

Analysis of OSH Performance Metrics



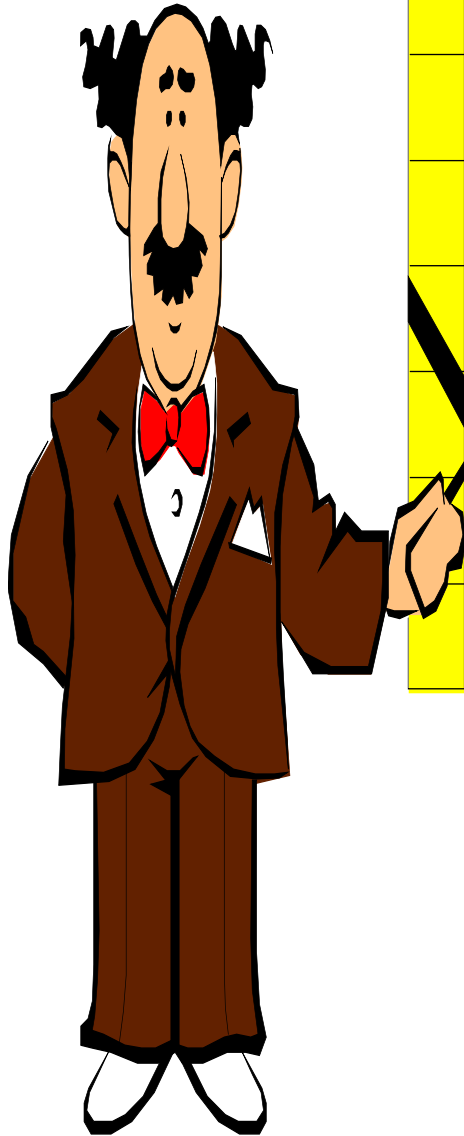
Engr. JAMIU BADMOS

Why Measuring Safety Performance?



- ❑ To show results across the business ... the Scorecard
- ❑ Trend Monitoring
- ❑ To implement strategies and policies
- ❑ Improvement prioritization
- ❑ Input into bonus and incentive systems
- ❑ A marketing tool
- ❑ Benchmarking





- What gets measured.... gets done**
- You cannot improve something you cannot measure**

ISO 45001:2018

Clause 6.2.1:OH&S objectives

**Clause 6.2.2:Planning to Achieve OH&S
Objectives**

**How does your company currently measure
safety performance?**



The Guiding Principles



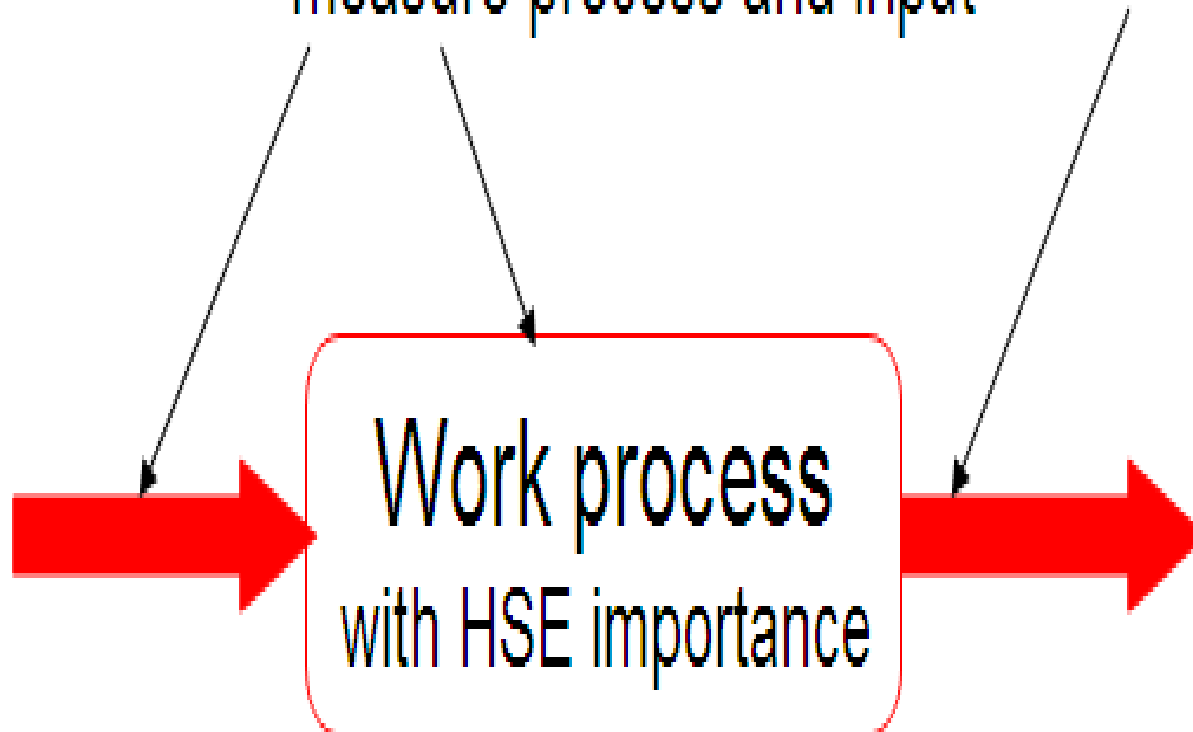
- Allow accurate, reliable and detailed comparisons
- Lead to correct or help avoid erroneous conclusions
- Be well understood by everyone, especially those responsible for implementing change
- Have a quantitative basis (even when measuring a qualitative dimension)
- Adequately map and identify causal linkages (root causes, precursors, events and outcomes)
- Prompt an appropriate response, leading to consistent focus on implementing change.

