

# Survey of External Data Possibilities for Commercial Insurance

2013 CAS Ratemaking and Product Management Seminar

Commitment Beyond Numbers



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### **About the Presenter – Rob Walling**

- B.S. Secondary Math Education Miami University 1987
- Fellow of Casualty Actuarial Society (FCAS)
  - Committee Chair of Ratemaking, ERM and New Fellows
- Principal, Pinnacle Actuarial Resources, Inc.
- Areas of Focus Captives & Alternative Markets,
   Regulatory, Commercial Lines Ratemaking and
   Loss Reserving, Expert Witness, Legislative Cost
- Wife, Anne, and three kids
- Graduate of Miami University
- Lifelong Cincinnati Reds fan



### **Topics for Discussion**

- Internal Data
- Competitive Benchmarking
- Alternatives to Credit/Business Characteristics
- Property
- Commercial Auto
- Professional Liability



## **Internal Data**



#### **Internal Data**

- Rating
- Underwriting
  - Cancellation
  - Reinstatement
  - Endorsements
- Agency
- Marketing
- Loss Prevention

- Multiline information (auto, WC, umbrella, broadening endorsements, etc.)
- Affiliations/Associations
- Claims
- Application Information
- Billing Plan
- Payment history



### **Loss Control/Loss Prevention Opportunities**

- Loss Control Surveys
- Social Media/Customer Satisfaction



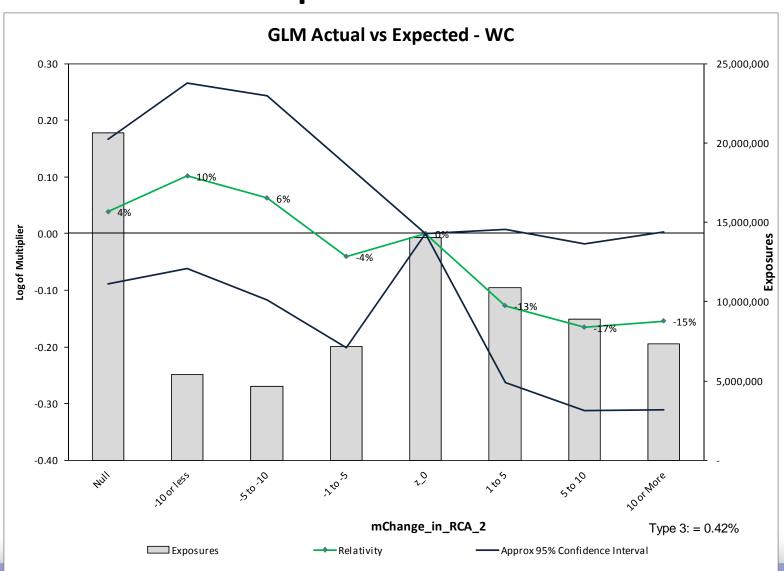
## Loss Control Survey as Scorecard Input

	Core Section	Questions	Points	# of N/A
1.	Frequency and Severity Trends	3	10	0
2.	Loss Prevention Direction	13	41	1
3.	Substance Abuse	1	4	AND THE SE
4.	Accident Investigation	2	6	0
5.	Claims Management	3	12	0
6.	Emergency Response	5	11	1
7.	Regulatory Compliance	14	21	6
8.	Liability	4	7	2
9.	Motor Vehicle	4	14	0
10.	Ergonomics	4	2	2
	TOTALS	53	128	12

Supplemental Section		Applicable Sections	Questions	Points	# of N/A
A.	Construction		20	50	5
B.	Distribution		6		
C.	Health Care		6		
D.	Quarries		12		
E.	Service Companies		4		
F.	Transportation		7		
	TOTALS		20	50	5

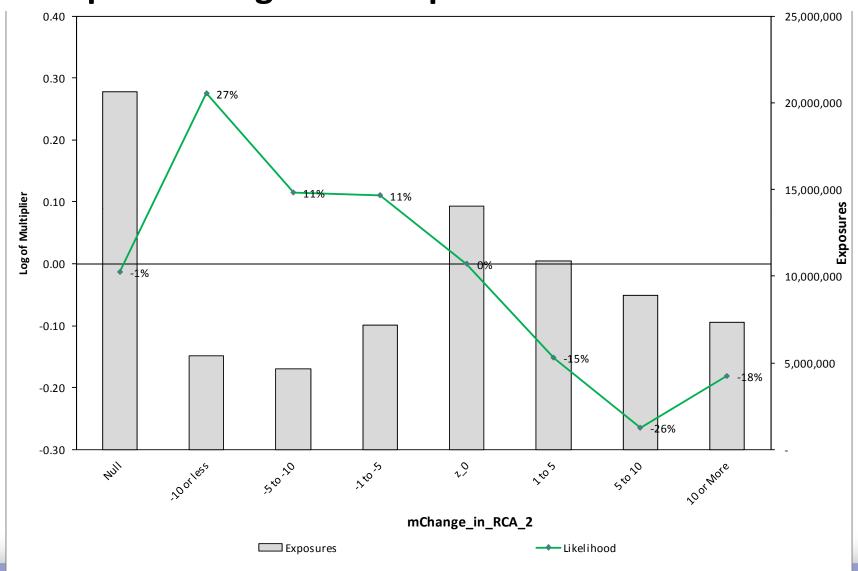


# Improvement in Loss Control Survey Score Leads to Better than Expected Losses





# Improvement in Loss Control Survey Score Leads to Superior Large Loss Experience





# **Competitive Benchmarking**



### **Commercial Auto Scorecard Example**

#### Company Rates applicable to Sentinel Insurance Company, LTD only:

Based on the following risk characteristics:

