

Safety Management

IN PRODUCTION PLANNING & CONTROL

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11th Week: Proactive Safety Management & Risk Assessment

Strategies

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graph TD; A[Strategies] --- B[REACTIVE]; A --- C[PROACTIVE]; A --- D[PREDICTIVE]
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REACTIVE

PROACTIVE

PREDICTIVE

Strategies

Reactive:

Reacting to a problem or event after it emerges / occurs.

Proactive:

Preventing problems and events before they emerge / occur.

Predictive:

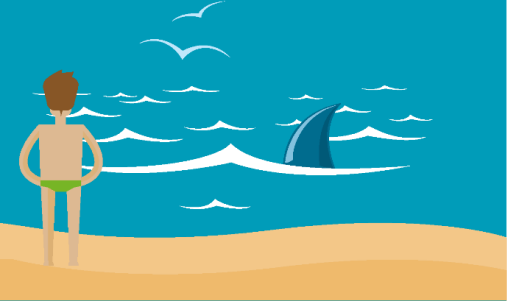
Monitoring indicators to predict and foresee the future problems.

Let's think about risk...

WHAT IS RISK?



SHARK



A shark in the sea
is a hazard



Swimming with a shark
is a risk

LIGHTNING



Lightning is a hazard



Standing under a tree during a
thunderstorm is a risk

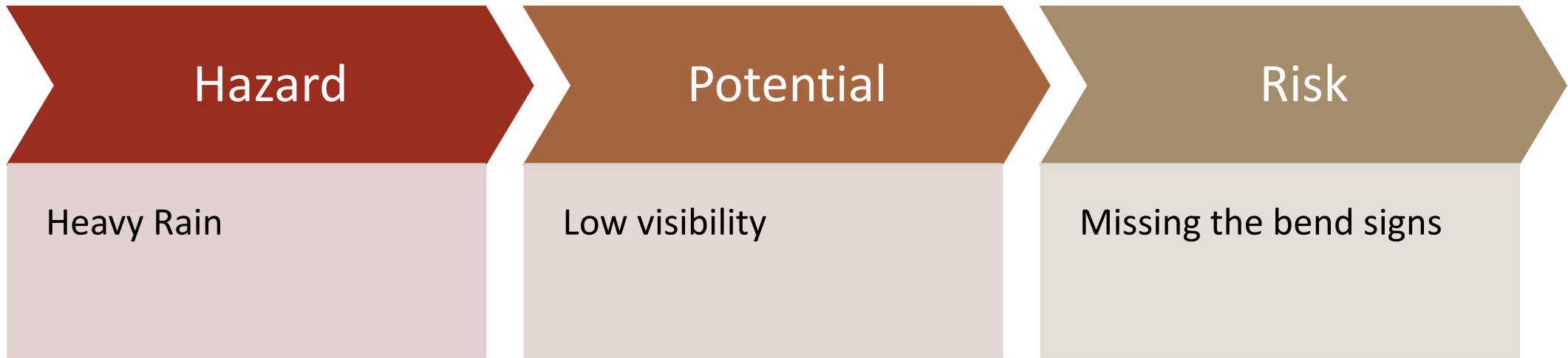
Risk

Any possible consequence of the hazard, the probability, high or low, that any **hazard** will actually cause somebody or something harm.

RISK is derived from **potential consequences** of the hazard.

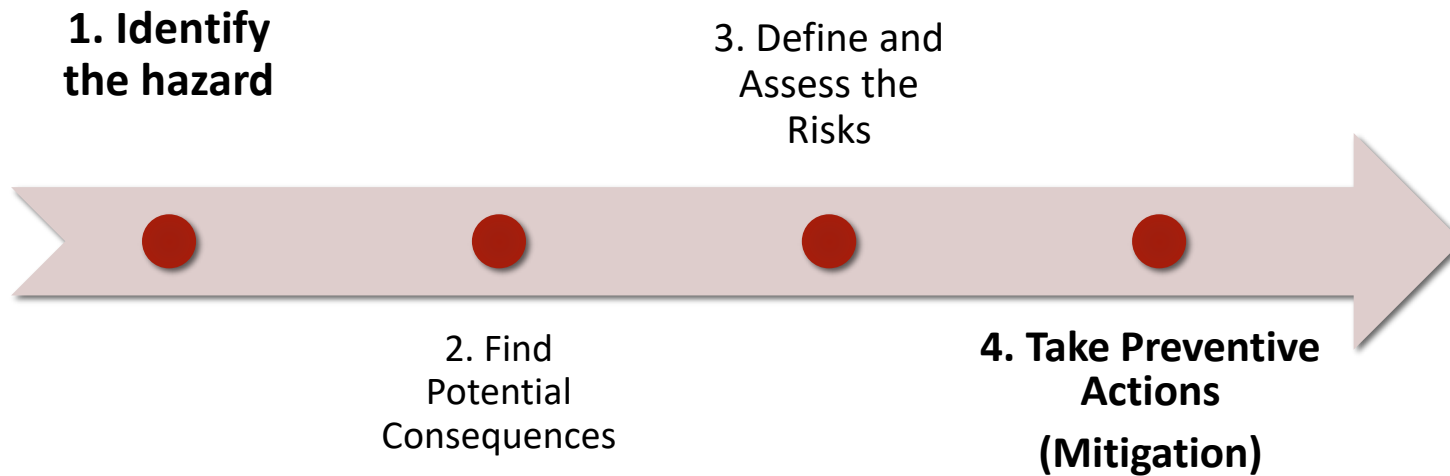
- Eaten by Shark
- Killed by Shark
- Being not aware of Shark
- Killed by lightening
- Heart crisis after lightening attack