Safety Performance Indicators



Leading indicators:
measure process and input

Lagging indicators:
measure output



Leading Indicators and Metrics



They are also known as positive performance measures (PPM) or Proactive Performance Indicators.

They examine the process that lead to failures and monitors how effective our control mechanisms are in preventing these negative outcomes.

- ▶ Are aimed at the future (early warning)
- ▶ Have an influence on Lagging-indicators
- ▶ These indicators are more easy to influence

Examples: % safety tasks finished before deadline : Attitude surveys, Meetings, Audits and Inspection, Trainings

Organizations that manage on the basis of Leading KPI's are proactive

Lagging Indicators and Metrics



They are also called **REACTIVE PERFORMANCE INDICATORS** [measuring safety performance after incident has occurred].

- ▶ Are the result of an event (past)
- ▶ Indicate whether goals are met
- ▶ These indicators are hard to influence

Examples: No of LTI's/month, Monthly gas emission, Complaints received, Waste generated, Near Misses

Organizations managing solely on the basis of Lagging KPI's are reactive.

Relevant Lagging Indicators include **LTIF, TRCF, RTAF TROIF etc**

Are there calculations in OSH?



Loss Time Injury Frequency (LTIF)

Is a number of loss time injuries per million exposure hours worked during the period i.e.

$$\text{LTIF} = \frac{\text{LTI}}{\text{Exposure Hr}} \times 1,000,000$$

Total Recordable Case Frequency (TRCF)

Is the number of total recordable case per million exposure hour worked during the period.

$$\text{TRCF} = \frac{\text{TRC}}{\text{Exposure Hr}} \times 10^6$$

Road Traffic Accident Frequency (RTAF)

Is the number of road traffic accident that occurs in every one million km driven.

$$\text{RTAF} = \frac{\text{RTA}}{\text{No of km driven}} \times 10^6$$

$$\text{SR} = \frac{\text{Total number lost workdays}}{\text{Total number of recordable incidents}}$$

$$\text{AIR} = \frac{\text{Number of Accidents}}{\text{Average Number of workers}}$$



$$\text{Process Safety Total Incident Rate (PSTIR):} \quad \frac{\text{Total PS incidents} \times 200,000}{\text{Total employee \& contractor work hours}}$$

Process Safety Incident Severity Rate (PSISR) (i.e., severity-weighted Process Safety incident rate formula):

$$\text{PSISR} = \frac{\text{Total severity score for all PS incidents} \times 200,000}{\text{Total employee, contractor \& subcontractor work hours}}$$