- 1. MVR Information
- 2. Average Driver Age
- 3. Youthful Composition
- 4. Length of Credit History.
- 5. Total Number of Trades
- Percentage of Balance Overdue of All Trades
- 7. Total Balance of Regular Trades
- Number of Public Records / Collections
- 9. Amount of Judgment
- 10. Average Number of Days Balance Overdue in the Past 3 Months
- 11. Number of Inquiries in the Past 9 Months
- 12. Years in Business (when financial information is not available)
- 13. Industry Classification
- Percentage of TTT Power Units
- 15. Prior 3-Year Loss Frequency by Size of Risks
- 16. Other risk-specific characteristics that are not contemplated above

use the applicable tier factor as a final step prior to rounding to determine the final rates.



### **Commercial Auto Example - Hartford**

Tier	Factor	Tier	Factor	 Tier	Factor
1	0.40	18	0.81	35	1.66
2	0.42	19	0.85	36	1.73
3	0.43	20	0.89	37	1.81
4	0.45	 21	0.92	 38	1.88
5	0.47	22	0.96	39	1.96
6	0,49	23	1.00	40	2.05
7	0.51	24	1.05	41	2.13
8	0.54	25	1.09	42	2.23
9	0.56	26	1,14	 43	2.32
10	0.58	27	1.19	44	2.42
11	0,61	28	1.24	 45	2.52
12	0.63	29	1.29	46	2.63
13	0.66	 30	1.35	47	2.74
14	0.69	31	1.40	48	2.86
15	0.72	32	1.46	49	2.98
16	0.75	33	1.53	50	3.11
17	0.78	 34	1.59		

#### **NOTICE THE LIFT!**

UNINSURED/UNDERINSURED MOTORISTS Factor is 1.00.



## **Trucking Example – Great West**

#### C. TIERED RATING

 Tier is determined at policy inception, renewal or anniversary based on the following characteristics. Number of "power units", length of time insured with company, accident history, age of driver(s), Motor Vehicle Record of driver(s), management safety ranking, and driver retention.

#### **Tiered Rating Multipliers**

	TIERED RATING MULTIPLIERS								
Tier	Multiplier	Tier	Multiplier	Tier	Multiplier	Tier	Multiplier	Tier	Multiplier
1	0.401	10	0.557	19	0.774	28	1.076	37	1.495
2	0.416	11	0.578	20	0.803	29	1.116	38	1.551
3	0.431	12	0.599	21	0.833	30	1.158	39	1.609
4	0.447	13	0.622	22	0.864	31	1.201	40	1.669
5	0.464	14	0.645	23	0.896	32	1.245	41	1.731
6	0.481	15	0.669	24	0.929	33	1.292	42	1.795
7	0.499	16	0.694	25	0.964	34	1.340	43	1.862
8	0.518	17	0.719	26	1.000	35	1.390	44	1.932
9	0.537	18	0.746	27	1.037	36	1.442	45	2.004



# **BOP Example - Travelers**

Master F	Pac Tier	Rating	Factors
----------	----------	--------	---------

Pricing	Pricing	
Track	Factor	
1	.52	
2	.55	
3	.58	
4	.61	
5	.64	
6	.67	
7	.70	
8	.73	
9	.76	
10	.79	
11	.82	
12	.85	
13	.88	
14	.91	
15	.94	
16	.97	
17	1.00	
18	1.03	
19	1.06	
20	1.10	

Pricing	Pricing
Track	Factor
21	1.14
22	1.16
23	1.20
24	1.25
25	1.30
26	1.35
27	1.40
28	1.45
29	1.50
30	1.60
31	1.70
32	1.80
33	1.90
34	2.00
35	2.10
36	2.25
37	2.40
38	2.55
39	2.70
40	2.85

# Sophisticated Model including:

- Claims History
- Years in Business
- Insured Values
- Credit Data
  - Score
  - Additional Factors
- Pay Plan/History
- Many Additional Factors



### **BOP Scorecard - Farmers**

Risk Characteristic Pricing Element	Response	Point Value
	New in Business	5
	Less than 1 Year	4
	1-2 Years	3
Years in Business at this Location	2-3 Years	1
reals in Dusiness at this cocation	3-4 Years	0
	4-5 Years	-1
	5-6 Years	-2
	6 Years or More	-3
Responsible for Parking Lot	Yes	2
responsible for Parking Lot	No	0
	25 Years or More	4
Wiring Year	20-24 Years	0
willing real	11-19 Years	-2
	10 Years or Less	-4



