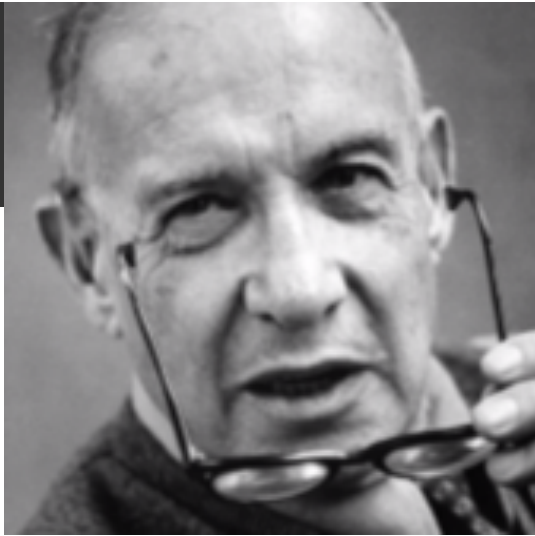




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Charging Up Your Safety Program Evaluation

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Peter Drucker

The Practice of Management (1954)

**“You Can’t Manage What
You Can’t Measure”**

**“If You Can’t Measure It,
You Can’t Improve It”**

The Evaluation Process

Measure
Performance

Discover
Weaknesses

Amend &
Improve

Measuring Performance

- To evaluate a program, you need a measure of performance
 - ❖ What is typically measured?