We are going to go Ankara tonight...

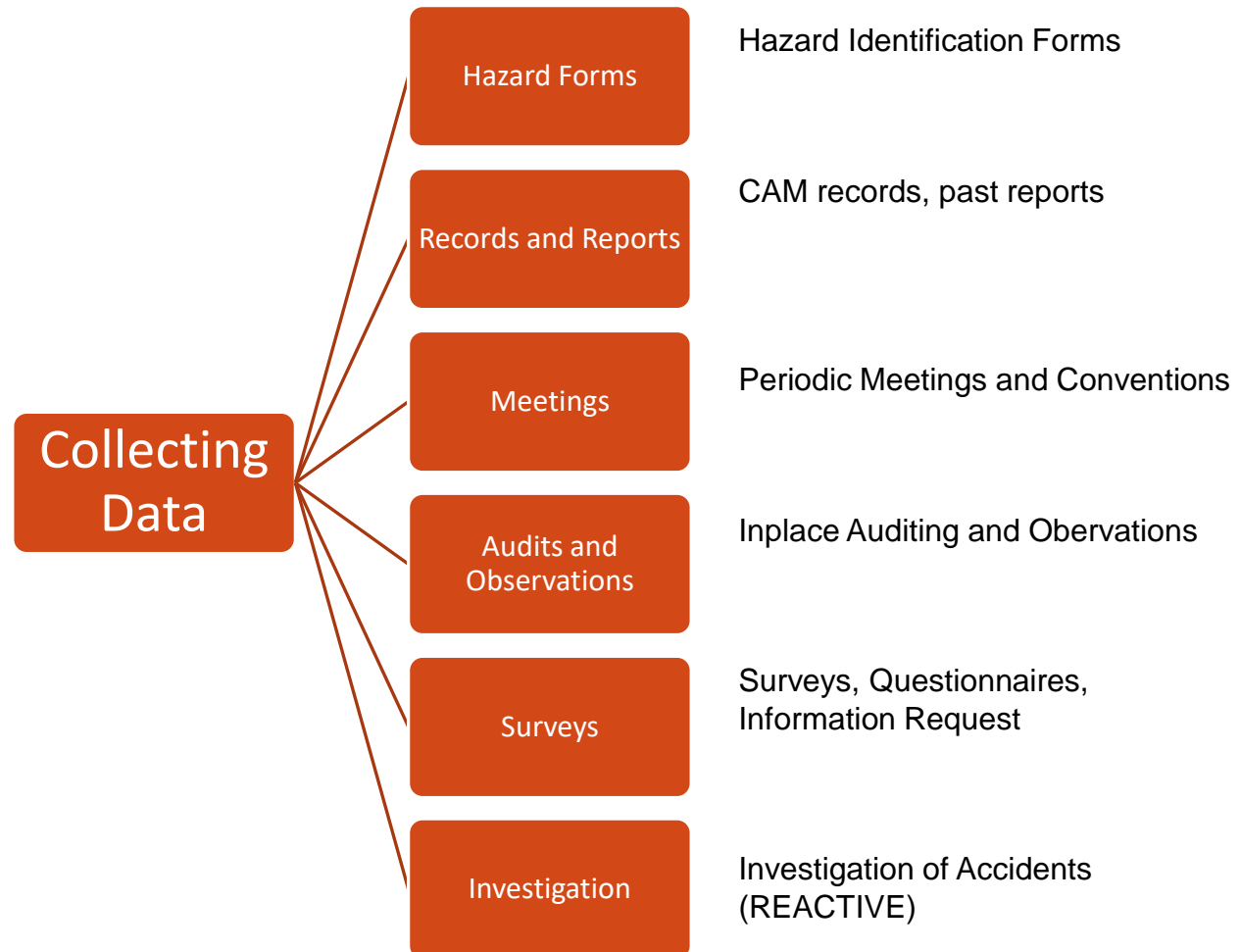


Proactive Risk Management