# **Underwriting Scorecard - Farmers**

		1.00
	Attached to Habitational Structure	10
ocation of Business	Stand-alone Building	3
Evolution of Euromood	Strip Shopping Center	0
	Enclosed Mall	-3
	21-24 Hours	10
Hours of Operation Open to Public	16-20 Hours	5
	12-15 Hours	0
	Less than 12 Hours	-5
	Over 10%	10
Percentage of Sales from Catering Services	1-10%	5
	None	0
	More than 20%	5
Total Percent of Sales from Liquor Sales	1-20%	2
	None	0
Drive Thru	Yes	0
SHVE THE	No	0
Credit Score	All Responses	0



# **Underwriting Scorecard - Farmers**

#### Debit or Credit Factors

	Poir	nt Value:	S	Debit or Credit Factors
Over		70	points	1.15
66	to	70	points	1.14
61	to	65	points	1.13
56	to	60	points	1.12
51	to	55	points	1.11
46	to	50	points	1.10
41	to	45	points	1.09
36	to	40	points	1.08
31	to	35	points	1.07



# Alternatives to Credit/ Business Characteristics



#### **Insured Characteristics**

- Years in Business vs. Year on Risk (Tenure)
- Prior Claims
- Collateral Policies/Endorsements
- Years at Current Premises
- On-Site Owner vs. Absentee
- Payment History (NSF, Cancelation Notice, Reinstatement)
- Type of Company (S-Corp, C Corp, LLC, Sole Proprietor, etc.)



### **BOP Insured Characteristics Example**

#### SPECTRUM TIERS PROGRAM GUIDELINES

	Super Preferred	Preferred Plus	Preferred	Standard	Non Standard
% Deviation	-40	-25	-15	0	+15
Eligible Program	Contractors	Contractors	Contractors	Contractors	Contractors
Eligible Classes	N/A	*DI-1 and DI-2	*DI-1, DI-2, and DI-3	DI-3 and DI-4 plus any DI-1 and DI-2 that fail to meet criteria of Preferred and Preferred Plus	DI-3 and DI-4 plus any DI-2 and DI-2 that fail to meet critoria of Preferred and Preferred Plus
Misimum Years in Business	N/A	10 or more	5 or more	3 or more	Less than 3
Number of Employees	N/A	10 or more	7 or more	4 or more	Less than 4
Lots Experience per Location (see below note 1)	N/A	No Losses in the current or prior three years	No more than 2 losses in the current and prior three year period	No more than 3 losses in the current and prior three year period	More than 3 losses in the current and prior three year period
Minimum Policy Premium after Application of Deviation	N/A	\$5,000	\$2,500	N/A	N/A

Desirability index is a company assignment to class based on the historical performance of the class
combined with the company's desire to target business in that class. The class codes on the previous page
show their respective Desirability Index. Given the severity potential presented by all these class codes,
the Super Preferred rate tier is not available.



### **Years in Business**

#### Point Value Table

Risk Characteristic Pricin Element	g Response	Point Value
	New in Business	5
	Less than 1 Year	4
	1-2 Years	3
Years in Business at this	2-3 Years	1
Location	3-4 Years	0
	4-5 Years	-1
	5-6 Years	-2
	6 Years or More	-3



#### **Years in Business + Prior Claims**

#### MASTER PAC RATING TIER VIRGINIA EXCEPTION PAGE

#### CALCULATE TIER PLACEMENT BY MULTIPLYING - A \* B \* C.

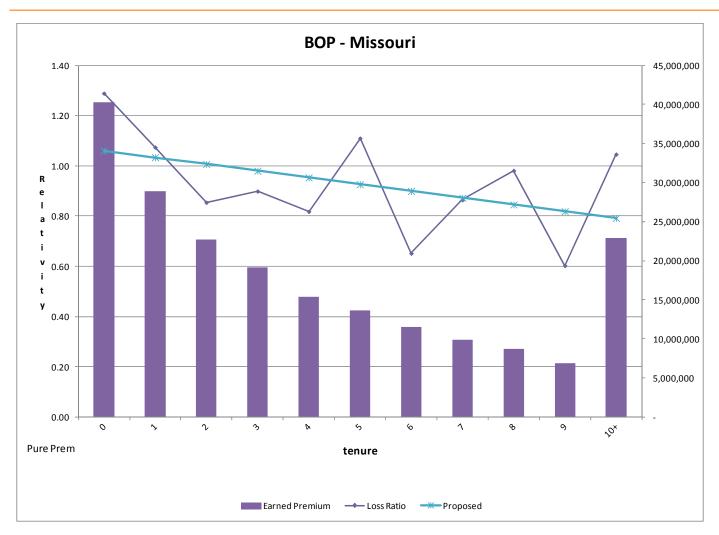
(A) Number and Size of Losses	
None	0.72
1 loss < \$5,000	1.01
1 loss ≥ \$5,000	1.22
2 losses, each loss < \$5,000	1.40
2 losses, one loss < \$5,000 & one loss≥ \$5,000	1.56
2 losses, each loss≥ \$5,000	1.70
3 losses, each loss < \$5,000	1.83
3 losses, two losses < \$5,000 & one loss≥ \$5,000	1.96
3 losses, one loss < \$5,000 & two losses≥ \$5,000	2.07
3 losses, each loss≥ \$5,000	2.18

(B) Y	ears in Business		
Г	Years	No Losses	1 or more losses
	0-1 years	1.30	1.12
	2-4 years	1.15	1.04
	5-15 years	1.00	1.00
1	6-20 years	0.96	0.96
	21+ years	0.90	0.90

