



# Stepping back from the consequences of incidents – Using causal information to inform safety improvements

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# Introduction

- Many companies will use incident data to inform safety improvements. Analyses of that data is nothing new but traditional efforts tend to focus on the outcome of the incident, the consequences – for example, the incident type or location of injury.
- In Shell we use an incident investigation methodology called Causal learning to determine cause. We now have over 5 years of causal data which has never been looked at holistically, as one data set. Last year we decided to analyse that casual data to drive evidence-based improvements in our safety performance.
- What made this analyses different, certainly within Shell UK, is that we focussed our attention on the causes that led to the incident, the conditions that were present at the time of the incident that influenced the actions or decisions of the people involved.

# Offshore Statistics HSE statistics

Figure 8. Reported Dangerous Occurrences (offshore) 2014-2023p

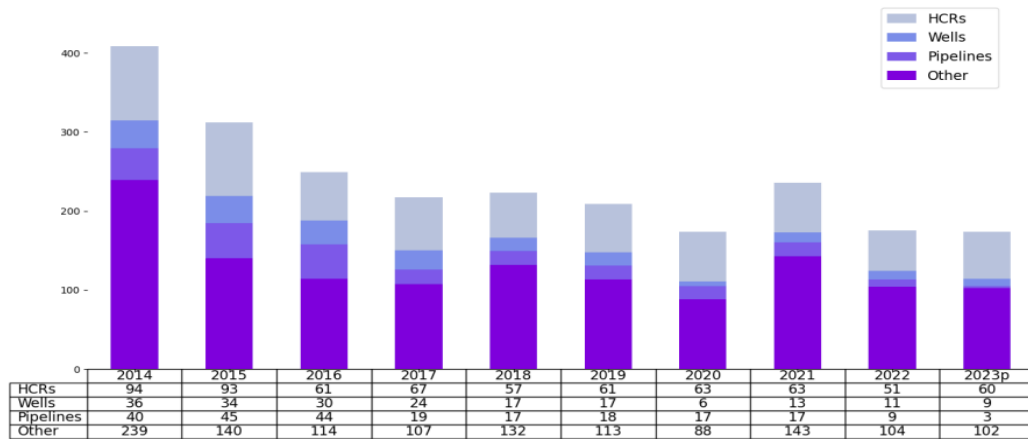


Figure 9. Hydrocarbon Releases (offshore) 2014-2023p

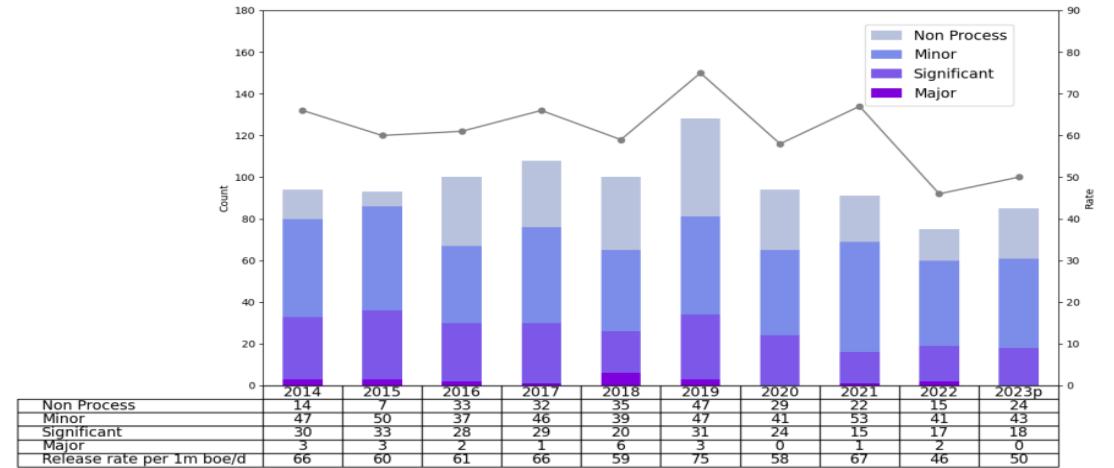
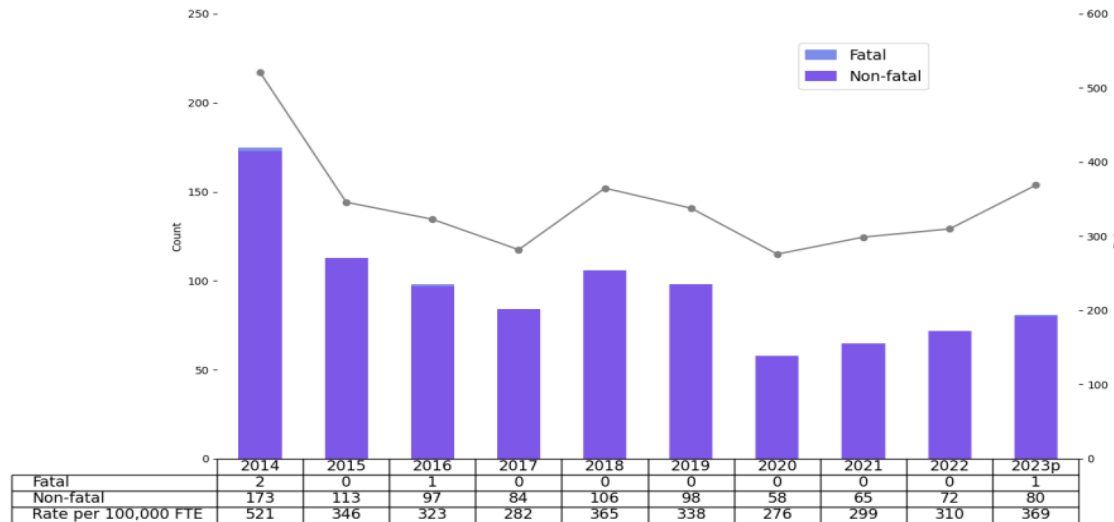
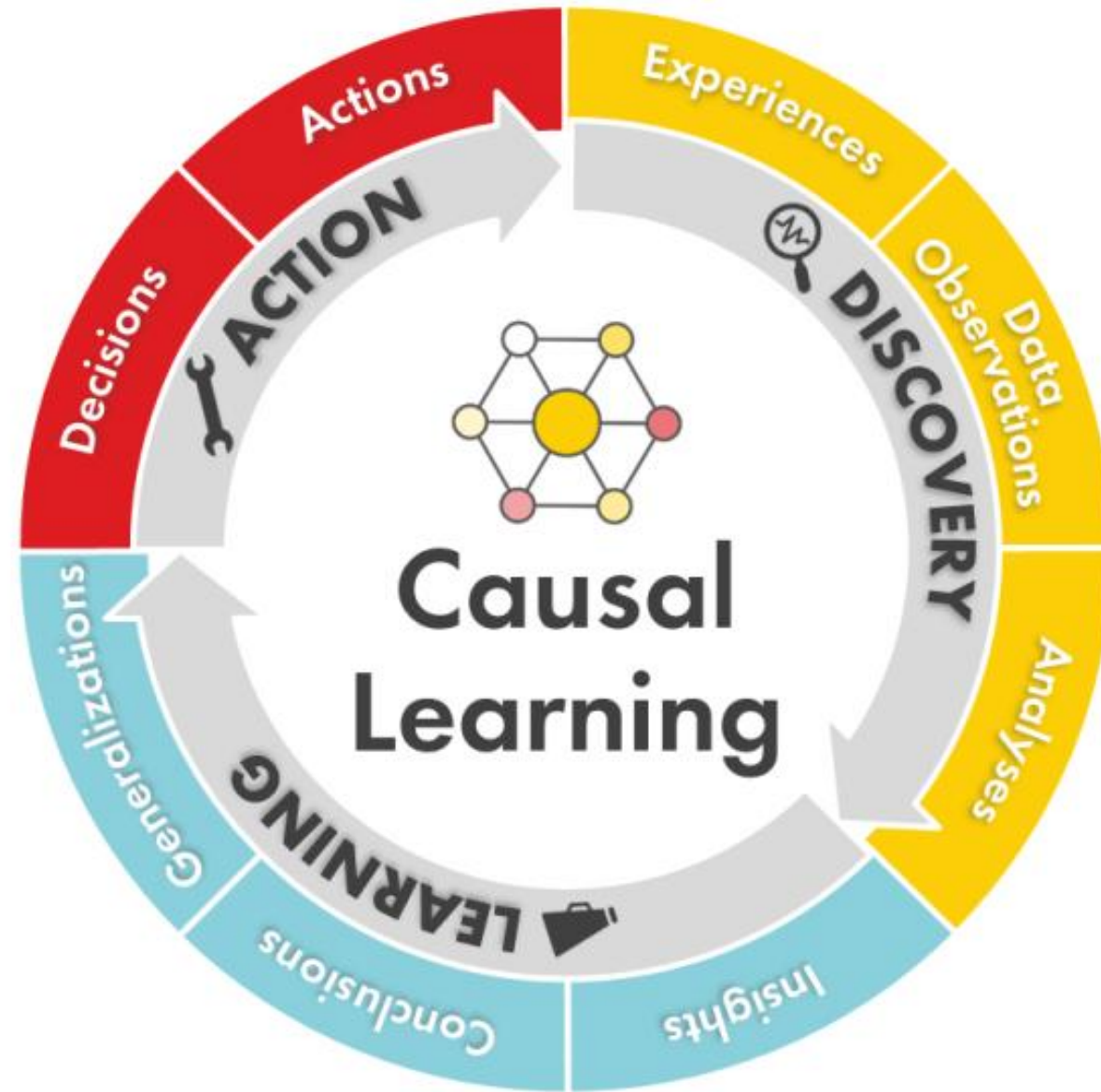


