and actuary opinion of what is reasonable
 - Disclosure of material assumptions sometimes required here with opinion on reasonability or why you have no opinion
- Risk Adjustments?
- Allocations?
- Prospective Funding?

Exposure Base

- Industry Practice is generally acute care occupied bed equivalents
- Data generally collected
 - Occupied beds by type
 - Visits by type (ER, Urgent Care, Home Health, Other)
 - Deliveries
 - Inpatient and outpatient surgeries
 - Specialty Requests (Bariatric Surgeries)
 - Employed Physician FTEs
 - Resident FTEs
 - Square footage by type (for GL)
- Expansions/Improvements
 - Surgeries by type
 - Deliveries by risk level
 - Mapping of claims to exposure categories to calibrate relativities

Exposure Calculation Example

Accident Period Ending	Occupied Beds (average daily census)						Outpatient Visits					Physician FTEs	Resident FTEs	General Liability	Total Exposure Units
	Acute Care	LT Acute Care	Nursery	Psychiatric Care	Rehab	Births	Inpatient Surgery	Emergency Room	Urgent Care	Surgical	Other Outpatient				
12/31/06	393.9	11.6	27.8	47.6	14.4	5,046	10,206	61,941	30,854	12,382	121,329	36.9	150.7	57.3	1,893.7
12/31/07	398.4	11.7	24.6	46.7	13.4	4,498	10,394	64,277	32,373	10,562	114,109	49.5	156.5	56.4	1,872.5
12/31/08	395.8	11.3	23.5	40.8	16.9	4,365	11,194	66,797	31,679	10,767	139,807	80.0	156.5	57.3	1,985.0
12/31/09	373.4	12.3	22.3	42.7	14.6	4,107	11,272	67,237	18,907	10,748	166,464	51.5	159.7	64.6	1,842.5
12/31/10	372.3	12.0	21.4	43.4	13.2	3,995	11,548	68,245	21,452	10,864	184,187	55.0	161.5	66.3	1,861.3
12/31/11	383.9	12.1	21.9	43.9	14.1	4,047	9,465	69,456	24,929	12,409	197,426	123.0	185.4	66.3	2,111.6
12/31/12	384.4	12.3	22.8	46.6	13.5	4,302	9,530	69,044	30,584	13,215	147,868	92.4	186.0	66.1	2,032.3
12/31/13	384.3	11.7	23.8	44.0	12.9	4,570	9,362	69,999	34,566	13,640	146,026	79.3	188.4	66.3	2,030.8
12/31/14	377.7	14.6	25.5	46.3	14.7	4,673	9,505	74,967	37,683	12,642	152,147	86.5	188.6	63.1	2,082.6
12/31/15	387.1	14.4	26.2	50.7	14.8	4,978	9,145	78,695	37,702	13,108	137,974	95.3	189.8	63.8	2,163.0
12/31/16	391.8	13.7	27.0	51.2	14.5	5,019	9,616	85,649	36,021	12,996	149,725	101.3	191.1	63.8	2,225.5
12/31/17	410.6	13.4	28.0	50.8	15.7	5,209	10,057	89,423	36,311	12,515	164,778	102.6	190.6	65.9	2,299.6
Relativity	1.00000	0.28000	1.00000	0.50000	0.30000	0.12500	0.01670	0.00290	0.00150	0.00400	0.00050	3.30000	0.82500	1.00000	

Exposure Calculation Example (Continued)