(C) TIV Threshold		
Years in Business	Account Size	
0 to 4	≤TIV Threshold	1.13
	>TIV Threshold	1.02
5+	≤TIV Threshold	1.12
	>TIV Threshold	0.92



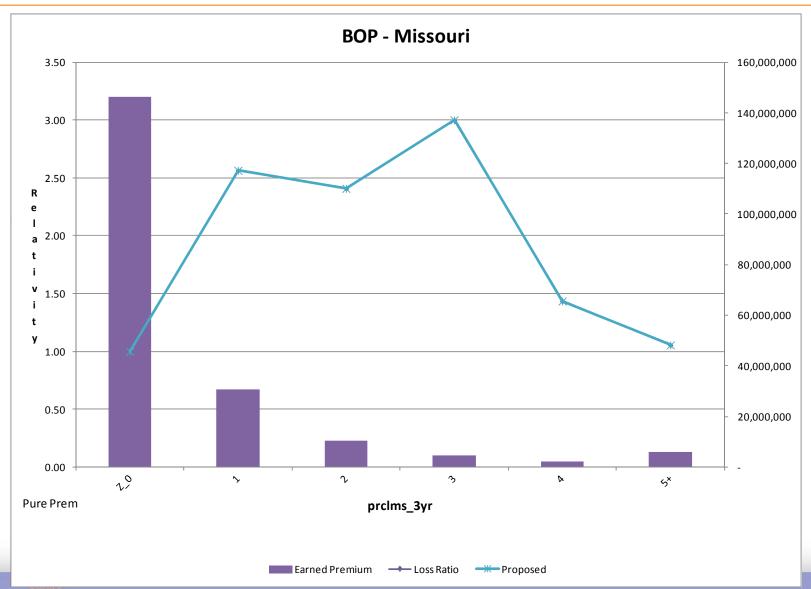
#### **Tenure**



Does this leave money on the table?

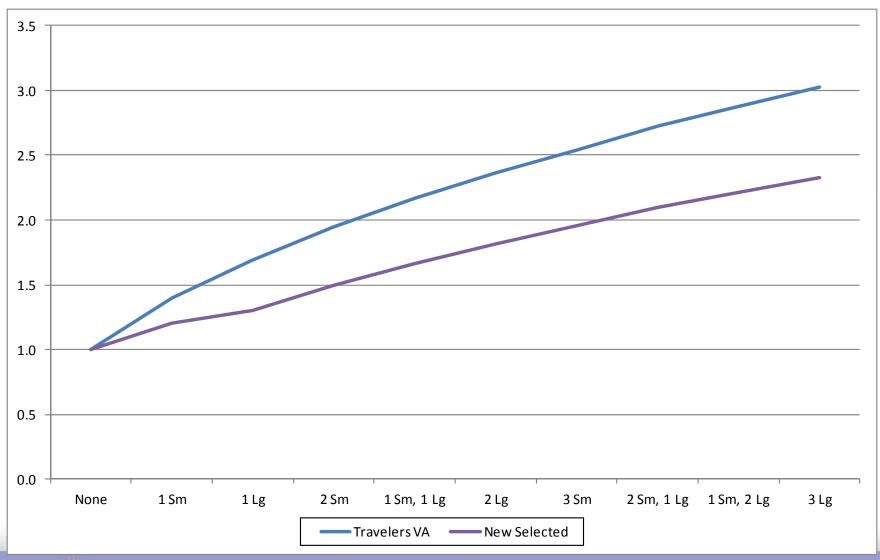


#### **Prior Claims**





### **Prior Claims**





# **Multiple Policy Discounts**

Categories	Discount applied to the Businessowners Policy
Commercial Automobile Policies Commercial Automobile Policies (excluding Garage Liability and Dealers Blanket).	8%
Commercial Umbrella Policies Commercial, Econ-O-Pak and Habitational Umbrella policies.	4%
Workers Compensation Policy	4%
Life, Health or Annuity Policies  The following policies written on an owner, partner or corporate officer of the business:  Life policy (nongroup) with a face amount of \$100,000 or more or Simplified Issue Life policy with a face value of \$50,000 or more; or  Annuity policy with a combined cash value exceeding \$10,000 or more; or  Disability Income policy with a monthly benefit of \$1,000 or more; or  Long Term Care policy.	2%
<ul> <li>The following policies written on an owner, partner or corporate officer of the business:</li> </ul>	
<ul> <li>Annuity or Retirement Plan with a combined cash value exceeding \$10,000</li> </ul>	
Personal Policies A Private Passenger Automobile, Homeowners, Mobile Homeowners or Dwelling Fire policy which receives a Personal Lines Multi-Policy Discount for an owner, partner or corporate officer of the business.	2%



### **Insured Characteristics**

#### 2. Rate Modifiers

a.	Years in Premises Modifier. If the insured has conducted business for 3 years or more at the current
	premises, multiply the applicable rates for Building, Business Personal Property and General Liability for
	that premises by:

b.	On Site Owner Modifier. (Not applicable to Lessor's Risk) If the owner of the business is working at an
	insured premises during the daily prime or peak business hours actively managing the business,
	multiply the applicable rates for Building, Business Personal Property and General Liability for that
	premises only by:



# **Property**



## **Property Characteristics**

- Building Age
- Building Type Sole Occupant, Mall, Strip Mall
- Central Alarm
- Validation of Total Insured Values
- Inspection Data (Real Estate and Prior Claims)
- Hazard Zones (Flood, Brush Fire, Coast/Wind, Sink Holes, Earthquake)



# **Commercial Auto**



#### VINs, MVRs and Prior Claims

- VIN Decoding
  - Well established
  - New products related to trailers, equipment modifications, etc.
- MVRs
  - Several vendors
  - Key question Ordering Protocols Who? How often?
- Prior Claims
  - Commercial C.L.U.E. gaining traction



### Federal Motor Carrier Safety Administration-Safety Measurement System

- Replaces SAFER
- Scores companies in several categories
  - Unsafe Driving (Speeding, reckless, lane changes)
  - Fatigued Driving/Hours of Service
  - Driver Fitness/Training
  - Controlled Substances/Alcohol
  - Vehicle Maintenance
  - Cargo-Related (Spills, HazMat)
  - Crash Experience



### **SMS Basic Information**

Legal Name: DBA Name:	Ka Bulk Transport Llc Klemm Tank Lines	Vehicle Miles Traveled VMT Year:	d:	43,900,000 2010
DOT#:	171830	Power Units:		592
MC or MX#:	MC-147216	DUNS Number:		2-320-3300
Address:	2204 Pamperin Rd	Drivers:		665
	Green Bay, WI 54313-8931	Carrier Operation:		Interstate
Telephone:	(920) 434-6343	Passenger:		No
Fax:	(800) 553-6329	Subject to Placardable	e HM Threshold:	Yes
Email:	teresas@klemmtanklines.com	HHG: New Entrant		No No
		New Entrant		No
Operation Cla	assification:			
AUTHORIZED FOR	R HIRE	EXEMPT FOR HIRE	PRIVAT	E PROPERTY
PRIVATE PASSENGER, BUSINESS		PRIVATE PASSENGER, NON-BUSINESS	S MIGRAI	TI
U. S. MAIL		FEDERAL GOVERNMENT	STATE	GOVERNMENT
LOCAL GOVERNMENT		INDIAN TRIBE	OTHER	
Cargo Carrie	d:			
GENERAL FREIG	нт	HOUSEHOLD GOODS	METAL; SHEETS, COILS, ROL	LS
MOTOR VEHICLE	s	DRIVE AWAY/TOWAWAY	LOGS, POLES, BEAMS, LUMB	ER
BUILDING MATER	RIALS	MOBILE HOMES	MACHINERY, LARGE OBJECT	S
FRESH PRODUCE	E	X LIQUIDS/GASES	INTERMODAL CONTAINERS	
PASSENGERS		OIL FIELD EQUIPMENT	LIVESTOCK	
GRAIN, FEED, HA	λΥ	COAL, COKE	MEAT	
GARBAGE, REFU	SE, TRASH	U.S. MAIL	X CHEMICALS	
COMMODITIES D	RY BULK	X REFRIGERATED FOOD	BEVERAGES	
PAPER PRODUCTS		UTILITY	FARM SUPPLIES	
CONSTRUCTION		WATER WELL	OTHER	
CONSTITUTION		THATER TIELE	OTTLER	



#### **SMS Basic Information**

Vehicle Type Breakdown						
Vehicle Type	Owned	Term Leased	Trip Leased			
Straight Trucks						
Fruck Fractors						
Trailers*	22					
Hazmat Cargo Tank Trailers*	740	0				
Hazmat Cargo Tank Trucks	380	212				
Motor Coach						
School Bus 1-8 Passengers						
School Bus 9-15 Passengers						
School Bus 16+ Passengers						
Mini-Bus 16+ Passengers						
Van 1-8 Passengers						
Van 9-15 Passengers						
Limousine 1-8 Passengers						
Limousine 9-15 Passengers						
Limousine 16+ Passengers						

<sup>\*</sup> Indicates power units not used by the Carrier Safety Measurement System when calculating total power units.



### **SMS Scoring**

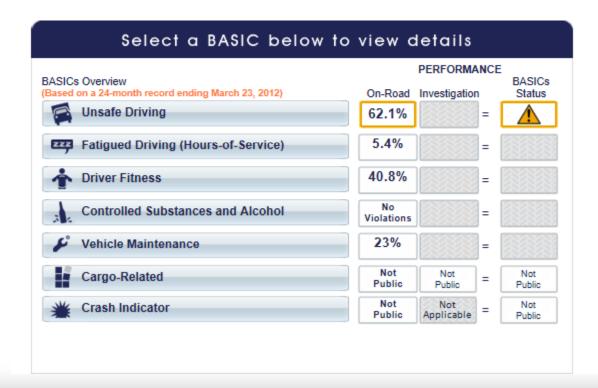
#### KA BULK TRANSPORT LLC

DOT#:171830



#### Welcome to the Motor Carrier Safety Measurement System

The SMS provides an assessment of a motor carrier's on-road performance and investigation results within the Behavior Analysis and Safety Improvement Categories (BASICs). Assessments cover 24 months of activity and results are updated monthly. For current Motor Carrier Safety Ratings visit SAFER and for current operating authority and insurance information visit Licensing and Insurance (L&I) system.