Figure 10. All reported injuries (offshore) 2014-2023p



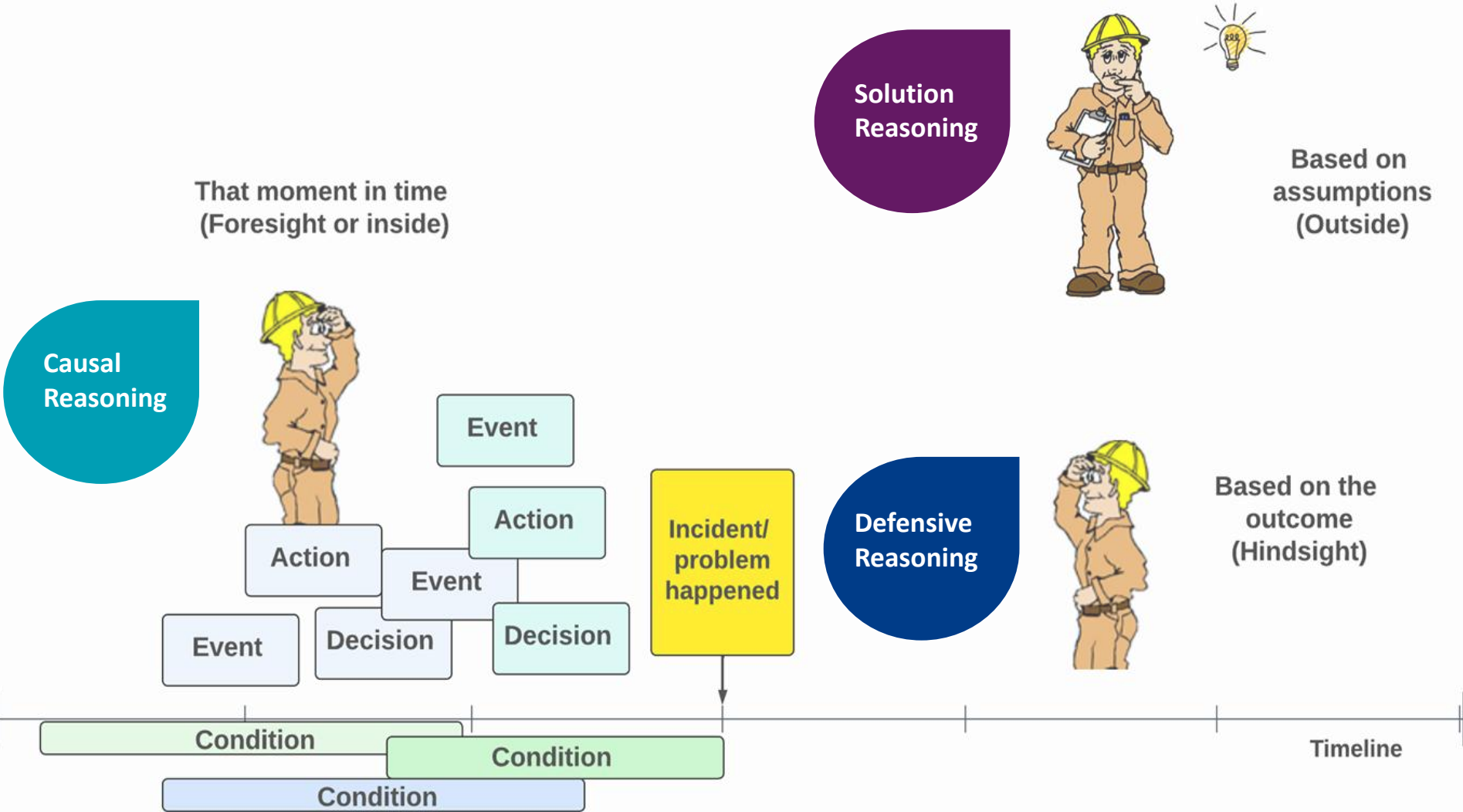
Source: HSE Offshore Statistics and Regulatory Activity Report 2023 (October 2024)