Physician Class	Class Relativity	Total Physicians by Year											
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
EMPLOYED PHYSICIANS													
1	1.000	6.00	7.00	12.00	12.00	13.00	17.00	9.50	8.80	10.50	9.10	8.30	7.90
1A	0.700	1.00	1.00	2.00	4.00	5.00	5.00	1.00	0.20	0.00	0.00	0.00	0.00
1B	0.467	27.00	28.00	34.00	8.00	9.00	11.00	5.30	7.50	10.30	11.70	11.70	15.90
1C	0.140	7.00	8.00	8.00	5.00	4.00	17.00	13.50	13.30	14.00	18.90	15.70	16.60
2	1.400	6.00	8.00	17.00	7.00	8.00	7.00	4.60	4.40	5.00	5.00	5.00	5.00
3	1.800	0.00	0.00	3.00	3.00	3.00	3.00	3.00	3.00	2.70	3.00	3.00	3.00
4	2.200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	3.300	0.00	0.00	4.00	3.00	3.00	22.00	20.00	16.20	17.40	19.90	22.10	22.00
5A	1.400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.600	0.00	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
7	6.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	8.200	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTS													
1	1.000	18.00	18.00	18.00	19.00	19.00	18.00	18.00	18.60	18.00	18.50	20.10	20.00
1A	0.700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1B	0.467	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1C	0.140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1.400	26.00	27.00	27.00	27.00	27.00	32.00	34.00	34.60	33.60	32.80	32.30	31.90
3	1.800	4.00	4.00	4.00	4.00	5.00	7.00	7.00	7.10	7.20	7.00	7.10	7.00
4	2.200	15.00	17.00	17.00	18.00	18.00	20.00	19.00	18.60	18.00	18.10	18.20	18.50
5	3.300	17.00	17.00	17.00	17.00	17.00	20.00	20.00	20.50	21.50	22.10	22.10	22.00
5A	1.400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	6.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	8.200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Employed													
Total Counts		48.00	54.00	82.00	44.00	47.00	84.00	56.90	53.40	59.90	67.60	65.80	70.40
Total Class 1 FTEs		36.88	49.49	79.99	51.53	54.96	123.01	92.40	79.32	86.55	95.28	101.29	102.64
Residents													
Total Counts		80.00	83.00	83.00	85.00	86.00	97.00	98.00	99.40	98.30	98.50	99.80	99.40
Total Class 1 FTEs		150.70	156.50	156.50	159.70	161.50	185.40	186.00	188.39	188.55	189.77	191.07	190.56

Claims-Made Adjustment Calculation

Calculation of Claims-Made Factors at a \$500,000 Basic Limit

Accident Period	Pure Premium	Exposures		Pure Premium by Policy Period										Remaining Tail as of 05/31/17	Remaining Tail as of 05/31/18	
		Inception - 07/10	07/10 Forward	06/01/08 05/31/09	06/01/09 05/31/10	06/01/10 05/31/11	06/01/11 05/31/12	06/01/12 05/31/13	06/01/13 05/31/14	06/01/14 05/31/15	06/01/15 05/31/16	06/01/16 05/31/17	06/01/17 05/31/18			
06/01/08 - 05/31/09	703	7,918.5	8,360.7	288	200	162	25	11	7	7	4					
06/01/09 - 05/31/10	711	7,892.0	8,310.6		291	202	163	25	11	7	7	4				
06/01/10 - 05/31/11	718	8,668.7	9,061.7			294	205	165	25	11	7	7	4	4		
06/01/11 - 05/31/12	725	9,082.5	9,082.5				297	207	167	25	11	7	7	11	4	
06/01/12 - 05/31/13	732	9,020.3	9,020.3					300	209	168	26	11	7	18	11	
06/01/13 - 05/31/14	742	9,096.7	9,096.7						304	212	171	26	11	30	19	
06/01/14 - 05/31/15	757	9,345.1	9,345.1							310	216	174	27	57	30	
06/01/15 - 05/31/16	772	9,479.3	9,479.3								317	220	178	236	58	
06/01/16 - 05/31/17	788	9,626.1	9,626.1									323	225	465	240	
06/01/17 - 05/31/18	804	10,016.4	10,016.4										329		474	
06/01/18 - 05/31/19	820	10,076.0	10,076.0													
06/01/19 - 05/31/20	836	10,016.4	10,016.4													
Emergence Factor				0.410	0.285	0.230	0.035	0.015	0.010	0.010	0.005					
Indicated Losses (000s)				\$ 5,400	\$ 5,510	\$ 6,085	\$ 6,336	\$ 6,514	\$ 6,625	\$ 6,819	\$ 7,055	\$ 7,319	\$ 7,659	\$ 7,805	\$ 8,195	

- Older report years are truncated
- Emergence often based on looking at lags on a report year basis over a longer period
 - Dollar weighted vs count weighted

Application of Standard Methods

- Considerations
 - High severity, low frequency, subject to jury and court attitudes
 - Wide variance by jurisdiction
 - Self-insureds are often sensitive to large balance sheet shocks
 - Temptation to ignore “spurious” development at mature date points when selecting patterns
 - Size of expected losses relative to insured limits
- Methods typically relied upon
 - Development method usually quite volatile, although as usual a leading indicator
 - Generally do not move much below initial expectation until after 12 months maturity when at least all claims are in the system with consideration to size of risk
 - BF or Cape Cod type approach generally more reasonable for at least 3 to 5 years (36 to 60 months of maturity) when all claims have been vetted and outcome predicted with reasonably good information about expected outcomes
 - Frequency severity methods can add perspective, but are usually going to be very volatile as well

Thank You