SUMMARY OF ACTIVITIES		
	Number	OOS Rate
Total Inspections:	911	
Vehicle Inspections:	715	9 %
Driver Inspections:	911	1 %
Hazardous Materials Inspections:	774	2 %
HM Placard Inspections:	747	2 %
Total Crashes:	40	
Tow-aways:	39	
Injuries/Fatalities:	19	
RECENT INVESTIGATIONS		
The following are up to five most re-	cent inves	_
Intervention Type		Date
Non-Ratable Review	(	9/2/2010
CTFR Only	5	/29/2008
CR And Security Contact Review	1	/16/2008
CTFR Only	1	/16/2008
Compliance Review	3	/29/2002



# **SMS Unsafe Driving Detail**

#### **UNSAFE DRIVING VIOLATIONS**

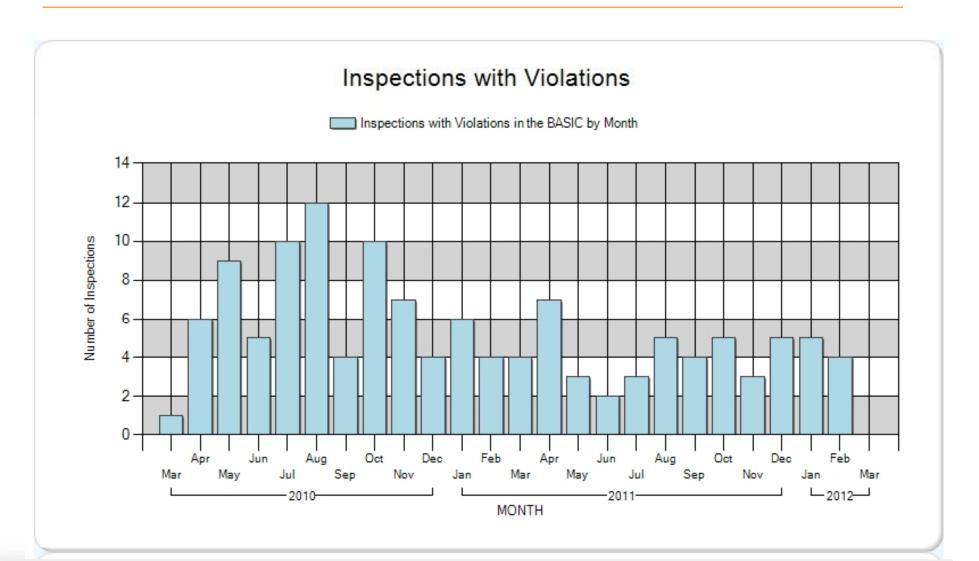
Violatio	Description	# Total Violations	# OOS Violations	Violation Weight
392.16	Failing to use seat belt while operating CMV	25	0	7
392.2C	Failure to obey traffic control device	10	0	5
392.2FC	Following too close	9	0	5
392.2LC	Improper lane change	6	0	5
392.2LV	Lane Restriction violation	3	0	3
392.2P	Improper passing	1	0	5
392.2R	Reckless driving	1	0	10
392.2S	Speeding	39	0	5
392.2-SLLS1	State/Local Laws - Speeding 1-5 miles per hour over the speed limit	18	0	1
392.2-SLLS2	State/Local Laws - Speeding 6-10 miles per hour over the speed limit	17	0	4
392.2-SLLS3	State/Local Laws - Speeding 11-14 miles per hour over the speed limit	1	0	7
392.2-SLLSWZ	State/Local Laws - Speeding work/construction zone	1	0	10
392.2Y	Failure to yield right of way	2	0	5
392.71(a)	Using or equipping a CMV with radar detector	1	0	5
397.13	Smoking within 25 feet of HM vehicle	1	0	1

#### INSPECTION HISTORY

	Report			Vehicle			Measure		
	Inspection Date	#	ST	Plate #	Lic ST	Туре	Severity Weight (A)	Time Weight (B)	Time Severit Weight (AxB)
1	2/27/2012	WI2224001581	WI	54914W	WI	Truck Tractor	7	3	21
	Violation: 392.16 Failing to use seat belt while operating CMV (Non-OOS) 7								
2	2/25/2012	MO00SD016139	MO	20301W	WI	Truck Tractor	4	3	12
	Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit (Non-OOS) 4								