# Causal learning Overview



**Cause** - An action that did happen or a condition that was present which created an effect

# Causal Reasoning

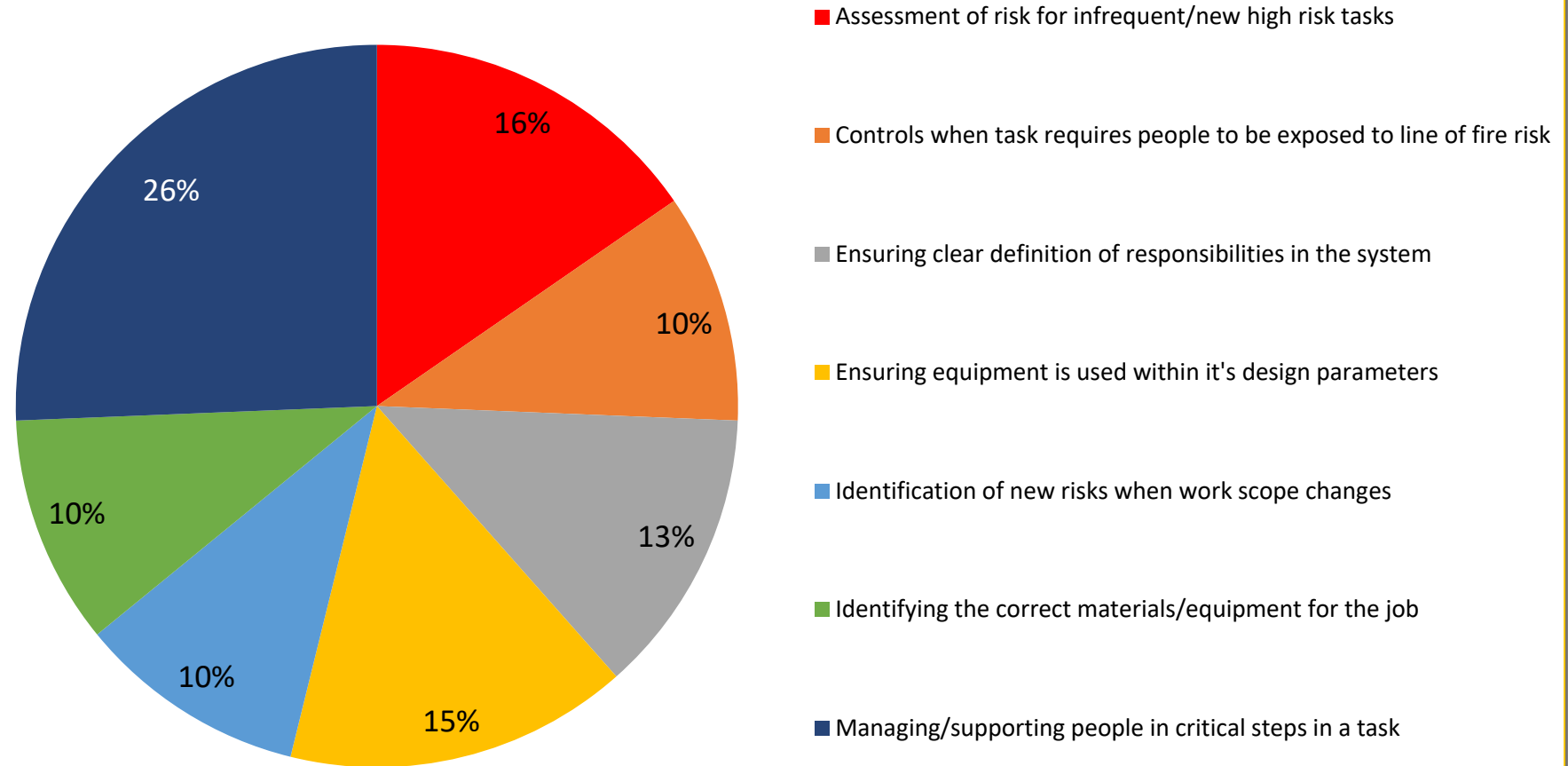


# The Causal Analyses

## The selected causes were analysed to determine the following:

- **Cause Type** - Reflects whether the cause is human, physical, organisational etc
- **Risk Management** - How the cause links to management of risk.
- **Management System** – Where the cause sits within our management system processes (PTW, MOC, etc)
- **Influence on Cause** – A factor that makes the cause more or less likely (workload, previous experience, etc)

# Risk Management Overview



# Risk Management Top 3

## Top 3 causes with risk management focus:

### 1) MANAGING/SUPPORTING PEOPLE IN CRITICAL TASKS

In 26% of the causes, a critical decision or action was required which relied on a person to carry out the step in a certain way to prevent the incident.

### 2) ASSESSMENT OF RISK FOR INFREQUENT/NEW HIGH-RISK TASKS

In 16% of the causes, the task was either new or infrequent, but it was risk assessed in a similar way to a well-known task.

### 3) ENSURING EQUIPMENT IS USED WITHIN ITS DESIGN PARAMETERS

In 15% of the causes, equipment was exposed to conditions which were outside the design of the equipment.



# Causes linked to Risk Management by Management System

## PTW/Risk Assessment (17 causes – 33%):

Assessment of risk for infrequent/new high-risk tasks (6)

Ensuring clear communication of work scope boundaries (2)

Ensuring clear definition of responsibilities in the system (4)

Identification of new risks when work scope changes (1)

Controls when task requires people to be exposed to line of fire risk (2)

Identifying the correct materials/equipment for the job (2)

## Safety starts with a conversation ...

Q4 learning theme:  
'Risk Assessment'

November – December 2024