Collisions/
Accidents

DOT
Crashes

Breakdowns

Incidents

Injuries

\$\$

Basic Evaluation Metrics

▣ Foundational events

- ❖ Crashes/Incidents
- ❖ Injuries
- ❖ Breakdowns

▣ Typical evaluation metric

- ❖ Frequency

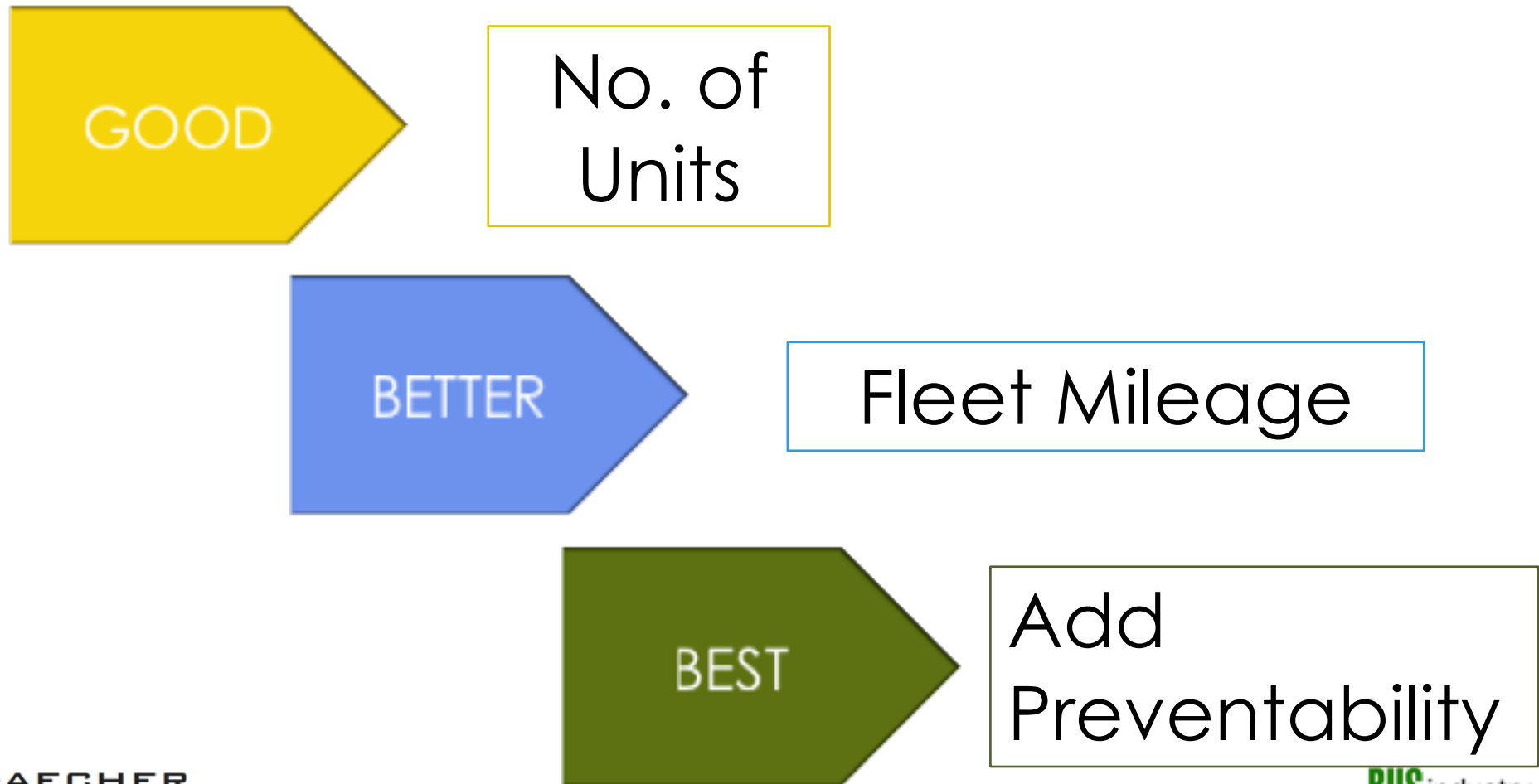
Frequency

Type of Collision Event	Policy Year				
Description	2014/15	2015/16	2016/17	2017/18*	Total
Struck vehicle in rear	1	1		2	4
Struck parked vehicle	1	3	3	1	8
Struck pedestrian, bicycle		1			1
Struck object or animal	1		1	2	4
Backed into vehicle or object		1	1		2
Intersection accident	3	6	6	3	18
Sideswipe or lane change	4	8	2	1	15
Rollover or overturned vehicle			1		1
Injured while entering or leaving vehicle				2	2
Our vehicle struck in rear	1				1
Other - comprehensive		1			1
Passenger injury not otherwise classified	1		1		2
Total	12	21	15	11	59

Typical insurance loss run frequency chart. Frequency tells you nothing without a normalizing/exposure factor.

Normalizing Frequency

Normalizing measures (collisions/incidents)