## **SMS Unsafe Driving Detail**



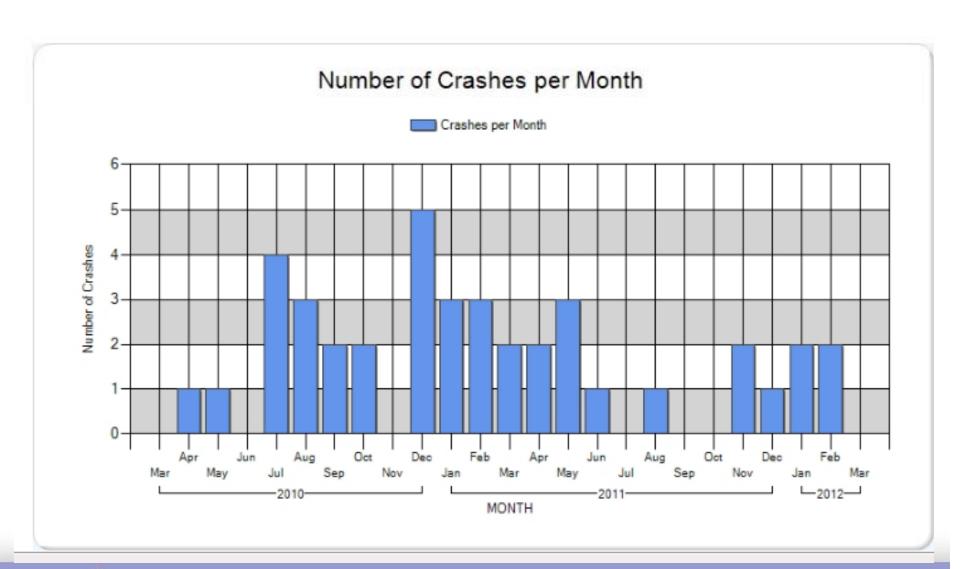


# **SMS Crash Detail**

CRASH ACTIVITY DETAIL(List of vehicles involved in crashes)													
	Report			Vehicle		Crash				Measure			
	Date	#	Lic ST	Vh ST	Plate	Fata	Inj.	Tow	Spill	Sev. Wt. (A)	Time Wt (B)	Time Sev. Wt. (AxB)	
1	2/17/2012	WI0000065927	WI	W	65499W	0	1	Y	N	2	3	6	
2	2/16/2012	W10000065902	WI	W	56553W	0	0	Y	N	1	3	3	
3	1/17/2012	WI0000065631	WI	W	81498	0	0	Y	N	1	3	3	
4	1/2/2012	IN0901755802	IN	W	50030W	0	2	Y	N	2	3	6	
5	12/4/2011	KY0071087121	IN	W	27495W	0	1	Y	N	2	3	6	
6	11/17/2011	MN0113220203	MN	W	57841W	0	0	Y	N	1	3	3	
7	11/18/2011	WI0000065228	WI	W	22799W	0	1	Y	N	2	3	6	
8	8/5/2011	WI0000064522	WI	W	81405	0	1	Y	Y	3	2	6	
9	6/13/2011	MN0111640139	WI	W	48099W	0	1	Y	N	2	2	4	
10	5/25/2011	IN0901652260	IL	IL	P642656	0	1	Y	N	2	2	4	
Go	Go to Page: 1 💌 Vehicles per page: 10 💌 Displaying 1 - 10 of 40 Vehicles												



#### **SMS Crash Detail**





#### **Telematics**

- If we can develop data repositories of things like
  - Vehicle registrations (Polk)
  - VIN characteristics (Polk)
  - Driving records (Polk)
  - Vehicle inspection results (SAFER)
  - Prior claims (HLDI, Lexis-Nexis)
- Why is it so far fetched think there will be an industry aggregator of telematics data and/or "industry" models.
- Any of these organizations, as well as several others (ISO, Evogi, Telogis, Drive Cam) are likely candidates.



#### Customer Center Dashboard





- SaaS private labeled Customer Center
  - Personalized account management/reporting
  - FAQ's and support information
- Performance feedback configurable dashboard
- Detailed historical view of driving behavior
- Personal account management functionality
- Integration point with Carrier Center for support

**Premium Features Available** 

- Optional value-add service
  - -MySafeTeen & MySafeSenior
- Integrated smart-phone applications
- Email and text alerts



# **Professional Liability**



### **Hospital Professional Data**

- Centers for Medicare & Medicaid Services (CMS) Hospital Quality Initiative
- Captures information on over 4,000 Medicarecertified hospitals

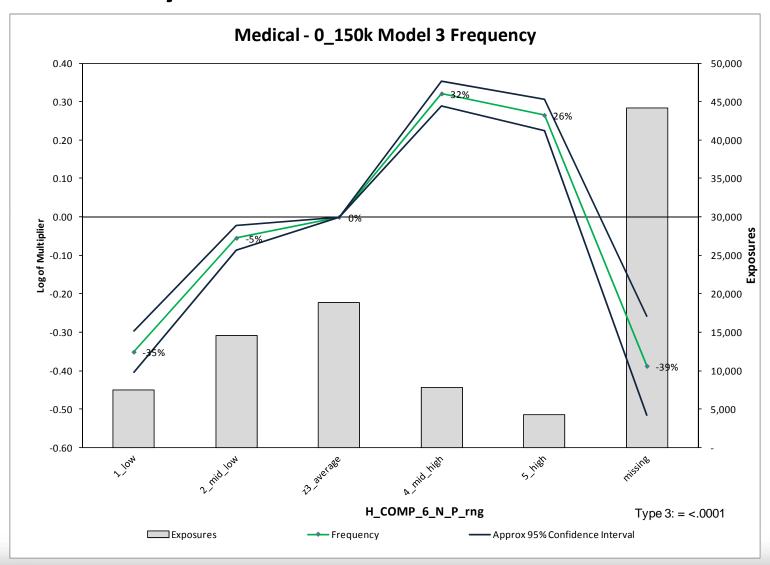


## (CMS) Hospital Quality Initiative

- Focused on:
  - Timely and Effective Care
  - Readmissions, Complications, and Deaths
  - Survey of Patients' Hospital Experiences (HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems))
  - Number (and \$) of Medicare patients
- Contains lots of information on patient communication and "never events"