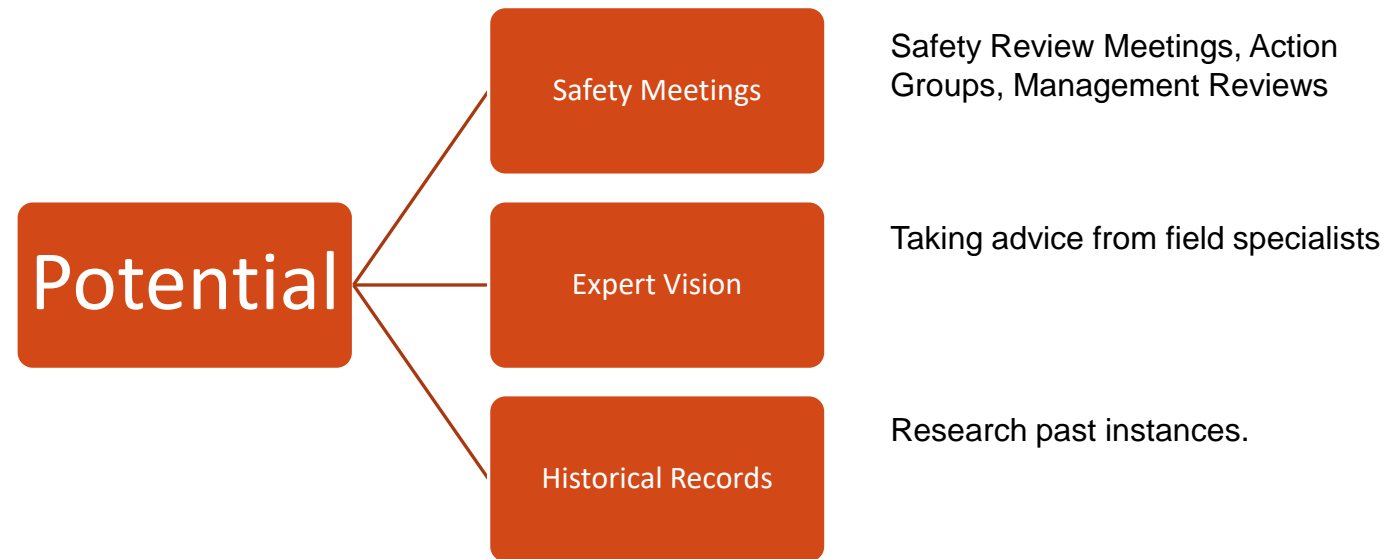
Preventing problems and events before they emerge / occur.