Samples – Collisions/incidents

No. of
Units

Incidents
per 100
units

$$\frac{\text{Frequency} \times 100}{\# \text{ actual units}}$$

Fleet
Mileage

Incidents
per million
miles

$$\frac{\text{Frequency} \times 1,000,000}{\text{actual fleet miles}}$$

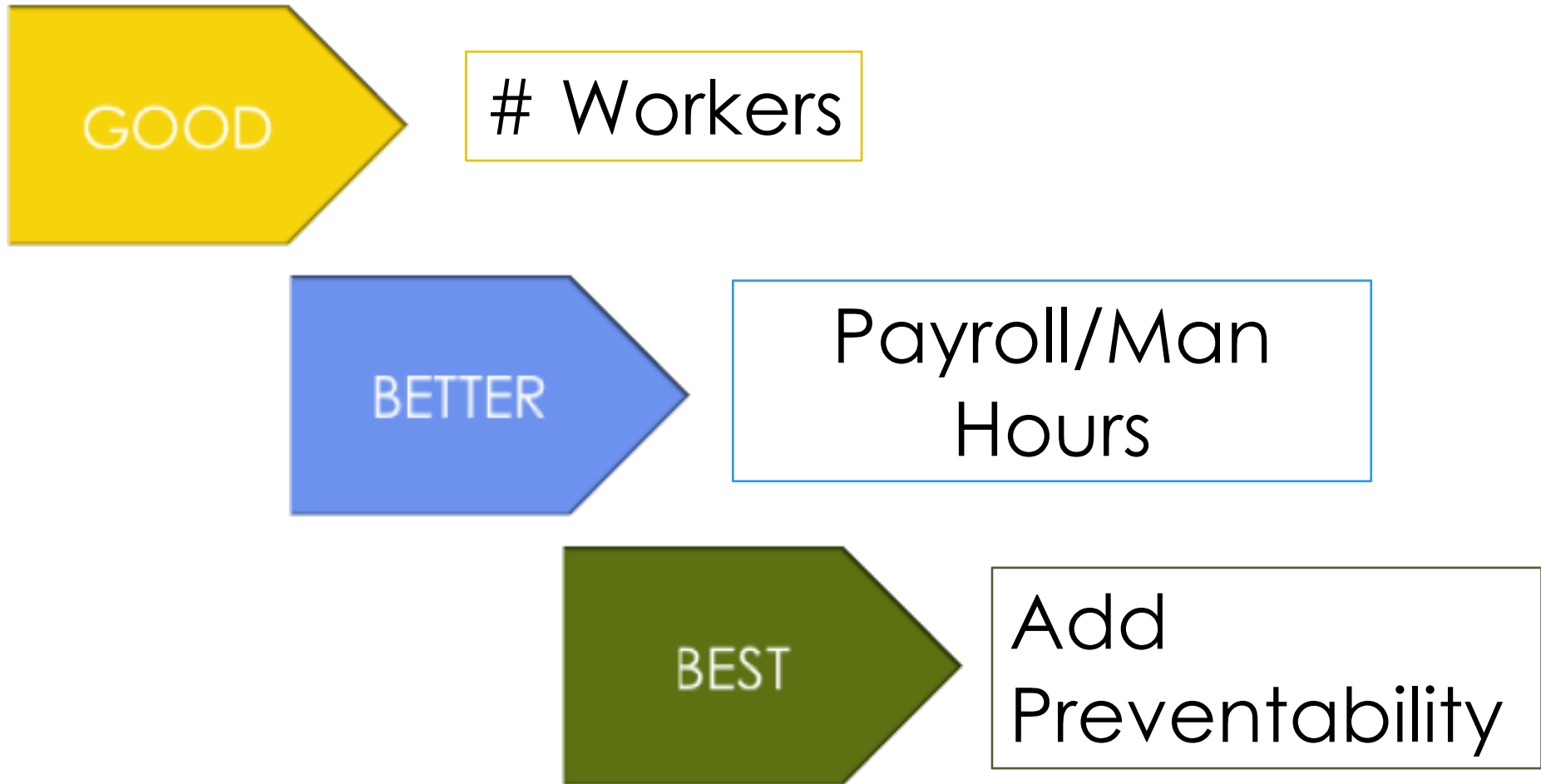
Example:
4 incidents; 100k miles

$$\frac{4}{100,000} = .00004$$

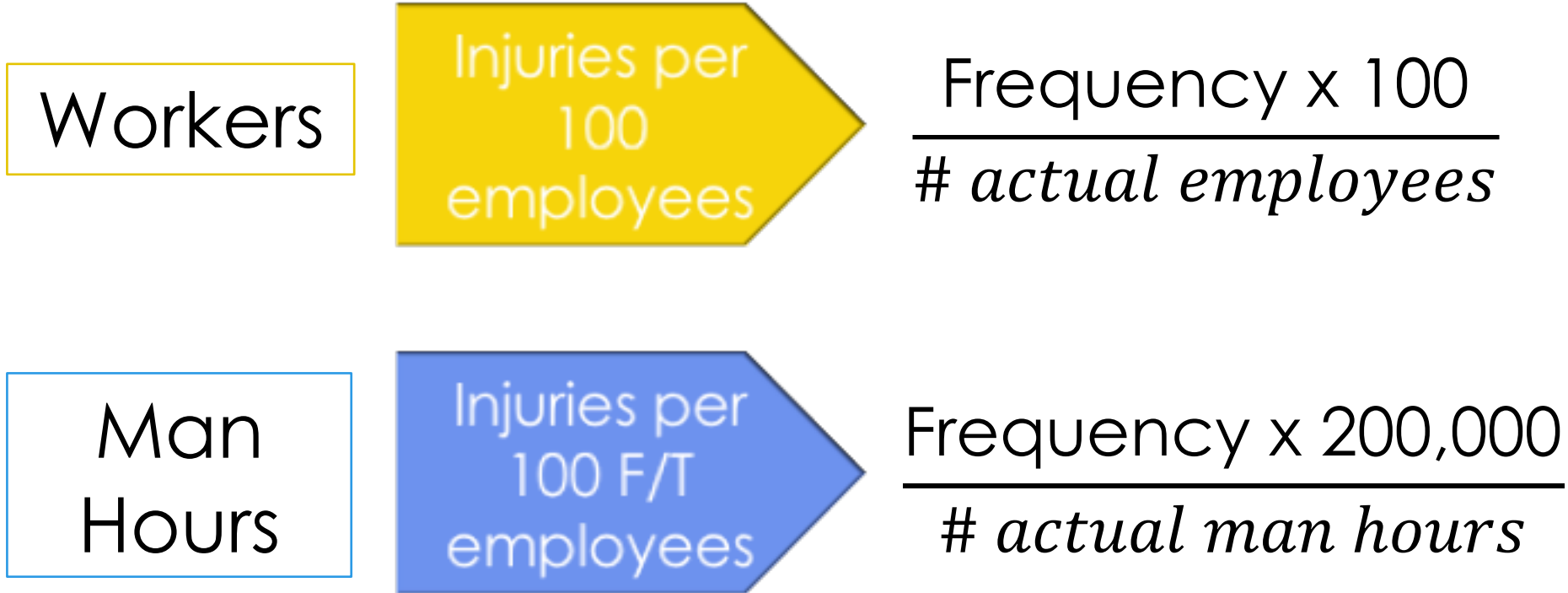
$$\frac{4 \times 1,000,000}{100,000} = 40$$

Normalizing Frequency

Normalizing measures (injuries)



Samples – Injuries



Example:
2 injuries; 80,000 man
hours

$$\frac{2}{80,000} = .000025$$

$$\frac{2 \times 200,000}{80,000} = 5$$

Normalizing Frequency

Normalizing measures (breakdowns)

GOOD

No. of Trips

BETTER

Fleet Mileage

BEST

Add
Preventability

Samples – breakdowns

Trips

breakdowns
per 100 trips

$$\frac{\text{Frequency} \times 100}{\# \text{ actual trips}}$$

Mileage

Breakdowns
per million
miles

$$\frac{\text{Frequency} \times 1,000,000}{\text{actual mileage}}$$

Example:

2 breakdowns; 100k miles

$$\frac{2}{100,000} = .00002$$

$$\frac{2 \times 1,000,000}{100,000} = 20$$

Evaluation = More than Frequency

- ▣ Frequency analysis judges overall performance
- ▣ Need to track and evaluate other available metrics to find detailed opportunities
 - ❖ Where are the weaknesses?
 - ❖ Where can we do better preparing drivers?
 - ❖ Are there patterns?



Success Is In The Details

Type of Collision Event	Policy Year				Total
	2014/15	2015/16	2016/17	2017/18*	
Description					
Struck vehicle in rear	1	1		2	4
Struck parked vehicle	1	3	3	1	8
Struck pedestrian, bicycle		1			1
Struck object or animal	1		1	2	4
Backed into vehicle or object		1	1		2
Intersection accident	3	6	6	3	18
Sideswipe or lane change	4	8	2	1	15
Rollover or overturned vehicle			1		1
Injured while entering or leaving vehicle				2	2
Our vehicle struck in rear	1				1
Other - comprehensive		1			1
Passenger injury not otherwise classified	1		1		2
Total	12	21	15	11	59

Generalized categories tell you nothing. Must have details! "Struck object" could really have been while backing, so backing would be the primary concern. "Struck parked car" could be while turning at Intersection, which should be primary concern.