My Humble Advice



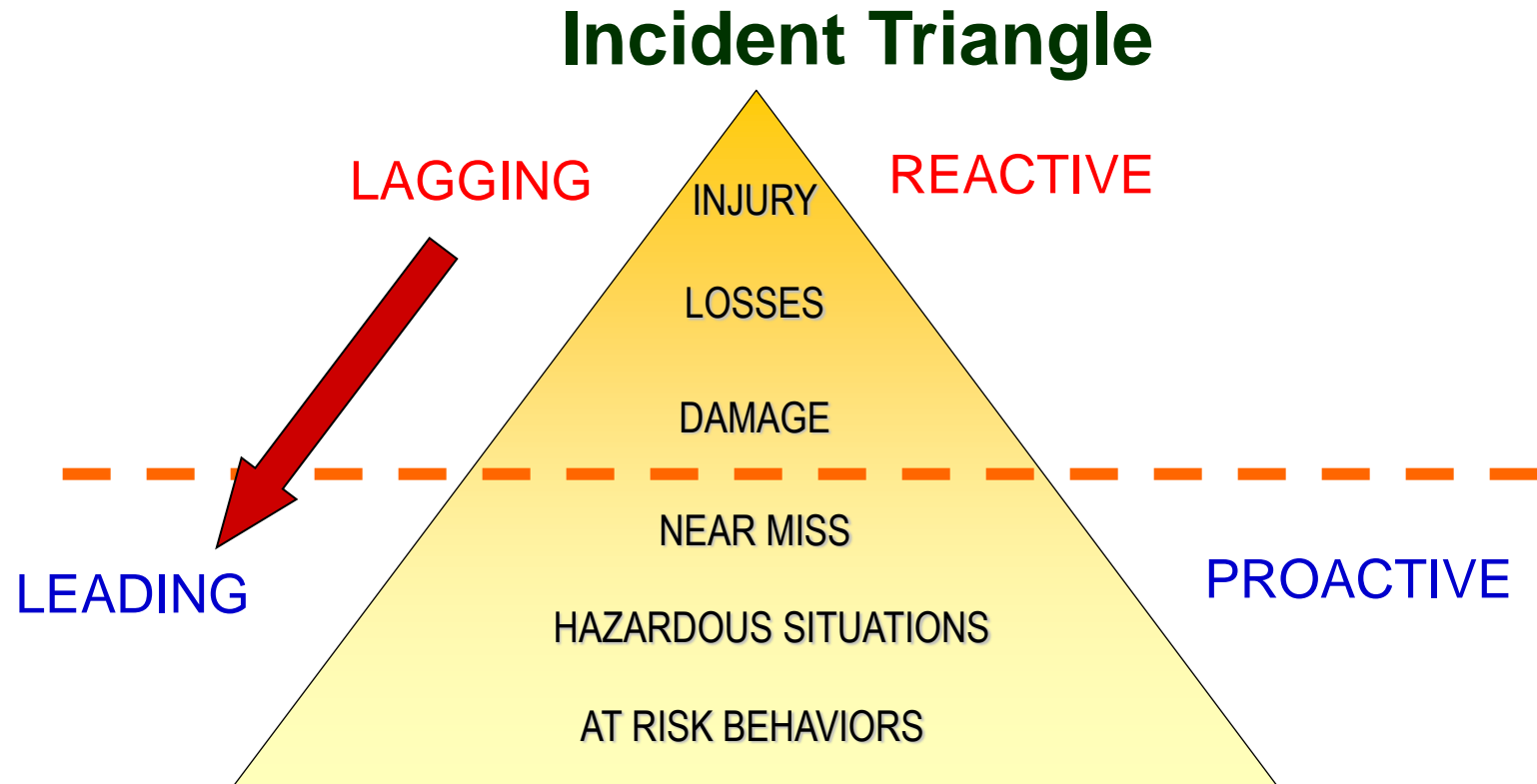
.....One way to improve the effectiveness of your safety process is to change the way it is measured.



**Where is your Annual HSE
Performance Report?**



To reduce incidents, reduce the bottom of the triangle – shift focus from lagging to leading indicators.



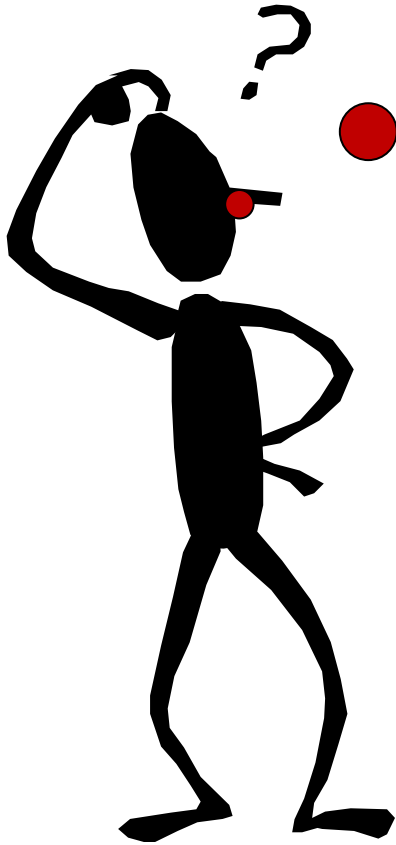
FINAL MESSAGE

Without data, all anyone has are opinions. Data elevates the probability that you'll make the right decision.



W. Edwards Deming

WHAT IS THE NEXT LEVEL?



FINANCIAL

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graph TD; Financial[FINANCIAL] --> BSC[BALANCED SCORECARD]; Learning[LEARNING & GROWTH] --> BSC; Internal[INTERNAL PROCESSES] --> BSC; Customer[CUSTOMER] --> BSC;
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**LEARNING
& GROWTH**

**BALANCED
SCORECARD**

**INTERNAL
PROCESSES**

CUSTOMER



Thank You

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