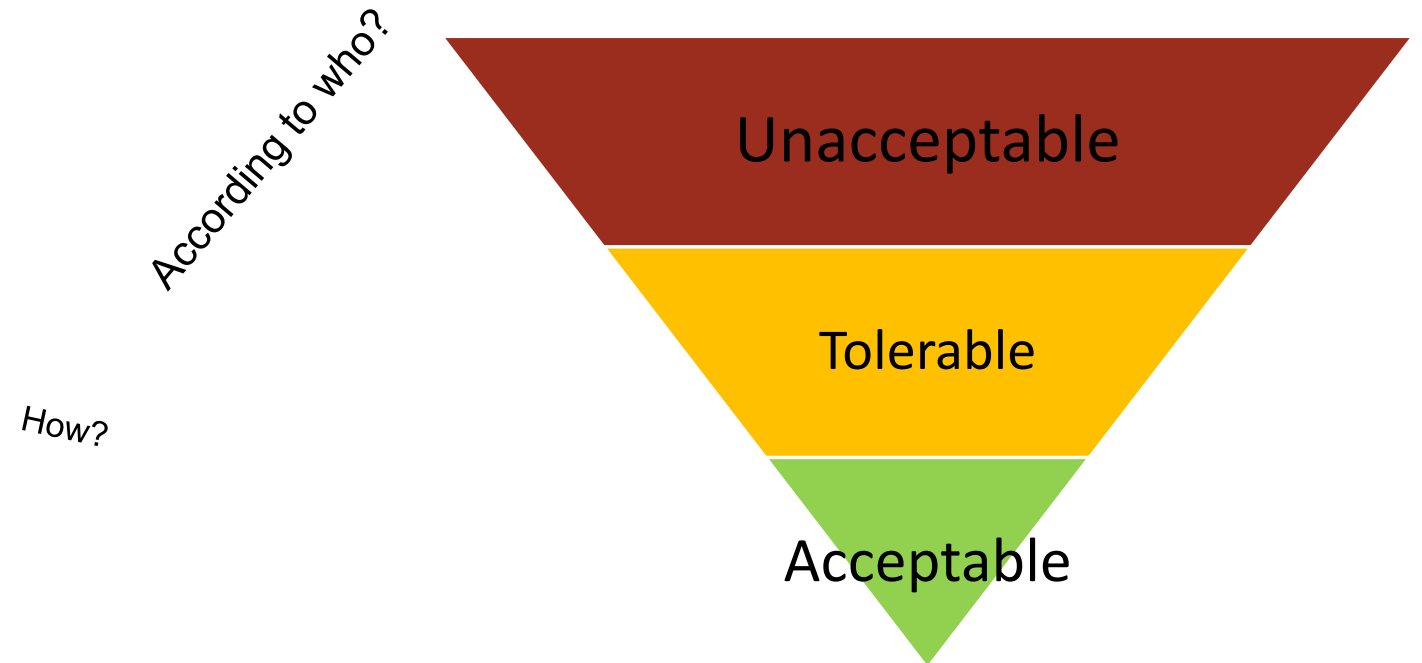
1. Hazard Identification



2. Find Potential Consequences



3. Define and Assess the Risks



$$R = P \times S$$

<u>Likelihood (P)</u>	<u>Meaning</u>	<u>Value</u>
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred infrequently)	4
Remote	Unlikely to occur, but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely improbable	Almost inconceivable that the event will occur	1

$$R = P \times S$$

Severity	Meaning	Value
Catastrophic	Equipment destroyed, multiple deaths	A
Hazardous	A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely, serious injury, major equipment damage	B
Major	A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operation conditions as a result of an increase in workload or as a result of conditions impairing their efficiency, serious incident, injury to persons	C
Minor	Nuisance, operating limitations, use of emergency procedures, minor incident	D
Negligible	Few consequences	E

$$R = P \times S$$

	Catastrophic (A)	(B)	(C)	(D)	Negligible (E)
Frequent (5)	5A	5B	5C	5D	5E
Occasional	4A	4B	4C	4D	4E
Remote	3A	3B	3C	3D	3E
Improbable	2A	2B	2C	2D	2E
Extremely improbable (1)	1A	1B	1C	1D	1E

5A, 5B, 5C, 4A, 4B, 3A

UNACCEPTABLE

5D, 5E, 4C, 4D, 4E, 3B, 3C,
3D, 2A, 2B, 2C

TOLERABLE

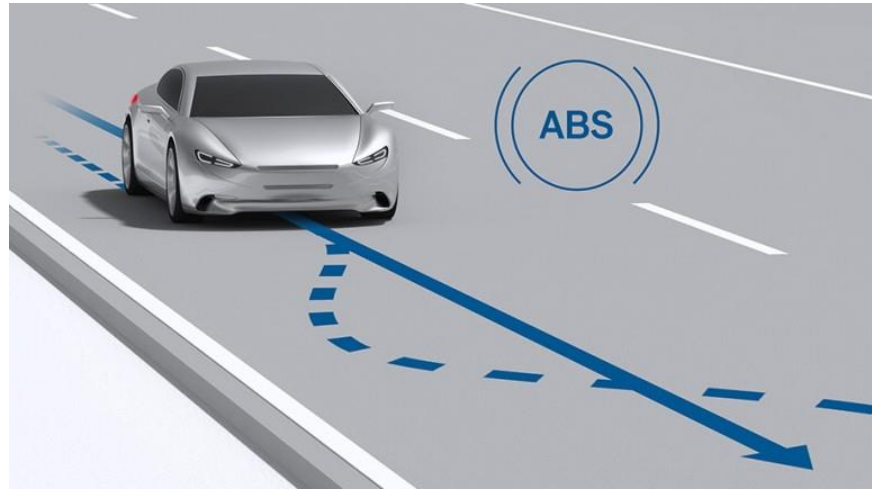
3E, 2D, 2E and
1 Group

ACCEPTABLE

How do you reduce the risk? (Mitigation)

	Catastrophic (A)	(B)	(C)	(D)	Negligible (E)
Frequent (5)	5A	5B	5C	5D	5E
Occasional	4A	4B	4C	4D	4E
Remote	3A	3B	3C	3D	3E
Improbable	2A	2B	2C	2D	2E
Extremely improbable (1)	1A	1B	1C	1D	1E

Mitigation



Thank you