Identifying Opportunities & Weaknesses

- Must have detailed and accurate collision/incident data
 - ❖ Break incidents down and categorize: Comb for trends and outliers to identify areas where enhanced training may be necessary
- Data may provide actionable insight into your operations that can improve performance

If you have basic incident records, you can retroactively develop the data for a desired timeframe

Examples - Actionable Insight

- ▣ Data point: Day of incidents



Time-oriented safety reminders

- ▣ Data point: Time of incidents



Trip schedule considerations

- ▣ Data point: Time on task



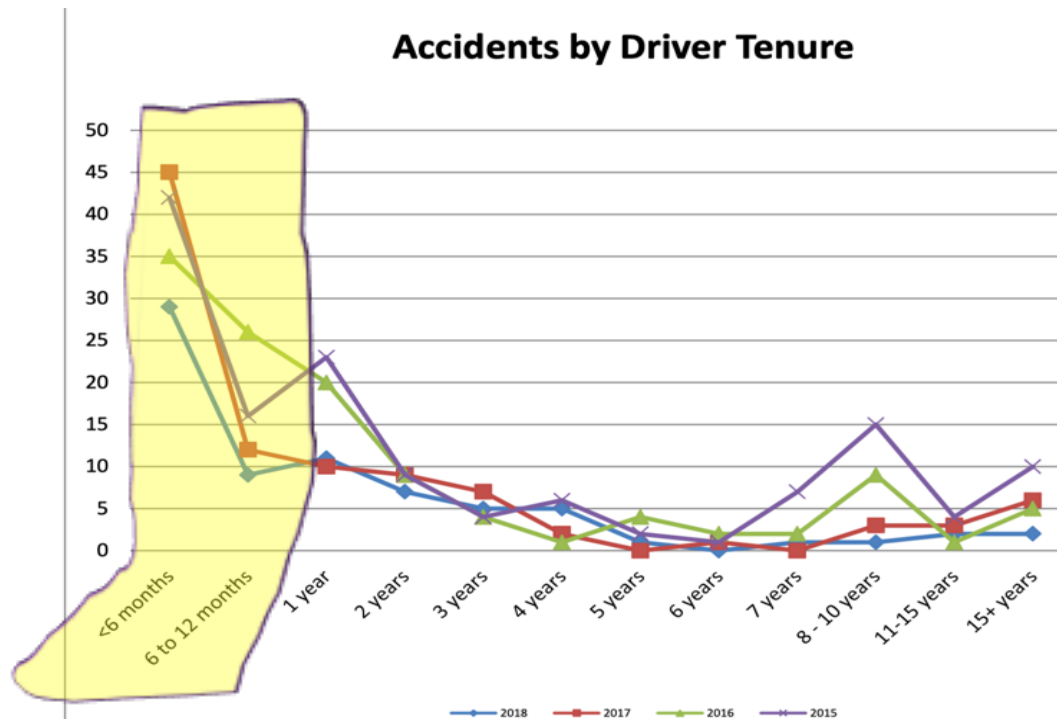
Rest stop timing/trip schedule

Examples - Actionable Insight

▣ Data point: Driver tenure



Timing of refresher training or changes to initial training based on incident types