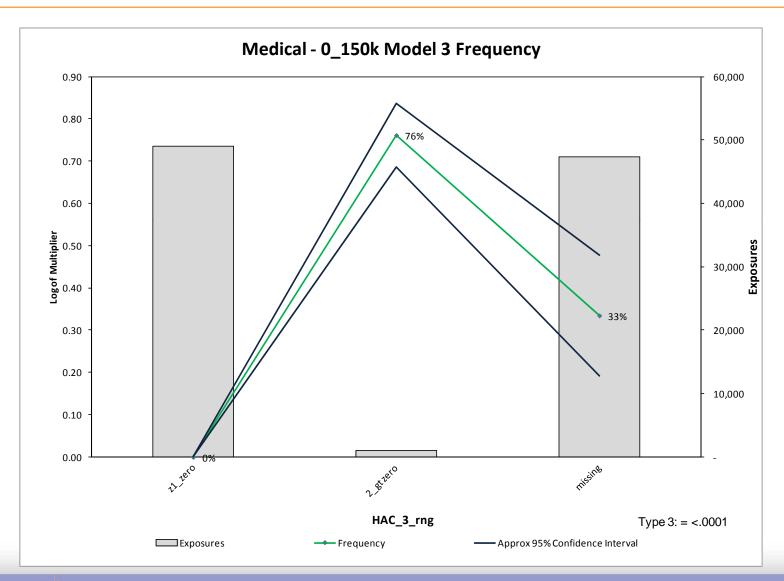


# Patients not given information about what to do during their recovery at home.



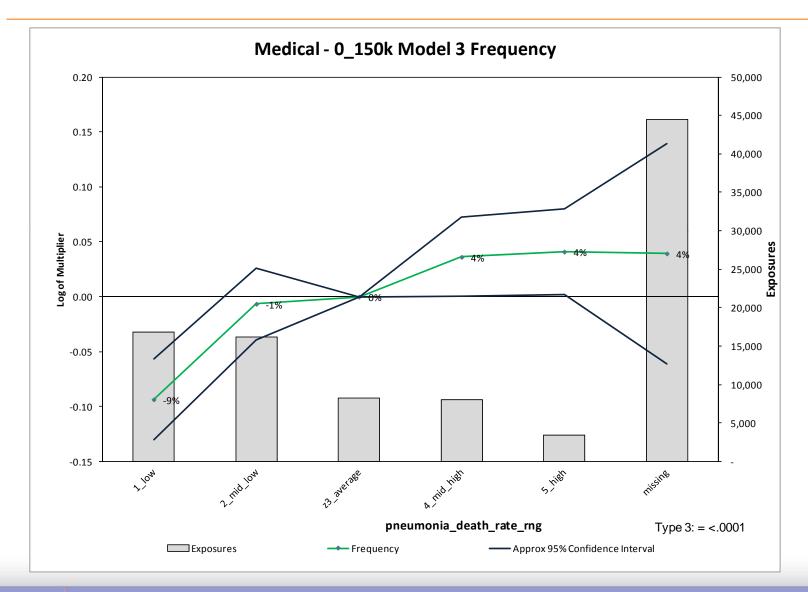


### **Blood Incompatibility Claims**



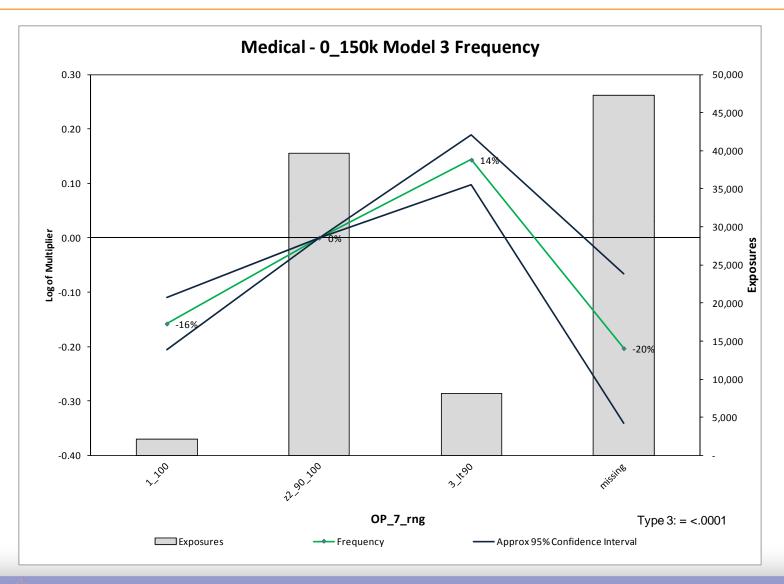


#### **Pneumonia Death Rate**





#### Patients Receiving "Right Antibiotic"





#### **Thank You for Your Attention**

**Robert J. Walling** 

309.807.2320

rwalling@pinnacleactuaries.com