Incident & Cost Data Can Assist You Operationally

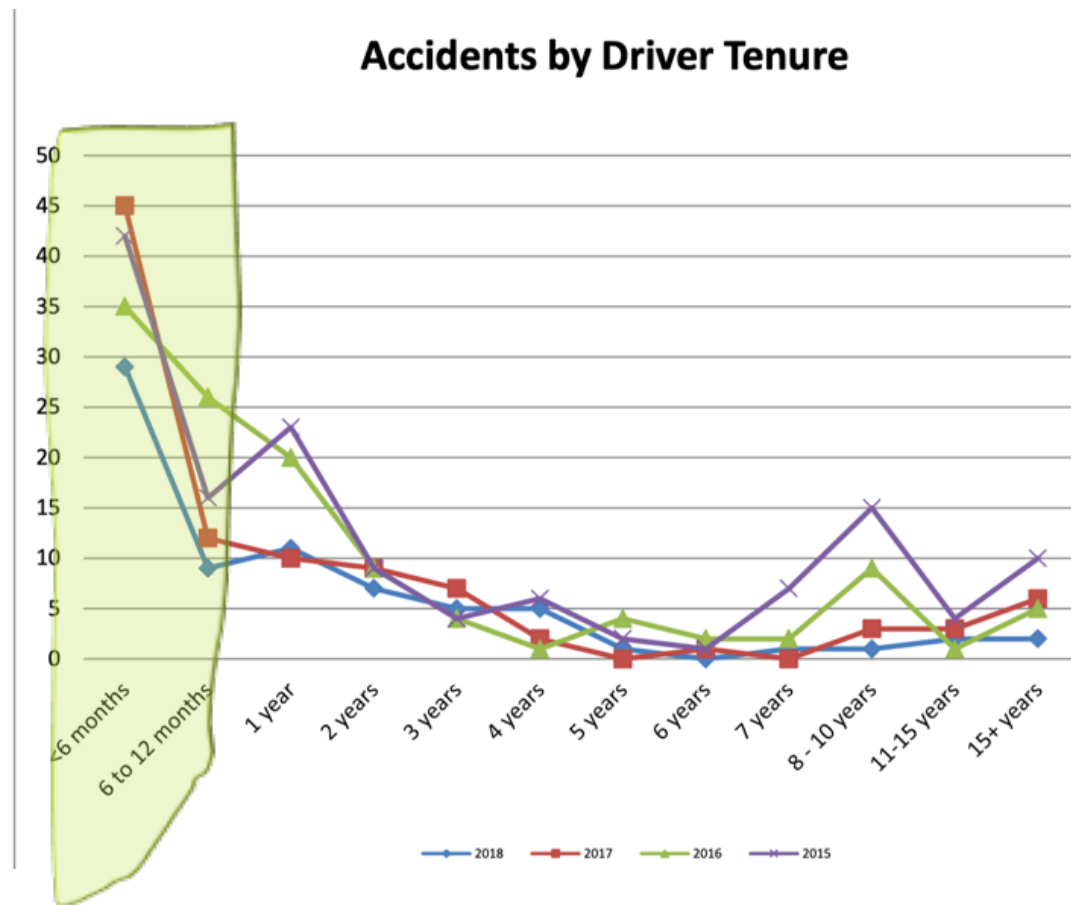
Type of Collision Event	Policy Year				Total	Total Incurred	Average/Claim
	Description	2014/15	2015/16	2016/17			
Struck vehicle in rear	1	1		2	4	\$42,448.90	\$10,612.23
Struck parked vehicle	1	3	3	1	8	\$20,868.70	\$2,608.59
Struck pedestrian, bicycle		1			1	\$554,908.27	\$554,908.27
Struck object or animal	1		1	2	4	\$18,250.59	\$4,562.65
Backed into vehicle or object		1	1		2	\$4,071.41	\$2,035.71
Intersection accident	3	6	6	3	18	\$291,635.52	\$16,201.97
Sideswipe or lane change	4	8	2	1	15	\$35,999.87	\$2,399.99
Rollover or overturned vehicle			1		1	\$166,401.48	\$166,401.48
Injured while entering or leaving vehicle				2	2	\$15,000.00	\$7,500.00
Our vehicle struck in rear	1				1	\$630.18	\$630.18
Other - comprehensive		1			1	\$137,346.25	\$137,346.25
Passenger injury not otherwise classified	1		1		2	\$150,799.94	\$75,399.97
Total	12	21	15	11	59	\$1,438,361.11	\$24,379.00

While you can't control costs of claims, you can use cost data to assist operational decisions

Incident & Cost Data Can Assist You Operationally

Example - Driver hiring costs

Driver hiring costs really should include a likely average incident costs within the first 6 mos. - year



Incident & Cost Data Can Assist You Operationally

▣ Example – Trips

❖ Specific area frequency and pricing

- NYC – frequent claims? How much on average does claims costs? Is this priced into trips?

▣ Example – Return on investment (ROI)

❖ Up-front technology costs vs identified savings

- Knowing average claim costs can help identify potential savings of certain incidents based on technology deployment

If Nothing Else...

1. Normalize your frequency
2. Track performance
3. Set GOALS

Trying to achieve GOALS if performance is not at expectation will lead you further into the abyss

Questions? Ideas to Share?

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DAECHER

CONSULTING GROUP
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